



# County of Ventura Planning Division

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## Initial Study for the Reestablishment and Modification of an Existing Wastewater Treatment Facility

### Section A – Project Description

1. **Project Case Number:** PL15-0106
2. **Name of Applicant/Proposed Facility Operator:** RI-NU Services, LLC,(RI-NU), Timothy J. Koziol, Manager
3. **Name of Property Owner:** Santa Clara Waste Water Company (SCWW)
4. **Project Location and Assessor's Parcel Number (APN)(Attachment 1):** 815 Mission Rock Road, Santa Paula; APN 099-0-060-565
5. **General Plan Land Use Designation and Zoning Designation of the Project Site (Attachment 2):**
  - a. **General Plan Land Use Designation:** Existing Community
  - b. **Zoning Designation:** "M-3, 10,000 sq. ft." (General Industrial, 10,000 sq. ft. minimum lot size)
6. **Description of the Environmental Setting:** The subject property is located within the approximately 95-acre Mission Rock Road (MRR) community, an industrially-zoned area located within the Santa Paula Area of Interest, approximately 0.3 miles south of State Route (SR) 126, 0.4 miles north of the Santa Clara River, and 2.0 miles west of the city limits of Santa Paula, in unincorporated Ventura County. The MRR community is one of three areas in unincorporated Ventura County with a General Industrial zone designation (M-3) that allows for the development of a broad range of general manufacturing, processing and fabrication activities, including wastewater treatment facilities. The other two industrially-zoned areas in unincorporated Ventura County are located in the communities of Saticoy and North Ventura Avenue.

Industrial uses have been established in the MRR community over the past 60+ years on land that was previously used for agriculture, primarily pasture use. Oil well development in this area began in the mid-1950s, with the first producing oil well completed in 1955. In that same time period, excavation of sand and gravel in the Santa Clara riverbed commenced, and in 1959, an asphalt batch plant and an

oilfield wastewater treatment facility (the subject project) was approved in the area. Subsequently, more industrial uses were permitted in the area in the 1960s. Currently the following types of uses are located within the MRR community: a wastewater treatment facility, auto salvage and wrecking yards, oilfield leases, truck transportation services, heavy machinery repair services, contractor's service and storage yards, a concrete and asphalt batch plant, a dog kennel, and a recreational vehicle storage yard.

The project site is 6.56 acres (285,754 sq. ft.) in area. It is bordered on the north by agricultural crop production. Immediately to the east of the project site is Mission Rock Road, a paved 30-foot private road easement, and beyond the road easement are additional industrial uses. Directly beyond the northwestern border of the project site is an approximately 95 feet wide undeveloped area of land. Beyond this area is the Cummings Road Drain and west of the Cummings Road Drain is more agricultural crop production. A two-story residence, constructed in 2009, is located just west of the Cummings Road Drain and within 40 feet of the southwestern corner of the project site on APN 099-0-050-115.

There is currently no existing landscaping within the project site and the ground has been either paved or previously disturbed. There are two existing, inactive oil wells located on the project site: "S.P.S." 17 and "S.P.S." 29 that are not part of the proposed project. "S.P.S." 17 is no longer used as an oil well and was converted to a water source well in 2013. "S.P.S." 29 is an abandoned oil well and is no longer in use.

The project site currently includes several empty baker tanks, cargo containers, and decommissioned wastewater treatment equipment. The wastewater treatment facility has not been in operation since November 2014.

7. **Permit, Violation, and Environmental Document History:** On July 21, 1959, the County granted Special Use Permit (SUP) 960 to Shell Oil Company to authorize the construction of sumps to receive oilfield salt water waste to be disposed by pipeline to the City of Oxnard's sewer system.

Since the original approval of SUP 960, the following County permitting actions have occurred:

- On September 21, 1959, the County granted a modification of SUP 960 to authorize a revision to Condition No. 3 of the conditions of approval to permit one-foot freeboard in place of the three-feet of freeboard within the oilfield waste disposal area.
- On December 31, 1959, SCWW acquired the interest of Shell Oil Company in the wastewater disposal facility. On January 12, 1960, the Planning

Division acknowledged the transfer of SUP 960 to SCWW. On February 9, 1960, the County approved the transfer of SUP 960 to SCWW.

- In 1987, the Planning Division conducted a comprehensive inspection of the industrial uses operating in the entire MRR community, including the wastewater treatment facility, to determine compliance with the land use permit conditions set forth in each of the various operators' permits. During this inspection, the Planning Division found that there was inadequate fire protection provided at the SCWW facility. During this time, all SUPs were re-classified as Conditional Use Permits (CUP). From this point forward, SUP 960 is referred to as CUP 960.
- On June 28, 1989, VenVirotek, Inc. acquired 100 percent of the stock in SCWW. On September 21, 1989, the Planning Director granted a permit adjustment to CUP 960 to authorize the replacement of piping, the replacement of oil storage tanks, the addition of a three-stage clarifier, the relocation of the existing skid mounted laboratory building, the replacement of the truck pit and entry box with a four bay truck off-loading ramp and truck washout ramp, the removal of the existing skim pit, truck pit and entry box, and the installation of an oil and chip coated drive lane for dust minimization. This project was determined to be categorically exempt from environmental review pursuant to the State Guidelines to the California Environmental Quality Act (CEQA) section 15301, Class 1, since the project involved minor alterations of the existing facility.
- On August 30, 1990, a modification of CUP 960 (Case No. CUP 960-2) was granted by the County to authorize the continued operation of the oilfield wastewater treatment facility for a 50-year operation period (ending on August 30, 2040) and the addition of modern uniform conditions of approval to require the wastewater treatment facility to operate in compliance with current state and local regulations. The County also adopted a Mitigated Negative Declaration (MND) and mitigation measures were made conditions of approval of the project. The MND identified the following potentially significant impact areas which were reduced to levels of less-than-significant through the adopted mitigation measures: fire protection, flooding, and traffic circulation.
- On November 28, 1990, the Planning Director granted a permit adjustment to CUP 960 to authorize minor site plan adjustments and the construction of an air stripper structure approximately 32 feet tall as required by the City of Oxnard in order to reduce total toxic organics to comply with permits for ocean discharge to the City's Wastewater Treatment Plant. This project was determined to be categorically exempt from environmental review pursuant to CEQA Guidelines section 15301, Class 1, since it involved minor alterations to an existing facility.

- On July 24, 1991, the Planning Division issued a Notice of Violation (Case No. ZV87-0027) for the installation of a mobile home and an office trailer on the property without the required permits. On August 9, 1991, SCWW indicated to the Planning Division that the unpermitted structures would be removed from the property and relocated to the SCWW's facility in Kern County.
- A Wastewater Conveyance and Treatment Services Agreement was entered into between the City of Oxnard and SCWW on November 5, 1991, that authorized the City of Oxnard to accept and treat 600,000 gallons or less per day of wastewater discharged by SCWW into the City's sewerage system via an existing 12-mile pipeline. The term of this agreement was for three years. Since 1994, SCWW has received yearly approval from the City to continue to use the City's sewerage system for wastewater discharge in accordance with the most current Industrial Wastewater Discharge Permit issued to SCWW.
- On November 12, 1991, the Planning Director granted a permit adjustment of CUP 960 to authorize a revision to the language of Condition No. A-1(a) of the conditions of approval of CUP 960 to allow the treatment of other types of wastewater (i.e., food processing water, softener regeneration waster, and industrial wastewater) along with oilfield brine wastewater. This permit adjustment did not authorize the treatment of more contaminated wastewater, but rather allowed for more flexibility in wastewater treatment. This project was determined to be categorically exempt from environmental review pursuant to CEQA Guidelines section 15301, Class 1, since it involved minor alterations to the existing facility.
- Between December 1991 and September 1993, the Planning Director granted eight permit adjustments of CUP 960, which was originally granted on August 30, 1990, to allow time extensions in order to satisfy all of the "prior to" Zoning Clearance conditions and receive a final Zoning Clearance for Use Inauguration of CUP 960. These permit adjustments were all determined to be categorically exempt from environmental review pursuant to CEQA Guidelines section 15301, Class 1. On October 12, 1993, the final Zoning Clearance for Use Inauguration of the 1990 modification of CUP 960 (Case No. CUP 960-2) was issued.
- On April 25, 1994, the Planning Director granted a permit adjustment to CUP 960 to authorize an additional process to the existing wastewater treatment facility, which allowed the receipt and treatment of non-hazardous rinsate waters from crude oil storage tank washouts (and tank bottoms) within Ventura County. The waste streams were determined to be similar to

the ones already approved to be received by SCWW, since the wastes' origins were the same and the sediments and floating oil were nearly identical to the treatment of non-hazardous oilfield and brine wastewater.

- On August 8, 1996, SCWW was notified by the Planning Division that the production of cold mix asphalt on the property was not an allowed process pursuant to the conditions of approval of CUP 960. SCWW was also advised that a modification application would be required to be submitted for review and approval by the County for the authorization of this proposed new use.
- On August 20, 1998, the Planning Division issued a Notice of Violation (ZV87-0027) to SCWW for the storage/stockpiling of solids for future asphalt recycling and cold mix asphalt operations and the addition of new equipment without required permits. On October 29, 1998, a Compliance Agreement (CA-7027) was entered into to allow SCWW to systematically abate the violations listed in the Notice of Violation. The Compliance Agreement required, in part, that SCWW file an application requesting modification of CUP 960 to legalize (validate) the unpermitted expansion and addition of structures at the facility.
- In accordance with the terms and conditions of the Compliance Agreement, on September 28, 1998, a Zoning Clearance (ZC78721) was issued to SCWW to authorize production and installation of cold-mix asphalt to use onsite in re-surfacing and asphalt repair. On October 22, 1998, the Planning Division issued a second Zoning Clearance (ZC78817) to authorize cold mix asphalt processing for installation of a parking area on the property.
- On December 19, 2002, the Planning Division issued an updated Notice of Violation to SCWW for the construction of several structures and the construction of two treatment ponds without required permits. On December 23, 2002, a Notice of Noncompliance was recorded against the property for the unresolved violations.
- On February 2, 2006, SCWW submitted an application to modify CUP 960 (Major Modification Case No. LU06-0011) to authorize an upgrade to the existing wastewater treatment facility and legalize (validate) the existing unpermitted structures and equipment to abate all of the unresolved violations as listed in the Notice of Violation (Zoning Violation No. ZV87-0027).
- On May 8, 2006, the Planning Director granted a permit adjustment of CUP 960 (Case No. LU06-0013) to authorize the relocation of the entry gate from Shell Road to Mission Rock Road and the relocation and replacement of

the existing office trailer from the west side to the east side of the property. This project was determined to be categorically exempt from environmental review pursuant to CEQA Guidelines section 15305, Minor Alterations in Land Use Limitations.

- The processing of Major Modification LU06-0011 was delayed from December 2008 until January 2010 due to the applicant's request to modify the project description of the application. A modified project description was submitted to the Planning Division on January 14, 2010. Subsequently, on July 29, 2010, the County granted the modification of CUP 960 to authorize an upgrade to the existing wastewater treatment facility and legalize (validate) the existing-unpermitted structures and equipment to abate all of the unresolved violations as listed in the Notice of Violation (Zoning Violation No. ZV87-0027). In addition to the approval of the project, the Planning Commission adopted a Negative Declaration (ND) pursuant to the CEQA Guidelines. LU06-0011 includes the most current operating conditions of approval for the facility.
- On October 17, 2011, the Code Compliance Division issued a Notice of Violation and Notice of Impending Civil Administrative Penalties (Violation Case No. CV11-0403) to SCWW for the installation of a double-wide mobile home and an office trailer connected to utilities without required permits.
- On September 11, 2012, SCWW submitted an application to modify CUP 960 (Case No. PL12-0130) to authorize the expansion of the facility by 2.5 acres, a re-design of the layout of the facility, the addition of a soil treatment system for treatment of solids removed during waste processing in order to be re-used instead of disposed into landfills, and the legalization (validation) of unpermitted structures to abate Violation Case No. CV11-403. SCWW obtained a demolition permit (B13-000652) to remove the unpermitted structures in order to abate the violation. The violation case was closed on October 10, 2013. The modification application was deemed incomplete on November 12, 2012. On June 4, 2015, the Planning Director terminated the modification application because it remained incomplete for more than 180 days.
- On July 17, 2014, the Planning Division issued a Zoning Clearance for Use Inauguration (ZC14-0752) of Major Modification LU06-0011. The conditions of approval of Modification LU06-0011 supersede all previously approved conditions of approval of CUP 960. Thus, the conditions established by Major Modification LU06-0011 are the current operating conditions for the existing wastewater treatment facility under CUP 960.

- On November 18, 2014, a chemical explosion and fire occurred at the SCWW facility. The explosion was caused by the mixing of a hazardous chemical with incompatible materials in a vacuum truck. The November 2014 incident resulted in the destruction of a portion of the project site as well as many of the project site's facilities. According to the City of Santa Paula, several City of Santa Paula emergency response personnel suffered respiratory injuries from inhalation hazards generated by the incident, which resulted in medical retirements.<sup>1</sup> Injuries were sustained by an onsite worker as well. In addition, the explosion and fire caused damage to nearby offsite agricultural crop production operations and industrial buildings, and the destruction of one City of Santa Paula fire truck.

At the request of SCWW, a report of the fire and explosion was prepared by Michael D. Bradbury of the Law Offices of Michael D. Bradbury on February 27, 2015, that included recommended policy changes SCWW would implement in order to prevent such incidents from occurring in the future. (Attachment 3). The recommended policy changes include: (1) the facility will no longer accept any wastewater contained in totes, and the only totes allowed to be present on the premises will contain clearly marked and labeled chemical treatment products; and, (2) additional and targeted safety training will reinforce the new policy that all liquid materials in totes are to be considered "product" and shall never be handled or processed as wastewater, along with posted detailed protocols and reminders, as well as listed potential sanctions for any violations.

After the November 2014 fire and explosion on the project site, the Planning Division suspended CUP 960 and operation of the wastewater treatment facility. On November 24, 2014, the City of Oxnard indefinitely suspended the Industrial Wastewater Discharge Permit that had allowed non-hazardous waste to be discharged from the facility to the City of Oxnard's Wastewater Treatment Plant via a 12-mile sewer pipeline.

- On April 20, 2015, the Planning Director authorized the issuance of an Emergency Use Authorization (EUA) Permit to allow specific clean-up activities as a result of the fire and explosion. Due to the severity of the incident, numerous local, state, and federal agencies (Ventura County Environmental Health Division (EHD), Planning Division, Environmental Protection Agency (EPA), Ventura County Fire Protection District (VCFPD), and the U.S. Coast Guard Pacific Strike Team) were involved with the clean-up and remediation of the site. In addition, civil and criminal charges and penalties were filed and/or levied against the property owner, operator, and individual employees of the operator.

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<sup>1</sup> Letter dated February 21, 2017, from Janna Minsk, AICP, Planning Director of the City of Santa Paula to Franca Rosengren, Case Planner, County of Ventura Planning Division.

Since the 2014 incident, no wastewater treatment uses on the site have occurred, i.e., no incoming or exporting of waste, or processing of waste. Only clean-up activities authorized under the EUA have occurred and were deemed to have been successfully completed on December 29, 2017. SCWW submitted a Final EUA Report to the Planning Division and EHD on January 30, 2018. (Attachment 4).

- On July 10, 2015, with the intent to re-open the facility, SCWW submitted an application to reinstate and modify CUP 960 (Case No. PL15-0106). The proposed project includes clarifying the project description regarding the waste streams that can be accepted by the facility and their treatment methods, the list of facility equipment, facility operating hours, truck traffic limits, operational changes, and employee limits.
- During the processing of Case No. PL15-0106, Planning Division staff identified violations at the SCWW facility. On August 10, 2015, a Notice of Violation (Violation Case No. PV15-0020) was issued to SCWW for the following violations: (1) expansion of the SCWW facility beyond the approved boundaries set forth in Modification LU06-0011; (2) failure to install the required landscaping on the property pursuant to the conditions of approval as established by Modification LU06-0011; and, (3) erection of freestanding signage without the required permits (Attachment 5). On March 29, 2017, a Notice of Noncompliance was recorded against the property (Attachment 6). The applicant proposes to address and abate these violations by incorporating them into the project description of Case No. PL15-0106, the subject of this Initial Study.
- On March 26, 2016, the applicant changed from SCWW to Patriot Environmental Services, with the latter advising the Planning Division that it was in the process of acquiring the assets of SCWW, which is contingent upon the successful reinstatement of the CUP, issuance of a new Waste Discharge Permit from the City of Oxnard, and the reopening of the facility.
- On November 7, 2017, Patriot Environmental Services advised the Planning Division that its purchase agreement with SCWW had been terminated and, therefore, that it was no longer the applicant of the subject application. Upon notification of this information, SCWW advised the Planning Division that it was again the sole project applicant.

- On February 28, 2018, the applicant changed from SCWW to RI-NU (the current project applicant).<sup>2</sup> RI-NU advised the Planning Division that it intends to operate the facility and ultimately purchase it from SCWW if the reinstatement and modification of CUP 960 (the subject project) is approved.
- At the request of the Planning Division, in October 2018, the applicant hired Ensafé, Inc.,<sup>3</sup> to conduct a Risk Management Analysis (RMA) of the applicant's proposed wastewater treatment facility. The RMA was facilitated by Ensafé staff and the applicant's representative (Sespe Consulting, Inc.). As part of the RMA, a joint site inspection of the facility was conducted and attended by Ensafé staff, Sespe Consulting staff, Planning Division staff, and prior SCWW staff on November 28, 2018. The RMA was conducted utilizing the process hazard analysis (PHA) methodology<sup>4</sup> and included a review of the proposed waste treatment processes and ancillary processes, including unloading, loading, storage, and onsite chemical transport) at the facility.
- On January 5, 2019, RI-NU submitted a revised application that included a revised domestic waste treatment process, a revised conceptual landscape plan and the RMA Report (Attachment 7) prepared by Ensafé, Inc., that identified nine recommendations for consideration to reduce risk and adequately control potential onsite hazards at the facility.

**8. Baseline Setting and Conditions:** The general baseline setting and conditions for purposes of this Initial Study include:

- The facility's physical condition, to the extent permitted, and the facility's existing permitted authority to accept, treat, and dispose of various types of non-hazardous waste streams, and to engage in supporting and ancillary activities, pursuant to the conditions of approval of Major Modification LU06-0011 which is temporarily suspended, but remains in effect.

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<sup>2</sup> In this Initial Study, the Planning Division refers to SCWW as the name of the facility and RI-NU as the proposed facility operator and applicant.

<sup>3</sup> Ensafé Inc. is a global professional services and management firm specializing in environmental, engineering, health and safety, and technology solutions.

<sup>4</sup> A Process Hazard Analysis (PHA) Methodology is a set of organized and systematic assessments of the potential hazards associated with an industrial process. A PHA is directed toward analyzing potential causes and consequences of fires, explosions, releases of toxic or flammable chemicals and major spills of hazardous chemicals, and it focuses on equipment, instrumentation, utilities, human actions, and external factors that might impact the process.

- No onsite (e.g., septic system) or offsite (e.g., connection to public sewer) individual sewage disposal system. In 2013, the onsite septic system was abandoned and porta-potties for its employees were provided as a means of sewage disposal.
- Lack of an Industrial Wastewater Discharge Permit from the City of Oxnard which, prior to its suspension in November 2014, had authorized SCWW to use an existing 12-mile sewer pipeline to discharge industrial and commercial waste to the City's Wastewater Treatment Plant. Thus, the existing facility does not currently have access to a waste discharge system for the disposal of industrial and commercial waste.<sup>5</sup>
- Historic water use records from 2011 to 2013<sup>6</sup> indicate an average of 56.6 acre-feet-year (AFY) at the facility supplied by the City of Santa Paula.

**9. Entitlements – County Process and Procedure:** The current application to authorize the reinstatement and expansion of the facility's previous operations and abatement of confirmed violations is being processed as a request for a Modification of CUP 960 pursuant to Ventura County Non-Coastal Zoning Ordinance (NCZO) section 8111-1.2.1(d). As part of processing this request, the County is evaluating the potential environmental impacts associated with the construction and operation of the proposed modified facility in accordance with CEQA Guidelines section 15063. Additional information regarding the handling and treatment of waste streams, onsite chemical storage, and waste disposal are included in this Initial Study. In addition, as part of CUP modification application processing, the Planning Division will prepare a detailed discussion (Planning Commission Staff Report) of the project's conformance with County General Plan goals policies and programs, and zoning regulations and development standards, including those related to addressing public health and safety issues.

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<sup>5</sup> As explained in the Project Description section below, the applicant is proposing the same level of service (i.e., no more than 600,000 gallons per day of discharge) that was previously authorized under the Wastewater Conveyance and Treatment Services Agreement entered into between the City of Oxnard and SCWW on November 5, 1991. Since the same level of service was provided prior to 2001, staff of the Ventura County Local Agency Formation Commission has advised that approval of an out of agency service agreement is not required in order for the City of Oxnard to continue accepting this volume of waste.

<sup>6</sup> 2013 is the last year in which the facility was operating at the same volume that the applicant requests to operate as part of the proposed project.

## **10. Regulatory Framework:**

### **a. County of Ventura General Plan and Zoning Ordinance**

Off-site wastewater treatment and storage facilities must conform to the goals, policies, and programs of the Ventura County General Plan. The NCZO includes regulations governing waste handling and waste disposal facilities in Ventura County. As mentioned above in Section A.9, the project's conformance with County General Plan goals, policies and programs, and zoning regulations and development standards, including those related to addressing public health and safety issues, will be addressed in a subsequent staff report that will include Planning Division staff's recommendation for the Board of Supervisors' consideration of the CUP modification.

Pursuant to the NCZO section 8105-5, a Board of Supervisors-approved CUP is required for an off-site wastewater disposal facility, referred to as a Community Wastewater Treatment Facility.<sup>7</sup>

### **b. County of Ventura Environmental Health Division – Certified Unified Program Agency**

The Ventura County Certified Unified Program Agency (CUPA), through its Hazardous Materials Program, provides regulatory oversight for statewide environmental programs including: (1) Hazardous Materials Business Plan (HMBP); (2) Hazardous Waste Handling; (3) Tiered Permitting; (4) Underground Storage Tanks; (5) Aboveground Petroleum Storage; and, (6) California Accidental Release Prevention Program. The Ventura County CUPA implements state and federal laws and regulations, County ordinance code requirements, and local policies for the above programs.

The Ventura County CUPA will oversee the proposed wastewater treatment facility's operations to verify compliance with all federal, state and local regulations pertaining to the storage and handling of hazardous materials.

### **c. City of Oxnard Wastewater and Stormwater Framework**

The wastewater treatment facility is proposed to be connected to an existing 12-mile sewer line that discharges non-hazardous waste to the City of Oxnard's Wastewater Treatment Plant. The City's mission in regard to wastewater and stormwater discharge is to provide treatment for these wastewater streams that meet all regulatory services in a manner that is cost-effective to the City's customers and protects the environment. The City's Wastewater Source

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<sup>7</sup> The Ventura County Initial Study Assessment Guidelines defines Community Sewage Treatment Facility as a facility that "treats liquid waste that is received from off of the facility site and includes the collection of wastewater from domestic, commercial, industrial and institutional uses, treat it to remove organic and inorganic hazardous or noxious waste materials and discharge the treated effluent" to a public sewer agency.

Control Program provides regulatory compliance oversight to other City programs and industrial and business communities (such as the subject wastewater treatment facility), including the Pretreatment Program, as required by the City's National Pollutant Discharge Elimination System (NPDES) permit for the wastewater system. The applicant will be required to obtain all required City permits, and to meet all City requirements, in order to connect and discharge to the City's Wastewater Treatment Plant.

**d. California Department of Toxic Control, Environmental Protection Agency**

The proposed wastewater treatment facility includes activities that will infrequently "generate" hazardous waste. A "Generator" is any person, by site, whose act or process produces hazardous waste identified in Chapter 11 of the state's hazardous waste regulations or whose act first causes a hazardous waste to become subject to regulation. Generators are responsible for properly characterizing or identifying all their hazardous wastes. The steps set forth to make such a determination are found in section 66262.11 of the California Code of Regulations. Once a generator determines its waste meets the definition of a hazardous waste, the requirements that apply to the waste depends on the amount or volume generated.

Table A below lists the federal, state and local agencies which have regulatory oversight of the wastewater treatment facility. The table includes the name of the regulatory agency, the previous operator's permit number, the description of the permit, and the status of the previous operator's permit. The proposed facility operator (i.e., applicant) will be required to obtain permits from each applicable agency either prior to construction (i.e., prior to the issuance of a Zoning Clearance for Construction) or renewed operation (i.e., prior to the issuance of a Zoning Clearance for Use Inauguration) of the wastewater treatment facility.

**Table A – Federal, State, and Local Regulatory Agencies**

Agency	Permit No.	Description of Permit	Status of Current Permit
County of Ventura Planning Division (Land Use Authority)	CUP 960	Authorization to operate a non-hazardous wastewater treatment facility until 8/30/2040	Suspended <sup>8</sup>

<sup>8</sup> CUP 960 and subsequent approved modifications are suspended until the proposed reinstatement, and related modification (Case No. PL15-0106), of the permit are approved and all of the "prior to Zoning Clearance for Construction and Use Inauguration" conditions for the permit modification have been satisfied.

Agency	Permit No.	Description of Permit	Status of Current Permit
State Water Resources Control Board/Ventura County Watershed Protection District (Statewide General Discharge Requirements)	WDID #4 561001962	National Pollutant Discharge Elimination System (NPDES) General Permit (CAS000001)	Pending Termination <sup>9</sup>
State Water Resources Control Board/Ventura County Watershed Protection District	N/A	Surface Water and Stormwater Runoff Maintenance Plan for Post-Construction Activities	No Approved Plan <sup>10</sup>
State Department of Toxic Substance Control (DTSC)	EPA ID No. CAD088381116	Transporter and Generator of Hazardous Waste	Inactive <sup>11</sup>
City of Oxnard (City's Municipal Code)	Permit No. OC-8	<sup>12</sup> Industrial Wastewater Discharge Permit	Suspended <sup>13</sup>

<sup>9</sup> SCWW filed a Notice of Termination (NOT) with the State Regional Water Quality Control Board relieving SCWW of coverage under NPDES General Permit (CAS000001), Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Industrial Activities. SCWW will be required to provide proof of acceptance of the NOT, and the new operator (i.e., RI-NU or any subsequent operator) will be required to show proof of coverage under NPDES General Permit prior to renewed operation of the facility.

<sup>10</sup> This requirement would be a condition of approval of the subject modification that would be implemented by the operator of the wastewater treatment facility prior to the issuance of a Zoning Clearance for Construction off the facility.

<sup>11</sup> The new operator may be required to apply for and receive a new EPA ID No. (or renew the currently inactive one) prior to renewed operations on the property.

<sup>12</sup> Centralized Waste Treatment Facility – Per 40 Code of Federal Regulations Part 437.

<sup>13</sup> SCWW's Industrial Wastewater Discharge Permit issued by the City of Oxnard was suspended on November 26, 2014, eight days after the 2014 fire and explosion at the facility. A new Industrial Wastewater Discharge Permit issued by the City of Oxnard will be required to be obtained by the new operator prior to the issuance of a Zoning Clearance for Construction of the facility and prior to use of the existing 12-mile pipeline for wastewater discharge.

Agency	Permit No.	Description of Permit	Status of Current Permit
		(Centralized Waste Treatment Facility)	
Ventura County Air Pollution Control District (APCD)	Permit to Operate (PTO) No. 00171	PTO for Processing Systems	Canceled <sup>14</sup>
VCFPD	FCP 16-00016	Fire Code Permit	Canceled <sup>15</sup>
EHD – CUPA	CUPA No. FA0004974 and CA Environmental Reporting System (CERS) No. 10331929	Hazardous Waste Program and Hazardous Materials Business Plan	Active

- 11. Project Description:** The applicant requests the reinstatement and modification to CUP 960 to authorize the continued operation of, expansion of, and various operational changes to, the existing Community Sewage Treatment Facility (Case No. PL15-0106) until August 30, 2040.<sup>16</sup>

The applicant seeks to continue to accept, treat and dispose offsite by trucks and by sewer discharge various types of non-hazardous waste streams. The applicant proposes to continue to utilize the existing 12-mile sewer discharge pipeline<sup>17</sup> connected to the City of Oxnard's Wastewater Treatment Plant for discharge of various non-hazardous waste streams (Attachment 8). The applicant proposes to

<sup>14</sup> SCWW canceled the APCD PTO since the facility is no longer in operation. Prior to construction and renewed operation of the facility, the new operator will be required to obtain all required APCD permits.

<sup>15</sup> Upon completion of the required clean-up activities authorized by the EUA Permit, the applicant requested that the Ventura County Fire Protection District cancel the Fire Code Permit FCP16-00016 because of the suspension in operation at the facility. The Fire Code Permit was subsequently canceled on January 18, 2018. Prior to renewed operation of the facility, the applicant will be required to obtain new applicable Fire Code Permits for any hazardous materials use, handling and storage, as well as for emergency generators with day tanks greater than 60 gallons.

<sup>16</sup> CUP 960, as modified by LU06-0011, was originally approved to authorize the operation of the SCWW facility until August 30, 2040.

<sup>17</sup> The SCWW facility had been operating its 12-mile wastewater pipeline pursuant to County Franchise 1.10.88, which was granted by the Board of Supervisors on April 26, 1999 and renewed/amended by the Board of Supervisors on October 25, 2011.

continue to treat and discharge industrial and commercial waste material to the City's Wastewater Treatment System.

### **Non-Hazardous Waste Streams Accepted**

The following domestic and industrial non-hazardous waste streams are proposed to be treated and disposed of at the wastewater facility in accordance with local, state, and federal requirements that regulate the safe handling of equipment, and the treatment and disposal of these types of waste streams:

- Domestic Wastes: Wastes such as septic tank waste; port-a-potty waste and secondary sewage. The proposed lab and office will contain restroom facilities that will be connected to a common discharge point into the existing sewer line.
- Industrial Wastewater Containing Metals (40 Code of Federal Regulations (CFR) Part 437 Subcategory A wastes): Wastes such as neutralized acid wastewater, boiler blowdown brine, and metal finish wastewater.
- Industrial Wastewater Containing Organics (40 CFR Part 437 Subcategory C wastes): Wastes such as solvent bearing wastes, contaminated groundwater clean-up from non-petroleum sources, landfill leachate, floral wastewater and tank clean-out fluids from organic non-petroleum sources.
- Oily Wastewater (40 CFR Part 437 Subcategory B wastes): Wastes such as materials from oilfield wastewater, oil spills, oil-water emulsions, contaminated groundwater from petroleum sources, bilge water and aqueous and oil mixtures from parts cleaning operations.
- Oilfield Sludge Wastes: This category includes the following:
  - Oilfield Drilling Muds: Used drilling muds and cuttings generated during the drilling of oil and gas wells.
  - Oilfield Tank Bottoms: Solids removed from the bottom of storage tanks used in the production of crude oil.

### **Non-Hazardous Waste Acceptance Practices**

Industrial waste generators (i.e., the facility's customers) will be required to conduct laboratory analysis of their waste streams to ensure they are not hazardous waste prior to sending them to the facility for treatment and disposal. The waste generators will submit a "profile application" of the proposed waste stream to the facility for approval. The waste generators will also submit an actual sample of the proposed waste stream to the facility. The applicant will compare the

waste stream sample to the profile description and will conduct internal sample analyses in the proposed in-house laboratory to compare to the third party analytical submitted by the waste generator. The proposed in-house laboratory will be used only for internal testing and will not be a state-certified lab used for complete waste profiling.

The applicant will also conduct bench scale treatability testing to ensure the treatment process can reduce the waste stream contaminants to levels below the facility's discharge limits. Even if the waste stream proves to be non-hazardous, if it cannot be treated sufficiently, it will not be accepted at the facility. If the physical inspection of the waste stream sample matches the profile description and the facility's in-house laboratory analyses are consistent with the third party analytical results, the applicant will allow the generator to schedule delivery of the waste to the facility.

All wastes will continue to be delivered by truck to the facility. When a waste generator's truck arrives at the facility to transfer the waste, the facility will conduct the following check for each load:

- a. A sample of the waste stream will be taken from the delivery truck before it is unloaded and physically compared to the original waste stream sample supplied by the generator.
- b. The facility's in-house laboratory will then conduct additional "fingerprint" analyses of the sample from the delivery truck. This may include checking pH, flash point, metals content, etc.

If the waste load fails either the physical inspection or the analytical "fingerprint" check, it will be rejected, and the truck will leave the facility without unloading the waste. The load check process will take approximately 30 minutes to complete.

Waste streams process flow diagrams are included as Attachment 9.

### **Unloading of Non-Hazardous Wastes Process**

Trucks, other than those carrying domestic waste, will unload at the main offloading area located at the southern side of the facility. The trucks will unload via hose into a piping manifold that leads to cone bottom waste receiving tanks. The main offloading area is paved and bermed. Domestic waste will be offloaded using hoses into cone bottom tanks at the domestic sewage area. The piping manifold for unloading domestic sewage will be located within the bermed area proposed to surround the domestic waste cone bottom receiving tanks. Other than the use of hoses to unload waste hauling trucks, transfer of fluids and waste materials to and from the waste processing equipment will be via pumps and hard piping in conformance with local, state, and federal regulations.

Hazardous materials (chemicals) used during the waste treatment process will be stored near the point of use in “day tanks” which will be placed on top of spill containment trays. These day tanks will be hard piped into the process equipment. The day tanks will be refilled, as needed, from the hazardous materials containers stored in the proposed hazardous materials storage building.

#### **Treatment Methods for Non-Hazardous Wastes**

The facility will utilize separate treatment systems for industrial and domestic wastes. The proposed treatment methods for industrial waste include:

- Dewatering with shakers and centrifuges;
- Solids settling and removal using clarifiers;
- pH adjustment using either acid or base;
- Metals removal using hydroxide precipitation (adjusting pH to make metal compounds insoluble and precipitate from solution);
- Oil skimming using an oil-water separator;
- Organics and residual oil removal using a gas energy mixing (GEM) system. A polymer is added before the liquids are sent through the GEM system. The GEM system uses air and the polymer to form a flocculent which floats organics and solids to the surface for skimming and removal;
- Organics oxidation through ozone oxides the organics converting them to water and carbon dioxide; and,
- Additional filtration utilizing bag filters, sand filters, organo-clay filters and granulated activated carbon filters.

Prior to treatment, waste streams will be tested at the facility and characterized as either 40 CFR part 437 Subcategory A, B, or C wastes depending on the levels of metals, organics, and oil found in the waste streams. Sludges generated by the waste treatment process are de-watered and/or mixed with clean, inert material and hauled offsite to a licensed landfill for ultimate disposal. Solids generated from industrial and oilfield waste treatment will be sent to the Chiquita Canyon landfill in Castaic operated by Waste Connections. The treated non-hazardous wastewaters generated by the waste treatment process will be discharged into the City of Oxnard’s Wastewater Treatment Plant by means of an existing 12-mile sewer pipeline upon the issuance of a new Industrial Wastewater Discharge Permit from the City of Oxnard.

The proposed treatment methods of domestic waste include:

- Use of screens to remove large solids; and,

- Solid/liquid separation with a centrifuge.

The proposed system will be enclosed and designed to minimize odorous emissions. Solids will be dropped from the centrifuge through an enclosed chute into a closed top bin. Liquids will be sent to closed tanks and eventually into the existing sewer line connected to the City of Oxnard's Wastewater Treatment Plant. Bins of solids generated from domestic waste treatment will be sent to the Waste Management landfill in Simi Valley.

**Proposed Modifications of CUP 960 (as previously modified by LU06-0011)**

The applicant requests the following modifications to the existing permit:

In order to abate Violation Case No. PV15-0020, the requested modified CUP would legalize the unpermitted expansion of the facility's operational boundary by 1.67 acres. With the proposed expansion, the facility's operational boundary will encompass a total of 6.56 acres. Within the 1.67-acre expansion area, the applicant proposes a total of 29,362 sq. ft. of impervious surface: 26,335 sq. ft. was installed without permits and is proposed to be legalized (validated), and 3,027 sq. ft. of new impervious surface will be installed. Within the current permit boundary, there is a total of 104,566 sq. ft. of existing impervious surface. As part of the modification request, the applicant proposes the addition of 1,825 sq. ft. of impervious surface within the current permit boundary. The total impervious surface area of the current and the expansion permit area will be 135,753 sq. ft.

The applicant proposes to re-design the layout and operation of the existing facility so that the facility may operate safer, more efficiently, and the waste processing equipment is located further from the agricultural zoned areas that border the project site. As part of this process some existing equipment (i.e., old tankage and processing equipment) will be removed and replaced with new equipment. The reconfiguration of the facility will occur in one phase that is expected to take six to nine months to complete, and includes the relocation of processing operations closer to the center, eastern and northern portions of the site and utilizing the southwest corner for administrative office functions.<sup>18</sup> The facility will include over 1,000,000 gallons of tank storage capacity onsite at any one time (refer to Tables 1 and 2 below).

An outfall into the Cummings storm drain for a "non-brine discharge stream" was approved for installation pursuant to Major Modification LU06-0011 but was never installed. The applicant requests to remove this component from the project and will not install a separate outfall.

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<sup>18</sup> These activities are considered "construction" in the impact analysis. All other activities referenced in this impact analysis are considered "operational" activities.

The applicant proposes to implement the following operational policy changes as part of the proposed project:

- The facility will no longer accept any wastewater contained in totes. The only totes allowed on the premises will contain clearly-marked and labeled chemical treatment products. Additional and targeted safety training to reinforce the new policy that all liquid materials in totes are to be considered “product” and shall never be handled or processed as wastewater, along with posted detailed protocols and reminders, and listed potential sanctions for any violations.
- The chemical treatment products and any other hazardous materials not being actively used in the treatment process will be stored inside a separate dedicated hazardous materials storage building.

Tables 1 and 2 below identify the existing (E) and proposed (P) equipment and structures, respectively, the sizes of each, and an identification marker that correlates to the proposed site plan of the facility (Attachment 10). The proposed re-design of the facility includes fewer tanks and less processing equipment than what was approved under the suspended permit.

**Table 1 – Existing (E) Pads, Equipment and Structures to Remain**

Site Plan ID	Description	Size in Sq. Ft.	Status
A	Receiving Bays (4)	2,400	E
B	Trash/Grit Removal Unit	681	E
CL1-5	Clarifier Units (5)	1,600	E
D1	Centrifuge Unit	31	E
D2	Centrifuge Unit	31	E
D3	Centrifuge Unit	31	E
K	Maintenance Shed	320	E
N1	Sea Container (records storage)	320	E
N2	Sea Container (parts storage)	320	E
N3	Sea Container (parts storage)	320	E
AA	3 – Concrete pads	8,575	E
1	10 – 20,000-gallon waste receiving tanks	3,360	E
2	10 – 20,000-gallon process tanks	3,360	E
3	5 – 20,000-gallon process tanks	1,680	E
5	14 – 20,000-gallon process tanks	4,704	E
14	Shipping Pit	231	E
18	Diesel Fuel Tank (w/secondary containment)	126	E
20	Stockpile storage and recycle area (Mix Areas 1 & 2)	8,800	E
22	One VCAPCD Control Device	n/a	E

**Table 2 – Proposed (P) Pads, Equipment and Structures**

Site Plan ID	Description	Size in Sq. Ft.	Status
D	Mixing Tanks (6+)	828	P
E	Electro-Coagulation Unit or other Metal Removal Unit	145	P
F1	Ozone Unit	237	P
G	Gas Energy Mixing (GEM) Unit	1,270	P
H	Modular Office	1,056	P
J	Modular Laboratory	648	P
L	Modular Employee Changing Room/Break Room	864	P
BB	2 – Shaker Units (screens)	252	P
HH	Skim Tanks (2)	226	P
4	46 – 6,000-gallon cone bottom process tanks	2,944	P
12	Sand Filters (6 to 8)	300	P
13	Portable Water Tanks	128	P
16	Carbon Filters	237	P
17	Filter Units (organo-clay)	237	P
19	pH Adjustment Tank	226	P
21	Two reverse osmosis units	15 each	P
23	Concrete pad (4,850 sq. ft. in area)	4,850	P
25	Hazardous Materials Storage Building	610	P
26	Oil/water separator	119	P

As identified in Table 2, above, in addition to the removal and/or replacement of various equipment, the modified CUP would also include the authorization to install four new buildings on the site (Refer to Attachments 10 and 11):

New 1,056 sq. ft. Office (labeled as “H” on the site plan and in Table 2, above):  
The 1,056 sq. ft. (24 feet x 44 feet) modular office will be used at the facility by personnel for administrative functions relating to the facility operations, which includes but not limited to scheduling waste shipments and maintaining shipping manifests. The office will include a restroom.

New 648 sq. ft. Laboratory (labeled as “J” on the site plan and in Table 2, above):  
The 648 sq. ft. (54 feet x 12 feet) modular laboratory will contain the laboratory analytical equipment and include space for lab technicians needed to test incoming waste loads to be sure they are the same as the waste streams profiled and do not exceed hazardous waste criteria. The laboratory will be used to conduct bench scale treatability testing to be sure the facility treatment processes can reduce the waste stream contaminants to levels below the facility’s discharge limits. The laboratory will be equipped with laboratory sinks and an emergency shower/eyewash station. The laboratory will include a restroom.

New 610 sq. ft. Hazardous Material Storage Building (labeled as “25” on the site plan and in Table 2, above): The 610 sq. ft. (61 feet x 10 feet) metal hazardous materials storage building will be used to store any hazardous materials (i.e.,

treatment chemicals) that are required for the treatment processes used to treat the incoming waste streams. The applicant proposes to store these materials and chemicals, when not in use in the treatment processes, inside this separate dedicated hazardous materials storage building. This building will be spill contained and have separate storage areas to allow for segregation of incompatible hazardous materials (e.g., store acids separately from caustics). This building will not include any plumbing or restroom facilities.

New 864 sq. ft. Employee Changing/Break Room (labeled as "L" on the site plan and in Table 2, above): The 864 sq. ft. (36 feet x 24 feet) modular changing/break room building is intended to provide employees a place to change into and out of their work clothing and boots, take breaks, and eat lunches inside a shaded and cooled structure. Additionally, this building will be used to store safety equipment, such as respirators and Tyvek suits, and will have benches, lockers, a table and chairs. This building will not include any plumbing or restroom facilities.

There are four existing showers/eye wash stations that are spaced throughout the facility so that employees will have quick and easy access, if needed. One additional shower/eye wash station is proposed inside of the proposed laboratory building.

The modified CUP will authorize a change in facility operating hours and truck delivery schedules to include the following:

**Table 3 – Proposed Operating Hours and Truck Delivery Schedule**

Authorized Actions	Days and Hours
Plant Operation – Waste Processing Operations	24 hours/day, 365 days/year (for onsite treatment operations)
All Truck Deliveries to and from the Facility	Monday through Friday, 7:00 a.m. to 7:00 p.m. Saturday, 8:00 a.m. to 3:00 p.m. No Trucking Deliveries or Shipping on Sunday Except Emergencies <sup>19</sup>

The truck delivery limits specified in Table 3 above shall not be exceeded, but the limits may be altered for a period of time for emergencies through prior written authorization from the Planning Director or his/her designee based upon good cause being shown and substantially documented by the permittee.

The modified CUP will authorize a change to the truck trip limits by removing the distinction between the delivery trips and outgoing waste trips and authorizing an overall truck trip limit. Table 4, below, summarizes the existing truck trip limits:

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<sup>19</sup>The Planning Director would determine if the situation constitutes an emergency and whether the off-hours acceptance of materials would be authorized on a case-by-case basis.

**Table 4 – Existing Truck Trip Limit**

<b>Trip Type</b>	<b>Weekly Trucks</b>
Supply Deliveries	4
Outgoing waste and recyclable product	16
Waste Deliveries	480 (80 per day, 6 days/week)
CUP Weekly Total	500
Average Trucks/Day	83.3
Average Daily Trips (ADT)	166.6

The proposed truck trip limit changes below in Table 5 represent no increase in weekly truck trips.

**Table 5 – Proposed Truck Trip Limit**

<b>Trip Type</b>	<b>Weekly Trucks</b>
All Delivery Trucks (incoming and outgoing wastes, supplies, etc.)	500
Average trucks/day	83.3
Average daily trips (ADT)	166.6
Daily maximum truck limit	100
Daily maximum trips (ADT)	200

Historically, wastewater conveyance treatment services agreements entered into between the City of Oxnard and the subject facility allowed up to 600,000 gallons per day of treated wastewater to be discharged by the facility into the City's sewerage system connected to the existing 12-mile pipeline. Based on the requested 83.3 (average) to 100 (maximum) delivery trucks per day, the facility may receive between 400,000 and 500,000 gallons per day of non-hazardous waste for treatment:

83.3 average truck/day x 120 barrels(bbl))/truck x 42 gal/bbl = 419,832 avg gal./day  
100 maximum truck/day x 120 bbl/truck x 42 gal/bbl = 504,000 max gal./day

Since waste discharges may not occur every day, there may be days where discharges exceed 500,000 gallons per day. The modified CUP restricts the number of waste delivery trucks to the facility on a daily and weekly basis, as listed in Table 5, but does not place restrictions on the daily amount of waste discharged into the City's sewerage system, which is covered by the final Waste Discharge Permit issued by the City of Oxnard. The facility includes over 1,000,000 gallons of tank storage capacity onsite at any one time.

The modified CUP will authorize a change to the number of employees at the facility. The existing permit authorizes 15 employees. The applicant proposes an additional 25 employees (increase from 15 to 40 employees). This will result in two work shifts with 15 employees at the facility (mornings and afternoons) and one work shift with 10 employees at the facility (graveyard shift when no incoming

waste trucking occurs). The additional employees will serve expanded operating hours and ensure compliance with local, state, and federal regulations on a 24-hour period.

The modified CUP will authorize the installation of 26,862 sq. ft. (9.8 percent of the CUP area) of landscaping, which will include 128 new trees and 183 new shrubs and low-growing plants as illustrated on the applicant's conceptual Landscape and Planting Plan (Attachment 12). Landscaping will be located within the new parking lot area, adjacent to the proposed office building, and along the perimeter of the project site. There will be no internal landscaping near any processing equipment. All proposed landscaping will be installed prior to the issuance of a Zoning Clearance for Use Inauguration, i.e., prior to renewed operation of the facility.

The modified CUP will authorize a total of three driveways to the facility. The driveways along Mission Rock Road and Shell Road will help facilitate the safe and orderly movement of haul trucks throughout the facility. The facility entrance located along Shell Road, adjacent to the proposed office and visitor parking, will be restricted to visitor and employee vehicles only.

A total of 27 parking spaces will be provided at the facility to be used by employees and visitors, including one ADA accessible parking space.

The modified CUP will authorize a total of 23 exterior light fixtures: 20, 25-ft. tall pole-mounted lamps throughout the facility, and 3, 25-ft. mounted lights attached to the exterior of the proposed laboratory. All proposed lighting will be shielded, cut-off fixtures as shown on the applicant's proposed Lighting Plan (Attachment 13).

A proposed sign plan (Attachment 14) prepared by the applicant shows a freestanding identification sign measuring three feet tall by eight feet wide (24 sq. ft. sign area) and extending five feet and five inches above grade, located 15-feet from the street-side property line. The proposed sign plan also includes all interior signage that cannot be viewed from the public roadway, such as employee safety protocol and directional signage.

Within the CUP boundaries there are two existing, inactive oil wells which are not part of the proposed project: SPS 29, which is abandoned; and, SPS 17, which is an active water supply well currently owned by California Resources Corporation. The proposed project's components will not interfere with the accessibility requirements for either well.

Water service will continue to be provided by the City of Santa Paula by means of an existing 1.5-inch meter (Meter #11314216). Individual sewer service for the facility's employees will be provided by the City of Oxnard by means of the existing

12-mile sewer pipeline to the City's Wastewater Treatment Plant, upon issuance of a Sewer Will-Serve Letter from the City of Oxnard.

- 12. List of Responsible and Trustee Agencies:** The cities of Santa Paula and Oxnard are responsible agencies for this project based on their provision of water and wastewater disposal services, respectively. There are no trustee agencies which have jurisdiction over any natural resources affected by this project that are held in trust for the people of the State of California. In addition, the federal, state, and local agencies which have regulatory oversight of industrial wastewater treatment facilities are listed in Item 10, above.
- 13. Methodology for Evaluating Cumulative Impacts:** Under CEQA "Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In order to analyze the proposed project's contribution to cumulative environmental impacts, this Initial Study relies on the list method.

Pursuant to the CEQA Guidelines section 15064(h)(1), this Initial Study evaluates the cumulative impacts of the project using the list approach, by considering the incremental effects of the proposed project in connection with the effects of past, current, and probable future projects. With regard to the list method, this Initial Study evaluated the proposed project's contribution to cumulative impacts associated with related past, current, and probable future projects which are mainly those projects within five miles of the proposed project site and have the potential to contribute to the impact that is evaluated in this Initial Study.

For a list of past, current, and probable projects within the unincorporated area of Ventura County that were included in this analysis, please refer to Table B below, and the attached map (Attachment 15).

**Table B – Pending/Recently Approved County Projects within 5-Mile Radius**

Permit/ Application Number	Permit Type	Description	Status
PL17-0106	CUP	CUP to authorize (validate) an agricultural contractor's service and storage yard.	Approved July 23, 2018

Permit/ Application Number	Permit Type	Description	Status
PL17-0085	Minor Modification of CUP	Minor modification of CUP LU7-0132 to authorize the continued operation and use of a wireless communications facility.	Pending
PL17-0108	Minor Modification of CUP	Minor modification of CUP-5275 to authorize the continued operation of a model airplane field.	Pending
PL15-0113	Lot Line Adjustment (LLA)	LLA between two legal, conforming lots in the RE-1ac zoning designation.	Pending
PL16-0064	LLA	LLA between two lots both within the Agricultural Exclusive zoning designation.	Approved on May 8, 2018
California Energy Commission 2015-AFC- 02	Application for Certification	Mission Rock Energy Center, LLC proposes to construct, own, and operate an electrical generating plant.	Suspended Review
PL18-0078	CUP	Wireless Communications Facility	Pending
PL18-0041	Minor Modification of CUP	Minor Modification of CUP 5020 to authorize the continued use of a wireless communications facility.	Pending
PL18-0068	CUP	CUP to authorize a third story to an existing ministorage facility.	Pending
PL18-0029	Minor Modification of CUP	Minor modification of CUP 4869 to authorize the continued use of a wireless communications facility.	Pending
PL17-0156	Continuation Permit	Continuation of a non-conforming use (wood working warehouse) located in the Saticoy Area Plan.	Suspended Review
PL17-0154	CUP	CUP to authorize a Commercial Organics Processing Operation.	Pending
PL18-0139	Modification of PD	Modification of PD to authorize the removal of the expiration date of the permit.	Pending
PL18-0006	Minor Modification of CUP	Minor modification of CUP LU07-0121 to authorize the continued use of an Agricultural Promotional Facility.	Approved on February 5, 2019
PL16-0086	LCA Contract	A 10-year LCA Contract.	Pending
PL18-0011	PMW/LLA	Adjustment between two legal lots.	Pending

The list of past, current, and probable projects within the city limits of the City of Santa Paula (within a 5-mile radius of the project site) that were included in this analysis, are included in Attachments 16 and 17.

## Section B – Initial Study Checklist and Discussion of Responses<sup>20</sup>

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>RESOURCES:</b>								
<b>1. Air Quality (VCAPCD)</b>								
<b>Will the proposed project:</b>								
a) Exceed any of the thresholds set forth in the air quality assessment guidelines as adopted and periodically updated by the Ventura County Air Pollution Control District (VCAPCD), or be inconsistent with the Air Quality Management Plan?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 1 of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

1a. The existing facility is surrounded by industrial and agricultural land uses, both of which have the potential to affect ambient air quality. Existing agricultural operations adjacent to the facility, approximately 50 feet to the north and west, have the potential to generate air emissions from herbicide and pesticide application<sup>21</sup> and from fugitive dust. Industrial operations to the south (oil and gas production) and east (auto salvage yard) have the potential to generate air emissions, primarily dust. Additionally, large trucks travelling along Mission Rock Road have the potential to generate diesel and dust emissions near the facility as well as the proximity of the site to SR 126.

### LOCAL AIR QUALITY

The assessment of local air quality impacts may involve a qualitative analysis for project-generated emissions of dust, odors, carbon monoxide, and toxic air contaminants (TAC), if applicable. Please see the section below titled CUMULATIVE AIR QUALITY IMPACTS for the project's qualitative analysis on pollutants stated above. Based on information

<sup>20</sup> The threshold criteria in this Initial Study are derived from the *Ventura County Initial Study Assessment Guidelines* (April 26, 2011). For additional information on the threshold criteria (e.g., definitions of issues and technical terms, and the methodology for analyzing each impact), please see the *Ventura County Initial Study Assessment Guidelines*.

<sup>21</sup> The APCD does not regulate herbicide/pesticide applications. The application of herbicides/pesticides are within the jurisdiction of the Ventura County Agricultural Commissioner's Office.

provided in the project description, the proposed project will be subject to the rules and regulations of the Ventura County Air Pollution Control District (APCD). The proposed project consists of non-hazardous brine and stormwater, industrial, and domestic wastewater processing. These processes utilize equalization tanks, chemical treatment tanks, centrifuges/belt presses, and drying pads. The facility would also include drill mud and oil/gas liquid waste processing systems as well as processing of wastes such as tank bottoms, other oilfield waste containing oil, and other liquids with a reactive organic compound (ROC) content in excess of 5 milligrams per liter (mg/l). These processes utilize shakers, recirculation tanks, cyclones, centrifuges, "mixing areas", clarifying tanks, equalization tanks, and potassium permanganate treatment. Except for the oilfield wastes processing system, all liquids and other wastewater processing systems must have a ROC content of less than 5 mg/l. If the ROC concentration of these wastes is determined to be greater than 5 mg/l, the wastes must be processed in the tank bottoms processing system. Any liquids with a ROC content of less than 5 mg/l are exempt from an APCD Permit to Operate (PTO), pursuant to APCD Rule 23, Exemptions from Permits, and Rule 71.1, Crude Oil Production and Separation.

#### DETAILED FACILITY DESCRIPTION AND APCD PERMIT REQUIREMENTS

An Authority to Construct (ATC) application (Rule 10.A) shall be submitted to the APCD as soon as practicable and as soon as the facility design is finalized. APCD permits can be processed in parallel with other environmental permits, but the APCD ATC cannot be issued until the project has been approved by the appropriate decision-making body (APCD Rule 13.C.2), which in this case, is the Ventura County Board of Supervisors. Additionally, any existing, new or modified equipment installed at the facility subject to the APCD permit authority will be required to comply with all applicable APCD rules including, but not limited to, Rule 10 (Permits Required), Rule 26 (New Source Review-BACT), Rule 50 (Opacity), Rule 51 (Nuisance), and Rule 55 (Fugitive Dust), Rule 71.1 (Crude Oil Production and Separation) and Rule 74.10 (Components at Crude Oil and Natural Gas Production and Processing Facilities). Potential odors and toxic air contaminants from the facility must comply with Rule 51, "Nuisance". Potential dust from the facility shall comply with Rule 50, "Opacity", and Rule 55, "Fugitive Dust". Equipment not requiring APCD permits, with the potential to emit odors or dust, must also comply with Rules 50, 51, and 55.

When the applicant files applications to obtain an APCD permit, it will be subject to a New Source Review (Rule 26), imposing Best Available Control Technology (BACT), which will require the most stringent emission limitation or control technology for any emissions unit. The emission limitation or BACT must meet any of the following requirements: (1) has been achieved in practice for such emissions unit category; or, (2) is contained in any implementation plan approved by the Environmental Protection Agency (EPA) or such emissions unit category; or, (3) any other emission limitation or control technology, including, but not limited to, replacement of such emissions unit with a lower emitting emissions unit, application of control equipment or process modifications, determined by the APCD Officer to be technologically feasible for such emissions unit and cost effective as compared to the BACT cost effectiveness threshold adopted by the APCD. In addition

to other applicable PTO requirements, as a condition of the facility's applicable PTO, the applicant will be required to maintain the following records in order to comply with Rule 26: (1) monthly and rolling twelve-month barrels of oilfield wastes received and processed; (2) annual barrels of oil transferred at the recovered oil loading facility; and, (3) monitoring log for the carbon adsorption systems.

In order to comply with the BACT requirements of Rule 26.2, the proposed RI-NU facility shall be designed, constructed, and operated with the following features:

- (1) All oilfield waste water, and any recovered crude oil, shall be processed in enclosed tanks equipped with pressure / vacuum relief valves and vapor recovery systems. Recovered gas shall be controlled with a thermal oxidizer, catalytic oxidizer, or carbon adsorption system.
- (2) Drilling muds and tank bottoms shall also be stored and processed in enclosed tanks equipped with vapor recovery systems as described above. Shakers, cyclones, and centrifuges used for dewatering and solids separation shall be conducted in closed vessels without exhaust systems or equipped with an exhaust vapor recovery and control system.
- (3) The oil, water, solids separation equipment and tanks shall be equipped with a vapor recovery system. The recovered solids/inert bulking agent mixing area shall include equipment, procedures, and work practices that minimize emissions and odors. This recovered solids mixing area will not require any buildings or large enclosures to capture and control emissions/odors. An engineering analysis will be conducted to confirm BACT compliance for this process operation, along with other applicable rules and regulations, when an ATC is submitted to APCD by the applicant.

The facility's previously approved PTO (PTO No. 00171) that was valid until December 31, 2017, included some of the following same emissions sources as the proposed project:

- Vapor Control Carbon Adsorption System #1, consisting of two sets of 2 – 2,000 pound vessels in series, "Barneby Sutcliffe 2000";
- Vapor Control Carbon Adsorption System #2, consisting of one set of 2 – 2,000 pounds carbon vessels in series, "Barneby Sutcliffe 2000";

The facility's previously approved PTO also required that the carbon adsorption systems be maintained so as to have a ROC reduction efficiency of 90% or greater. In order to comply with this requirement, the ROC concentrations were measured daily at each system's vapor exhaust stack to establish the carbon breakthrough period. The ROC concentration at each exhaust stack was limited to not exceed 10 ppmv (i.e., parts per million by volume), measured as methane (Rule 26.2.A – BACT). Any of the tanks subject

to APCD's crude oil storage rules (baker tanks holding liquids having a ROC concentration of  $>5$  mg/l) were also required to be closed at all times, except during sampling or attended maintenance operations, and all their vapors were passively routed to the above-referenced carbon vessels via manifolded piping above tanks. The tanks' hatches and other inlet and outlet piping connections were required to comply with the leak requirements of Rule 74.10, "Components at Crude Oil and Natural Gas Production and Processing Facilities."

For many years the facility held a permit for oil skimming pits, recovered oil storage tanks, and an oil truck loading facility for the processing of oilfield produced waters. Free oil was removed from the produced water and the water was then treated to the City of Oxnard wastewater treatment plant requirements. As described above, the non-oilfield wastes were not subject to APCD permit requirements.

During an annual APCD compliance inspection on June 21, 2010, SCWW (previous operator) advised APCD staff that the facility had begun accepting and processing oilfield waste products such as workover fluids and drilling muds. APCD staff advised the operator that these additional activities may need to be added to the existing PTO for the facility, depending on the ROC content of the fluids. A Notice to Comply (NTC) was issued to SCWW to submit the necessary information in order to determine if the newly added operations required an APCD PTO, including the submittal of a process flow diagram of the oilfield waste process and the current list of equipment at the facility. All the required information was submitted to the APCD and on July 30, 2010, the facility was found to be in compliance and the newly added workover fluids and drilling muds processing was found to be exempt from PTO requirements due to lab analysis submitted (ROC content of the fluids being less than 5 mg/L).

During the next annual compliance inspection on April 28, 2011, the SCWW operator advised APCD staff that the facility continues to accept oilfield waste products and also began accepting tank bottom materials and produced water starting in August of 2010. The APCD inspector advised the operator that these additional activities may need to be added to the existing PTO for the facility. The APCD inspector detected ROC readings of over 2,000 ppm from the tanks processing the tank bottoms and produced water. The detection of ROC leaks greater than the ROC maximum allowable in the APCD Vapor Recovery Rule 71.1 (1,000 ppm) prompted APCD to issue a Notice of Violation (Violation No. 22711) for violation of Rules 10.A and 10.B for installing and operating the additional oilfield waste processing equipment without the required APCD Authority to Construct (Rule 10.A) and PTO (Rule 10.B). On May 26, 2011, APCD staff received an application from SCWW to permit the processing of the additional oilfield wastes that contained ROC in excess of 5 milligrams per liter of fluid. The application was submitted in response to Notice of Violation No. 22711, issued by the APCD on April 28, 2011. All of the required information was submitted to the APCD and on May 31, 2011, the facility was re-inspected by APCD staff and found to be in compliance with the updated PTO.

On March 4, 2014, the facility's PTO was revised and reissued to include all oilfield waste processing, including produced water, tank bottoms, and drilling muds with an oil content of greater than 5 milligrams per liter (subject of the Notice of Violation). This oilfield waste processing system included receiving tanks, centrifuges, cyclones and shakers for solids dewatering, oil/water separation tanks, oil storage tanks, and an oil truck loading rack. The permit also included an open mix area for the mixing of oilfield solids with bulking agents (commonly sawdust, mulch, or green waste) and a covered solids storage area for long term storage of the oilfield solid / sawdust mixtures. Solids were recycled or disposed of in compliance with solid waste regulations. In order to comply with the BACT requirements of APCD Rule 26, the oil, water, solids separation equipment and tanks shall be equipped with a vapor recovery system. The recovered solids/inert bulking agent mixing area shall include equipment, procedures, work practices that minimize emissions and odors. This recovered solids mixing area will not require any buildings or large enclosures to capture and control emissions/odors. An engineering analysis will be conducted to confirm BACT compliance for this process operation, along with other applicable rules and regulations, when an ATC is submitted by the applicant. Equipment not requiring APCD permits that have the potential to emit odors or dust, must also comply with Rules 50, 51, and 55.

As stated above, the non-oilfield waste processing equipment did not require APCD permits. This included waste such as septic tank waste, port-a-potty waste, secondary sewage, digester sludge, various brine wastes including water softener waste, landfill leachate and condensate, groundwater, and car wash clarifier waste.

The domestic waste processing system is subject to an approved CUP, but is exempt from the permitting requirements of APCD Rule 10. As mentioned previously, APCD requires permits for the processing of wastes that contain crude oil, including but not limited to, produced water, drilling muds, and tank bottoms. Although exempt from the permitting requirements of APCD Rule 10, the proposed domestic waste processing system is subject to Rule 50, "Opacity" and Rule 51, "Nuisance". A domestic waste processing system was operating at the former SCWW facility and is suspected of creating significant amounts of odors as a result of the "open pits" of domestic waste on the property. In order to mitigate and minimize potential odors from proposed domestic waste processing at the facility, the applicant has redesigned the domestic waste processing process (refer to Attachment 9 and Nuisance Odors section below). As a condition of approval, the applicant will be required to operate the facility in compliance with APCD Rule 50, "Opacity" and Rule 51, "Nuisance" for the life of the operation of the wastewater treatment facility.

### **Nuisance Odors**

There has been a total of 25 complaints related to odor at the existing facility received by the APCD since 1996. A majority of the odor complaints occurred in the years 2013, 2003, and 2001 and were specific to odors related to uncovered stockpiles of waste (open pits), which are not part of the proposed project. Out of the 25 odor complaints, only one resulted in the issuance of a Notice of Violation, dated June 19, 2003, and has since been

abated and closed. All other odor complaints were determined by the APCD to be either unsubstantiated or no violation of APCD rules and regulations. After the November 2014 fire incident and subsequent closure of the facility, potential odors were generated by materials that remained onsite. The facility's April 2015 approved EUA Permit, which authorized clean-up and recovery activities at the facility after the incident, required the operator to use Best Management Practices (BMPs) as determined by the APCD, in order to reduce any nuisance odors generated from the clean-up activities. To date, all of the required clean-up activities authorized pursuant to the EUA Permit have been successfully completed as determined by Planning and Environmental Health Divisions and no further odor impacts attributable to the 2014 incident have been identified.

To ensure that potential odors that may result from proposed operating activities at the wastewater treatment facility are minimized, the applicant shall, as a condition of approval, comply with the applicable provisions of APCD Rule 51 (Nuisance), the final approved Odor Impact Minimization Plan for the project, and any requirements of the applicable APCD PTO. Rule 51 prohibits the applicant from discharging such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. In order to comply with Rule 51, as a condition of approval, the applicant shall develop a protocol to assess sources of odors and provide nearby citizens with a means to report odor issues to the facility operator, so complaints can be quickly received, investigated and remediated.

The facility's previously approved PTO included the following requirements on the "open pits" for the processing/storage of receiving tank solids: (1) the temporary mixing area (i.e., Mixing Area #1) be used only for the mixing of the receiving tank solids with a solidification reagent (typically sawdust); (2) the materials shall not be located in the mixing area more than four hours in duration before being transferred to the "Oilfield Solids Storage Area"; and, (3) the mixing areas shall be cleaned out after each use. Upon submission of APCD applications for the proposed facility, APCD will evaluate the proposed tank solids processing system and ensure full compliance with all applicable rules and regulations to be included in the new PTO. The processing of oilfield waste water, drilling muds, and tank bottoms is expected to result in minimal odors if designed, installed, and operated in accordance with the BACT recommendations reference in previous section of this Initial Study.

The proposed RI-NU facility will process other wastes (e.g., domestic waste) that are not subject to APCD permit requirements. These wastes shall be processed in enclosed tanks and vessels as described above, as they will still be subject to Rules 50, 51, and 55. The mixing of recovered solids with bulking agents should not be conducted in a mixing area open to the atmosphere. This is particularly true for wastes with a potential for odors such as port-a-potty waste, sewage plant waste, and landfill leachate and condensate.

On January 4, 2019, the applicant revised the proposed project to include revisions for the domestic waste treatment process, which have a potential of emitting odors and ROC

vapors. The proposed system will be enclosed where domestic waste will be pumped from the trucks through a basket screen or screen box to remove larger solids and then sent to closed top mixing tanks. From these tanks the waste stream will be pumped through a centrifuge where solids and liquids will be separated. Liquids will be sent to closed tanks and eventually to the pipeline for disposal at the Oxnard wastewater plant. Solids will be dropped from the centrifuge through an enclosed chute into a closed top bin. Once full, the bin will be shipped offsite to dispose of the solids. The practice of mixing domestic waste solids with other solids in the mixing pit will no longer be conducted.

Additionally, the applicant proposes to incorporate APCD required odor minimization protocols into an Odor Impact Minimization Plan (Attachment 18), which will also be part of the final Operation and Maintenance (§) Manual for the facility, prepared by the applicant (Attachment 19). As a condition of approval, the applicant will be required to submit the final O&M Manual to the Planning Division, in consultation with APCD, who will verify the required APCD odor impact minimization protocols are included in the facility's O&M Manual prior to the issuance of a Zoning Clearance for Construction of the facility.

Signage will be required to be installed in an area visible by the general public that illustrates the APCD Complaint Line telephone number for public complaints regarding any violations of the applicable APCD rules and regulations during construction and for the duration of the operation, including dust and odor complaints, as a condition of approval of the proposed project. The applicant will be required to submit an APCD Complaint Line sign plan to the Planning Division (and in consultation with the APCD) for review and approval prior to the issuance of a Zoning Clearance for Construction. The approved sign shall be installed prior to the start of construction and shall remain onsite for the duration of the operation of the facility.

### **Fugitive Dust**

There have been a total of three complaints related to dust at the former facility received by the APCD since 1996. Out of the three dust complaints, one resulted in the issuance of a Notice of Violation, dated June 29, 2001, and has since been abated and closed. The violation was from mud track-out caused by the transfer trucks entering/exiting the facility entrance. In order to comply with APCD rules for fugitive dust control, a rumble grate and an 8-foot perimeter fence were installed, along with application of wood chips, cobble stones, and asphalt throughout the site.

Although a majority of the existing project site is and will be covered with impervious surface, some areas will remain unpaved. Due to the dust complaint history and to ensure that fugitive dust and particulate matter that may result from proposed operating activities on the site are minimized, the applicant shall, as a condition of approval, comply with the provisions of applicable APCD rules and regulations, which include but are not limited to, Rule 50 (Opacity), Rule 51 (Nuisance), and Rule 55 (Fugitive Dust), as well as any requirements of the applicable APCD PTO. These Rules require the applicant to implement the following dust control measures at the facility: installation of onsite signage

limiting traffic to 15 miles per hour or less and displaying the APCD Complaint Line Telephone phone number; utilizing watering trucks to control fugitive dust in unpaved areas onsite; and, requirement for personnel/contractors to wear respiratory protection for activities involving grading in accordance with California Division of Occupational Safety and Health (CAL OSHA) regulations. The applicant proposes to incorporate the above-referenced dust control measures into a Dust Control Plan (Attachment 20) prepared by Sespe Consulting, Inc., which will be included in the final O&M Manual for the facility. As a condition of approval, the applicant will be required to submit the final O&M Manual to the Planning Division who will verify the required APCD dust control measures are included in the facility's O&M Manual prior to the issuance of a Zoning Clearance for Construction of the facility.

#### LOCAL AIR QUALITY IMPACTS CONCLUSION

Based on the above data, with implementation of APCD's standard conditions of approval, project-specific impacts are less than significant related to local air quality.

#### REGIONAL AIR QUALITY

APCD used a statewide emissions estimating computer model, CalEEMod (California Emissions Estimator Model) Version 2016.3.2 (Attachment 21) to calculate criteria pollutant and greenhouse gas emissions from the proposed project. This emissions model quantifies direct emissions from construction and operation (including vehicle use), as well as indirect emissions, such as energy use, solid waste disposal, vegetation planting and/or removal, and water use.

Based on proposed project information provided by the applicant, air quality impacts for the proposed project were calculated to be below the 25 pounds per day threshold for reactive organic compounds (ROG) and oxides of nitrogen (NOx) at 0.06 lbs./day ROG and .07 lbs./day NOx. The calculated ROG/NOx emissions represent the increase in mobile sources from baseline (proposed increase of 80 one-way trips from 30 one-way trips max allowable in CUP). The mobile source increase includes both employee commuter vehicle trips and commercial waste delivery/outgoing disposal truck trips. Based on information contained in the applicant's project description, there will be 50 new employee commuter one-way vehicle trips per day. There is no proposed increase to the existing CUP's average daily round-trips (166.6), average trucks per day (83.3) and total weekly truck trips (500). Truck deliveries to and from the facility are still proposed to not occur on Sundays, excluding emergencies with approval of the Ventura County Planning Director.

#### **Permitted Emissions**

The project's stationary source emissions (i.e., treatment of oilfield wastes or any liquids containing more than 5 mg/L ROC), which are subject to the APCD permitting process, will undergo a separate environmental/engineering analysis which will require compliance with all current state, federal, and District rules and regulations (i.e., those described in LOCAL AIR QUALITY section above). According to the 2003 Air Quality Initial Study Assessment Guidelines, stationary source emissions are not included in the air quality

significance determination since permitted emissions are subject to new source review requirements which require a separate permit with the APCD. However, for disclosure purposes, the following is an engineering review of the former facility with best-estimates of stationary emissions for the proposed facility. As a condition of approval and under default law, the applicant will be required to obtain an ATC permit with APCD prior to the issuance of a Zoning Clearance for Construction of the proposed facility.

In 2011, the facility, under its former operator, filed an application with APCD to obtain a permit for a tank bottom collection and dewatering operation (Application 00171-181). The application was a requirement to comply with a Notice of Violation issued during a routine APCD inspection that revealed the facility had begun receiving oilfield-tank bottoms, which were also found to be emitting ROC vapors without a permit, violating APCD Rule 10 "Permits Required". The facility's APCD-permitted emissions, for the equipment listed below, were calculated as follows: The storage tanks' working losses were calculated with a requested throughput of 360,000 barrels per year (distributed between the two tanks) and the District's default emission factor of 12.23 lb. of ROC per thousand barrels for liquid with vapor pressure of less than 1.5 pounds per square inch absolute (psia). Breathing losses were calculated using the District's default emission factor of 0.43 lb. of ROC per barrel capacity for tanks less than twelve feet filled with liquid with vapor pressure of less than 1.5 psia. A 90% control efficiency was assumed for the carbon adsorption system. The EPA AP-42 default emission factor of 2.736 lb. of ROC per thousand gallons oil was used for the loading rack with an annual throughput limit of 200 barrels per year and an assumed hourly loading rate of 120 barrels per hour. The loading rack was uncontrolled. The facility's most recent permitted emissions were broken down by equipment in the table below. APCD has not received any applications for ATC for the new facility and/or current project, and therefore APCD staff cannot determine with confidence what the new permitted emissions will be. A detailed engineering analysis can only be conducted once the application is received. However, for estimation purposes, based on information provided by the facility's consultant, the total throughput is projected to be about 150,000 barrels which is about 41% less than formerly permitted. Based on the proposed oil-related waste throughput of 6,240,000 gallons per year which is equivalent to approximately 150,000 barrels (bbl) per year, the total permitted facility's emissions are estimated to be 0.32 tons of ROC per year, assuming the number of equipment on-site is the same as the most recently issued PTO with the former facility (PTO No. 00171) and using the same emission factors.

ROC- APCD App. 00171-181	Tons Per Year	Pounds Per Hour
2 – 500 bbl Receiving Tanks	0.24	0.05
1 – 500 bbl Separation Tank	0.23	0.05
1 – 120 bbl Oil Recovery Tank	0.22	0.05
1 – Oil Loading Facility	0.01	13.79
Total Emission Increase	0.70	13.94
Post-Modification Stationary Source	0.70	13.94

Pre-Modification Stationary Source	0.17	11.51
Emissions Units Removed	-0.17	-11.51
Change in Permitted Emissions	0.53	2.43

Rule 26.2.A details the BACT requirements for new, replacement, modified, or relocated emissions units. This rule has a zero threshold for BACT for ROC, NO<sub>x</sub>, PM-10, and SO<sub>x</sub>. There is no BACT requirement for CO. At the time the engineering analysis for Application 00171-181 was conducted, vapors from receiving permitted tanks were routed to a carbon adsorption system. The system was monitored for breakthrough. The exhaust had a 10 ppmv ROC concentration limit with daily monitoring requirement, which was assumed to be equivalent to 90% control efficiency. This emission limit was attainable because the monitoring was for breakthrough and the emissions were expected to be negligible. The permitted tanks were required to meet the leak rate requirements of Rule 74.10, "Components of Crude Oil and Natural Gas Production and Processing Facilities." The solids storage area was required to be covered with heavy duty plastic or sheeting. Permit condition language of Rule 74.29.B.6 was used.

Rule 26.2.B details the emission offset requirements for new, replacement, modified, or relocated emissions units. The ROC permitted emissions from this stationary source, as a result of the 2011 application, remained below the offset threshold of 5.0 tons per year. Therefore, no offsets were required at that time.

At the time the engineering analysis for Application 00171-181 was conducted, the routing of ROC tank vapors to the carbon adsorption unit complied with the control efficiency requirement of Rule 71.2, "Storage of Reactive Organic Compound Liquids", Section C.4. These tanks were post-custody transfer; therefore Rule 71.1, "Crude Oil Production and Separation", did not apply. The former permit also included requirements that the tanks be covered, and components do not leak; that spent carbon be disposed properly; and that processed solids be stored in covered bins. These conditions were applied pursuant to Rule 29, "Conditions on Permits" and Rule 51, "Nuisance" compliance. The former permit also included requirements for compliance with Rule 55, "Fugitive Dust". Storage piles and unpaved roads were potential areas that would need to comply with Rule 55.

The expected emissions from Application 00171-181 did not exceed any of the District Engineering Section Toxics-New Source Review policy thresholds and a health risk assessment was not required to demonstrate compliance with Rule 51 (the facility was only permitted for ROC-containing oilfield wastes). The addition of the tank bottoms receiving system was not expected to create a significant risk and did not require a health risk assessment. The former permit required that spent carbon be disposed properly. The permittee stated that waste liquids with high hydrogen sulfide content or high ammonia content were not accepted at the facility.

The 2011 application did not trigger the public notification requirements of Health and Safety Code section 42301.6 since the applicant stated that this source is not located

within 1,000 feet from the outer boundary of a school site. The 2011 application did not trigger the notification requirements of Rule 26.7 since the potential to emit of the new, replacement, modified, or relocated emissions units covered by this application are below the thresholds of Table B-1 of Rule 26.7. In addition, this application did not contain a request to certify emission reduction credits.

#### REGIONAL AIR QUALITY IMPACTS CONCLUSION

Based on the above data, project-specific impacts are less than significant related to regional air quality.

#### CUMULATIVE AIR QUALITY IMPACTS

Pursuant to the CEQA Guidelines section 15064(h)(1), the lead agency evaluates the potential cumulative impacts of the RI-NU project using the list approach by considering the incremental effects of the proposed project in connection with the effects of past, current, and probable future projects. The APCD identified one proposed project on the cumulative project list (Section A.13, Table B, above) which warrants review for potentially significant cumulative air quality impacts. This proposed project is a natural gas-fired electrical generating facility called the Mission Rock Energy Center (MREC).

#### **Background Regarding Proposed RI-NU and MREC Projects**

The proposed RI-NU project would be located approximately 1,730 feet away from the MREC. The MREC, if approved, would be regulated by the APCD regarding air quality issues. The proposed MREC's proximity to the proposed RI-NU project is within the District's screening distance of 1-2 miles for assessing localized non-ozone air quality impacts for odorous land uses (*District's Air Quality Assessment Guidelines, 2003 [Guidelines], Table 6-3*).

On December 31, 2015, Mission Rock Energy Center, LLC submitted an Application for Certification to the California Energy Commission (CEC) seeking authority to construct and operate the MREC. This facility would be a natural gas-fired, simple-cycle combustion turbine electrical generating facility rated at a nominal generating capacity of 275 megawatts (MW), co-located with battery units for the storage of electricity that can deliver an additional 25 MW of electricity.

The CEC is the lead agency for the MREC project under CEQA and has a certified regulatory program under CEQA. Under its certified program, (deemed equivalent to CEQA), the CEC is exempt from having to prepare an EIR. Its' certified program, however, does require environmental analysis of the project, including an analysis of alternatives and mitigation measures to minimize any significant adverse effect the project may have on the environment. This environmental review has commenced but has not been completed.

During the CEC review process, the APCD issued a Preliminary Determination of Compliance (PDOC) for the proposed MREC project which included rigorous air quality analysis, including a New Source Review pursuant to APCD Rule 26, and a Risk

Management Review of air toxic pollutants pursuant to APCD Rule 51. (*CEC Docket # 15-AFC-02, TN 221497*). Prior to APCD's issuance of a Final Determination of Compliance for the project, MREC would have to provide Emission Reduction Credits (ERCs) to comply with the emission offset requirements of APCD Rule 26.2 to offset, at a 1.3 to 1 ratio, the proposed project's oxides of nitrogen (NO<sub>x</sub>) emissions.

The CEC's processing of the Application for Certification has been suspended until July 1, 2019 (*CEC Docket # 15-AFC-02, TN 223626*). The suspension occurred at the request of the applicant which stated:

"[S]ince the Mission Rock Energy Center was proposed, California policies and programs relating to grid reliability—particularly local reliability and procurement—have been in transition. Southern California Edison recently published its Request for Offers for local reliability projects in the Moorpark Subarea (the 'RFO') which does not appear to present an opportunity for the Mission Rock Energy Center, as presently before the Commission, to participate." (*CEC Docket # 15-AFC-02, TN 222943*).

Based on the suspension of the MREC project's Application for Certification, it is uncertain whether the application will be approved by the CEC and whether the project will be constructed and operated.

#### **Cumulative Regional Air Quality Impacts- Ozone**

Both projects would create reactive organic gasses (ROG) and oxides of nitrogen (NO<sub>x</sub>) emissions, which are ozone precursor emissions (create ozone when reacted with sunlight). Assessment of cumulative regional air quality impacts is conducted by estimating ozone precursor emissions in the ambient air for a given project. The APCD determines regional significant impacts from these ozone precursors in accordance with the *Guidelines*. Because the operational emissions from both the proposed RI-NU project and proposed MREC project would be subject to APCD's stationary source permitting program, the emissions generated by both facilities are not counted towards the CEQA thresholds of significance for impacts on air quality (*Guidelines*, § 1.1). The APCD's permitting program involves a comprehensive engineering air analysis and regulatory program for pollutants for both applicable APCD rules and federal and state regulations to ensure consistency with the APCD's Air Quality Management Plan. The MREC project would have to comply as part of the APCD's regulatory program with the aforementioned NO<sub>x</sub> offset requirement. In addition, both RI-NU and MREC future APCD Permits to Operate would include monitoring and enforcement requirements to ensure all applicable air quality rules and regulations are being met. As a result, the cumulative air impact for the projects' APCD-permitted stationary source emissions will be less than significant.

## **Cumulative Local Air Quality Impacts**

### **Dust and Odors**

Local air quality impacts involve a qualitative analysis for project-generated emissions of dust, odors, carbon monoxide, and toxics, if applicable. Both RI-NU and MREC APCD permits will incorporate the requirements of APCD Rule 50 (Opacity), Rule 51 (Nuisance), and Rule 55 (Fugitive Dust). APCD's standard permit requirements addressing these issues, along with APCD's continuous monitoring and enforcement, will effectively control fugitive dust and odor-related emissions on both facilities and will therefore avoid significant cumulative impacts.

### **Carbon Monoxide**

Carbon monoxide (CO), a criteria air pollutant, will be accounted for and controlled by the APCD permitting program for both proposed projects. In addition to the projects' operational emissions (which will require APCD permits), CO emissions can be generated from mobile sources on-site such as delivery trucks and employee vehicles. Some localized areas, such as traffic-congested intersections, can have elevated levels of CO concentrations (called CO hotspots). CO hotspots are defined as locations where ambient CO concentrations exceed the State Ambient Air Quality Standards (20 ppm, 1-hr, 9 ppm, 8-hr). In Ventura County, ambient air monitoring for CO stopped in 2004, with the approval of the U.S. Environmental Protection Agency, Region 9, (California Jurisdiction) because CO background concentrations in El Rio, Simi Valley, and Ojai were much lower than the State Ambient Air Quality Standard (highest recorded CO background concentration in Ventura County was in Simi Valley at 6.2 ppm, 1-hr, 1.6 ppm, 8-hr (*Guidelines, Table 6-2*). Therefore, no CO hotspots are expected to occur in the Mission Rock Road area where both proposed projects would be located, and additional CO modeling analysis is not warranted.

### **Toxic Air Contaminants**

Toxic air contaminants (TACs) are defined as air pollutants (excluding ozone, CO, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>) that may reasonably be anticipated to cause cancer, developmental effects, reproductive disfunctions, neurological disorders, heritable gene mutations or other serious or irreversible acute or chronic health effects in humans. TACs were identified and assessed for MREC by the applicant and the APCD. In summary, the District's Risk Management Review states that "the acute and chronic hazard indices are below 0.5 and the cancer risk associated with the project is less than 10 in a million. In accordance with the VCAPCD policy 'Air Toxic Review of Permit Applications' (revised 7/10/02), the project would be approved for TACs as proposed." For more information related to MREC's TACs analysis, you may obtain an electronic copy from the CEC Docket Project No. 15-AFC-02 and the District's website at <http://vcapcd.org/Mission-Rock-Energy-Center.htm>.

In order to be granted an APCD ATC, the new proposed RI-NU facility must comply with the APCD permit policy "Air Toxics Review of Permit Applications" (Attachment 22). The APCD will review the proposed project in further detail during the permit application process to be sure that it complies with the following health risk thresholds:



Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Directly or indirectly decrease, either individually or cumulatively, the net quantity of groundwater in a groundwater basin that is overdrafted or create an overdrafted groundwater basin?		X				X		
In groundwater basins that are not overdrafted, or are not in hydrologic continuity with an overdrafted basin, result in net groundwater extraction that will individually or cumulatively cause overdrafted basin(s)?		X				X		
3) In areas where the groundwater basin and/or hydrologic unit condition is not well known or documented and there is evidence of overdraft based upon declining water levels in a well or wells, propose any net increase in groundwater extraction from that groundwater basin and/or hydrologic unit?		X				X		
4) Regardless of items 1-3 above, result in 1.0 acre-feet, or less, of net annual increase in groundwater extraction?		X				X		
5) Be consistent with the applicable General Plan Goals and Policies for Item 2A of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

2A-1, and 2A-2. The Ventura County Watershed Protection District (WPD), Groundwater Section reviewed the proposed project and determined that the project site overlies the Santa Clara River Valley Groundwater Basin, Santa Paula sub-basin (Department of Water Resources (DWR) Bulletin 118 Basin No. 4-4.04). The basin is designated as a “medium priority” basin and not currently categorized as a “critically overdrafted” basin by the DWR. Potable and process water for the wastewater treatment facility is currently provided by the City of Santa Paula, which obtains groundwater exclusively from the Santa Paula sub-basin. The basin is the only adjudicated basin in Ventura County. All wells and groundwater extractions in the Santa Paula Groundwater Basin are subject to the jurisdictional control of the Santa Paula Pumpers Association.

On January 23, 2018, the project applicant submitted historical water use records and a projected water demand for the project. On January 15, 2019, the project applicant submitted a revised landscape plan and irrigation water demand. The revised value increases annual water demand for the project by approximately 0.2 acre-feet. The

projected water demand will be 52.6 acre-feet per year (AFY) and includes the combined volumes for potable water, restroom use, waste treatment operations, fugitive dust control, irrigation/landscape water use, and loss of recharge to the basin due to the addition of impervious surfaces. Historic water use records from 2011 to 2013 average 56.6 AFY. Based upon the water demand provided by the applicant, and accepted by WPD, implementation of the project will result in an estimated water reduction of 4.0 AFY from average historical water use. The project is not expected to individually or cumulatively decrease the net quantity of water in the basin or create an overdrafted condition. Therefore, the proposed project will have a less than significant impact on groundwater quantity.

2A-3, and 2A-4. Implementation of the proposed project will result in an estimated water reduction of 4.0 AFY from historic water use. The project is not expected to individually or cumulatively increase groundwater extraction from the basin and, thus, will have a less than significant impact on groundwater quantity.

2A-5. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 2A of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>2B. Water Resources - Groundwater Quality (WPD)</b>								
<b>Will the proposed project:</b>								
1) Individually or cumulatively degrade the quality of groundwater and cause groundwater to exceed groundwater quality objectives set by the Basin Plan?		X				X		
2) Cause the quality of groundwater to fail to meet the groundwater quality objectives set by the Basin Plan?		X				X		
3) Propose the use of groundwater in any capacity and be located within two miles of the boundary of a former or current test site for rocket engines?	X				X			
4) Be consistent with the applicable General Plan Goals and Policies for Item 2B of the Initial Study Assessment Guidelines?		X				X		

## **Impact Discussion:**

2B-1. and 2B-2. The applicant requests a modification of CUP 960 to authorize, in part, additional concrete paving in the area proposed for cone bottom waste receiving tanks. This area is proposed to be bermed to prevent runoff of potential spills. The applicant will implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan (Attachment 24), approved by EHD, designed to protect groundwater quality by preventing spills and other releases of petroleum-related product storage, such as produced water, drilling mud, and tank bottoms. The existing facility will infrequently generate hazardous waste in the form of waste oil, waste antifreeze, spent carbon, etc. Any waste generated will be characterized, containerized, and hauled offsite for disposal or recycling in accordance with state and federal regulations for hazardous waste storage, handling, and disposal. All hazardous materials proposed to be stored onsite will be inventoried and stored in a proposed hazardous materials storage structure atop an existing concrete pad. As mentioned above, the applicant has designed the proposed project to incorporate physical features and protocols, i.e., berms, SPCC Plan, to avoid potential impacts to groundwater quality. EHD and the Planning Division's environmental consultant, Daniel Tormey, Ph.D., P.G., reviewed the draft SPCC Plan and find that it contains the necessary operating procedures, control measures and countermeasures to contain, clean up, and mitigate the effects of a spill considered under the plan. As a condition of approval, the Permittee will be required to submit the final SPCC Plan to the Planning Division, in consultation with EHD, for review and approval prior to the issuance of a Zoning Clearance for Use Inauguration of the facility.

The proposed project does not include a request to authorize the onsite treatment of hazardous wastes. To ensure that the applicant is prohibited from treating hazardous wastes onsite, EHD has recommended a condition of approval that requires that the applicant only be allowed to accept and treat non-hazardous wastes and remain in compliance with California Code of Regulations (CCR), Title 22 (i.e., handling of hazardous wastes). In order to ensure the safe storage, handling, and disposal of potentially hazardous materials, EHD recommends a condition of approval that requires the applicant to submit a Hazardous Materials Business Plan (HMBP) to report the storage of all hazardous materials above reporting thresholds (i.e., 200 cubic feet gas, 55 gallons liquid, and 500 pounds solid). The applicant will be required to electronically report HMBP information annually on or before March 1<sup>st</sup> (or more often depending on any business plan changes) to the California Environmental Reporting System (CERS) in accordance with the California Health and Safety Code (HSC), Chapter 6.11, section 25508. The HMBP must include the following information:

- Detailed information on the inventory of hazardous materials at the facility;
- Emergency response plans and procedures in the event of a reportable release or threatened release of a hazardous material;
- Training for all new employees and annual training, including refresher courses, for all employees in safety procedures in the event of a release or threatened release of a hazardous material; and,

- A site map that contains loading areas, internal roads, adjacent streets, storm and sewer drains, access and exit points, emergency shut-offs, evacuation staging areas, hazardous material handling and storage areas, and emergency response equipment.

The HMBP is necessary in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of hazardous materials into the workplace and environment.

The applicant also proposes to continue to use a 12-mile underground sewer pipeline connected to the City of Oxnard's Wastewater Treatment Plant for disposal of domestic and non-hazardous wastes. In order to document this project component, the applicant will be required, as condition of approval, to obtain a City of Oxnard Industrial Wastewater Discharge permit to continue the use of the existing sewer line to dispose of domestic and non-hazardous wastes into the City of Oxnard's Wastewater Treatment Plant and provide a Sewer Will-Serve letter prior to the issuance of a Zoning Clearance for Construction of the facility.

With the implementation of these conditions of approval and the applicant's project design, the proposed project will have a less than significant project-specific impact, and will not make a cumulatively considerable contribution to significant cumulative impacts, related to groundwater quality.

2B-3. The proposed project site is not located within two miles of the boundary of a former or current test site for rocket engines and will not have an impact on groundwater quality.

2B-4. The proposed project is consistent with the applicable General Plan Goals, Policies, and Programs for Item 2B of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>2C. Water Resources - Surface Water Quantity (WPD)</b>								
<b>Will the proposed project:</b>								
1) Increase surface water consumptive use (demand), either individually or cumulatively, in a fully appropriated stream reach as designated by SWRCB or where unappropriated surface water is unavailable?	X				X			

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2) Increase surface water consumptive use (demand) including but not limited to diversion or dewatering downstream reaches, either individually or cumulatively, resulting in an adverse impact to one or more of the beneficial uses listed in the Basin Plan?	X				X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 2C of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

2C-1. and 2C-2. Water supply for the proposed project is provided by the City of Santa Paula. The proposed project does not rely on surface water supplies in a fully appropriated stream reach as designated by the Surface Water Resources Control Board (SWRCB) or where unappropriated surface water is unavailable. Thus, the proposed project will have no impacts on surface water quantity.

2C-3. The proposed project is consistent with the applicable General Plan Goals, Policies, and Programs for Item 2C of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>2D. Water Resources - Surface Water Quality (WPD)</b>								
<b>Will the proposed project:</b>								
1) Individually or cumulatively degrade the quality of surface water causing it to exceed water quality objectives as contained in Chapter 3 of the three Basin Plans?		X				X		
2) Directly or indirectly cause storm water quality to exceed water quality objectives or standards in the applicable MS4 Permit or any other NPDES Permits?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 2D of the Initial Study Assessment Guidelines?	X				X			

## **Impact Discussion:**

2D-1. The WPD, County Stormwater Program Section, reviewed the proposed project and determined that the project site is located directly adjacent to Cummings Road Drain, which discharges into the Santa Clara River Reach 3 (Freeman Diversion to A Street, Fillmore, CA) as defined in the Water Quality Control Plan: Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, revised October 28, 2011. The segment of the Santa Clara River downstream of the project site, including Santa Clara Estuary, Reach 1 (Santa Clara River Estuary to Highway 1 Bridge), and Reach 3 (Freeman Diversion to Street A in Fillmore, CA), are included on the Clean Water Act section 303(d) list of impaired waterbodies due to exceedances of water quality objectives for indicator bacteria, toxicity, pesticides, total dissolved solids, chloride, selenium, and trash. Runoff from urbanized areas including industrial facilities is documented and known to include bacteria, nitrogen compounds from fertilizer application, pesticides from landscape pest controls, as well as trash and sediment from land disturbance and erosion.

Urban runoff pollution from the proposed project's existing unpermitted approximately 26,000 square feet of impervious surface and additional proposed 4,800 square feet of new impervious surface, has the potential to contribute to exceedances of water quality objectives in the downstream impaired segments of Santa Clara River Estuary and Santa Clara River Reaches 1 and 3. Any potential impact to surface water quality as a result of increased impervious surface area will be addressed by required compliance with the Part 4.E., "Planning and Land Development Program," and Part 4.F. "Development Construction Program" of the Ventura Countywide National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit No. CAS004002. In addition, operations of the wastewater treatment facility are required to maintain compliance with NPDES General Industrial Stormwater Permit No. CAS000001 (refer to 2D-2 below for condition requirements).

With the implementation of the foregoing conditions of approval, the proposed project will not individually or cumulatively degrade the quality of surface water causing it to exceed water quality objectives as contained in Chapter 3 of the Los Angeles Basin Plan, as applicable for this area. Impacts on surface water quality are less than significant because the proposed project is not expected to result in a violation of any surface water quality standards as defined in the Los Angeles Basin Plan.

2D-2. The proposed project site is located at 815 Mission Rock Road in the unincorporated urban area of Ventura County. The proposed 4,800-sq. ft. of new impervious surface in addition to existing, but unpermitted approximately 26,000-sq. ft. of impervious surface at the project site are subject to requirements of the Part 4.E., "Planning and Land Development Program" and Part 4.F., "Development Construction Program" of the Ventura Countywide NPDES Municipal Stormwater Permit No. CAS004002.



Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Be located on or immediately adjacent to land zoned Mineral Resource Protection (MRP) overlay zone, or adjacent to a principal access road for a site that is the subject of an existing aggregate Conditional Use Permit (CUP), and have the potential to hamper or preclude extraction of or access to the aggregate resources?	X				X			
2) Have a cumulative impact on aggregate resources if, when considered with other pending and recently approved projects in the area, the project hampers or precludes extraction or access to identified resources?					X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 3A of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

3A-1. and 3A-2. The proposed project is located within a “MRZ-2” area (Mineral Resource Area), which is an area in the unincorporated county where significant mineral deposits are present or where it is judged that a high likelihood for their presence exists, as mapped by the State Division of Mines and Geology and depicted on the Planning Division’s Geographical Information Systems (GIS) database. Mineral resources consist of sand, gravel, and crushed rock used in the construction industry. Although the proposed project is located within the “MRZ-2” area, no active mining is occurring on or directly adjacent to the project site. According to the Planning Division’s GIS database, there are two inactive/expired mining CUPs – CUP 1812 and CUP 245 – within approximately 1,000 feet from the project site. The proposed project is not located adjacent to a road used as a principal means of access to an existing active CUP for aggregate extraction and therefore, the proposed project will have no impact on access to extract aggregate resources. Thus, the proposed project will have no project-specific impact, and will not make a cumulatively considerable contribution to significant cumulative impacts, related to the extraction of aggregate resources.

3A-3. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 3A of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>3B. Mineral Resources – Petroleum (PIng.)</b>								
<b>Will the proposed project:</b>								
1) Be located on or immediately adjacent to any known petroleum resource area, or adjacent to a principal access road for a site that is the subject of an existing petroleum CUP, and have the potential to hamper or preclude access to petroleum resources?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 3B of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**3B-1.** The proposed project is located within a Petroleum Resources area as indicated on the Planning Division's GIS database and as mapped by the State Division of Oil and Gas. Petroleum resources consists of oil and gas deposits. The proposed project is located within the Saticoy Oil Field within the permit boundary of an active CUP for extraction of gas and oil (CUP 308). However, there are no actively producing oil wells within the proposed project's operational boundary and, thus, the proposed project will not hamper or preclude access to the extraction of these petroleum resources or use of existing facilities associated with CUP 308 as described below.

The Division of Oil, Gas, and Geothermal Resources (DOGGR) reviewed the project site and determined that there are two wells located on the project site: "S.P.S." 17 (API 11102543) and "S.P.S." 29 (API 11102554). Oil Well "S.P.S." 17 is no longer used as an oil well, but was converted to a water source well in 2013, as confirmed by the DOGGR. Since the water well is located within the project site, DOGGR requires suitable egress and ingress distances from the activities of the proposed project. DOGGR requires a 100-foot by 80-foot setback surrounding the wellhead. Oil Well "S.P.S." 29 is an abandoned oil well and, therefore, the setback requirements are minimal. The proposed project does not include materials or equipment located directly around or within the area of "S.P.S." 29. The applicant has incorporated the DOGGR's wellhead setback requirements into the design of the proposed project. Thus, the proposed project will have no project-specific impact, and will not make a cumulatively considerable contribution to significant cumulative impacts, related to the extraction of oil resources.

**3B-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 3B of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>4. Biological Resources</b>								
<b>4A. Species</b>								
<b>Will the proposed project, directly or indirectly:</b>								
1) Impact one or more plant species by reducing the species' population, reducing the species' habitat, fragmenting its habitat, or restricting its reproductive capacity?	X				X			
2) Impact one or more animal species by reducing the species' population, reducing the species' habitat, fragmenting its habitat, or restricting its reproductive capacity?	X				X			

#### Impact Discussion:

4A-1 and 4A-2. The subject property consists entirely of developed industrial facilities and contains no areas capable of supporting rare plants. As a result, no direct, indirect, or cumulatively considerable impacts to special status plants are anticipated. Due to a lack of native vegetation and trees onsite, and a lack of vegetation capable of serving as habitat for wildlife, no special status wildlife are anticipated to occur on the subject property, nor within the vicinity of the subject property. As a result, no impacts to special status wildlife are anticipated, and no cumulatively considerable contribution to a significant impact is anticipated.

**Mitigation/Residual Impact(s):** No required mitigation. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>4B. Ecological Communities - Sensitive Plant Communities</b>								
<b>Will the proposed project:</b>								
1) Temporarily or permanently remove sensitive plant communities through construction, grading, clearing, or other activities?	X				X			

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2) Result in indirect impacts from project operation at levels that will degrade the health of a sensitive plant community?	X				X			

### Impact Discussion:

4B-1. and 4B-2. No special status or locally important plant communities occur on, or in the vicinity of, the subject property. The subject property is located in an industrial area and is adjacent to industrial and agricultural lands uses. Special status plant communities associated with the Santa Clara River occurs over 1,000 feet away from the site. Because of a lack of special status plant communities and the considerable distance between the site and off-site plant communities, no impacts are anticipated to special status plant communities. Additionally, the project will have no contribution to a cumulatively considerable impact.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>4C. Ecological Communities - Waters and Wetlands</b>								
<b>Will the proposed project:</b>								
1) Cause any of the following activities within waters or wetlands: removal of vegetation; grading; obstruction or diversion of water flow; change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; or any disturbance of the substratum?		X				X		
2) Result in disruptions to wetland or riparian plant communities that will isolate or substantially interrupt contiguous habitats, block seed dispersal routes, or increase vulnerability of wetland species to exotic weed invasion or local extirpation?		X				X		
3) Interfere with ongoing maintenance of hydrological conditions in a water or wetland?		X				X		

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4) Provide an adequate buffer for protecting the functions and values of existing waters or wetlands?		X				X		

### Impact Discussion:

4C-1, 4C-2, 4C-3, and 4C-4 The subject property is located directly adjacent to the Cummings Road Drain, a Red Line Channel managed by the Ventura County Watershed Protection District for flood control purposes. The drain consists of an earthen channel with bare banks and scattered non-native vegetation or is devoid of vegetation altogether. The channel appears to support ephemeral flow consisting of agricultural runoff and stormwater sheet flow and some vegetation within the channel bottom. The Cummings Road Drain continues to run south and west away from the subject property for approximately 4,500 linear feet before it meets the Santa Clara River. The proposed modification to the project includes the addition of a 1.67-acre area to the south that is zoned industrial and previously served as an automobile storage and wrecking yard. The proposed project will result in an increase in impervious surface area of 4,852 square feet in an area proposed for cone bottom waste receiving tanks; however, this area will be bermed to prevent runoff and potential spills. In addition, a portion of the perimeter of the site that previously consisted of pervious area will be converted to landscaping for screening.

Conditions for the existing CUP to operate the wastewater facility allow for a non-brine discharge stream through a pipe outfall at the northwest corner of the facility to discharge stormwater into the Cummings Road Drain. However, the drain outfall was never constructed, and the proposed project modification includes removal of this component from the project. Therefore, no direct outlet to Cummings Road Drain will be constructed as part of the proposed project. The applicant will be required to continue coverage of the facility under the NPDES General Permit (No. CAS000001), Waste Discharge Requirements for Discharges of Stormwater Runoff for Industrial Activities as required by the State Water Resources Control Board. NPDES Permit compliance ensures stormwater discharge does not significantly degrade water quality in the Cummings Road Drain or in the Santa Clara River by requiring the applicant to prepare a Post-Construction Stormwater Management Plan (PCSMP) which meets applicability criteria for significant redevelopment and a Maintenance Plan, Maintenance Covenant, and an annual verification of ongoing maintenance provisions for proposed PCSMP controls. The facility will also be required to be in compliance with the NPDES Municipal Permit. Stormwater does not flow directly into Cummings Road Drain, but instead pools onsite and evaporates. During significant storm events, stormwater exits the site at the southeast driveway and eventually reaches the Cummings Road Drain by sheet flow along Shell Road.



Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>Will the proposed project:</b>								
1) Remove habitat within a wildlife movement corridor?	X				X			
2) Isolate habitat?		X				X		
3) Construct or create barriers that impede fish and/or wildlife movement, migration or long-term connectivity or interfere with wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction?		X				X		
4) Intimidate fish or wildlife via the introduction of noise, light, development or increased human presence?		X				X		

### Impact Discussion:

**4E-1.** The subject property is fully developed and does not support wildlife habitat. In addition, the property is not located within the mapped landscape-scale habitat linkages mapped by the South Coast Missing Linkages. The proposed project will not result in the removal of habitat within a wildlife movement corridor and no impacts will occur.

**4E-2 through E-4.** No additional fencing on the property is proposed that may isolate wildlife from moving among habitats near the site. Proposed facility lighting includes light fixtures on 25-foot high poles at the perimeter and internal lighting affixed to structures within the site or on 25-foot high poles. A Photometric Plan was submitted that demonstrates light intensity values across the site that will result from proposed lighting (Refer to Attachment 13). Substantial light trespass will not occur, and light fixtures are fully cut-off and directed downward, which will prevent a high-intensity bulb to be visible for long distances. The Santa Clara River, the nearest mapped wildlife corridor, is approximately 1,000 feet from the subject property, the proposed lighting will not result in substantial light trespass, nor substantially increase the amount of ambient light near the Santa Clara River. Expansion of the facility by 1.67 acres and the addition and reconfiguration of structures and equipment is not anticipated to substantially increase noise levels beyond baseline levels. As a result, direct, indirect, and cumulatively considerable impacts to habitat connectivity and wildlife movement are less than significant.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4F. Will the proposed project be consistent with the applicable General Plan Goals and Policies for Item 4 of the Initial Study Assessment Guidelines?	X				X			

**Impact Discussion:**

4F. The proposed project is consistent with the General Plan Goals and Policies for Item 4 of the Ventura County Initial Study Assessment Guidelines and does not occur within an area subject to any Ventura County Area Plan policies. The Ventura County General Plan Biological Resources Policy 1.5.2-4 requires a setback of 100 feet from significant wetland habitats. Existing development already occurs directly adjacent to Cummings Road Drain, and the proposed project modification will not reduce the setback from Cummings Road Drain. As a result, the proposed project is consistent with this policy.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>5A. Agricultural Resources – Soils (Plng.)</b>								
<b>Will the proposed project:</b>								
1) Result in the direct and/or indirect loss of soils designated Prime, Statewide Importance, Unique or Local Importance, beyond the threshold amounts set forth in Section 5a.C of the Initial Study Assessment Guidelines?	X				X			
2) Involve a General Plan amendment that will result in the loss of agricultural soils?	X				X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 5A of the Initial Study Assessment Guidelines?	X				X			

**Impact Discussion:**

5A-1. and 5A-2. According to Planning Division GIS, State Important Farmland Inventory Maps, the proposed project has a soil designation of “Urban and Built-up Land”. The proposed project is not located on, or include the request to remove, soil designated as

Prime, Statewide Importance, Unique or Local. All existing and proposed operations will occur within the permit boundary and will not affect or remove any adjacent agricultural soils. Additionally, the proposed project does not entail a General Plan amendment that will result in the loss of agricultural soils. Thus, the proposed project will have no project-specific impact and will not make a cumulatively considerable contribution to significant cumulative impacts related to the loss of agricultural soils.

**5A-3.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 5A of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>5B. Agricultural Resources - Land Use Incompatibility (AG.)</b>								
<b>Will the proposed project:</b>								
1) If not defined as Agriculture or Agricultural Operations in the zoning ordinances, be closer than the threshold distances set forth in Section 5b.C of the Initial Study Assessment Guidelines?			X			X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 5b of the Initial Study Assessment Guidelines?			X			X		

### Impact Discussion:

**5B-1.** According to the Ventura County Initial Study Assessment Guidelines, any land use or project that is not Agriculture or Agricultural Operations as defined in the Zoning Ordinance will be evaluated for effects on adjacent classified farmland. Analysis is based on the distance between new non-agricultural structures and uses and any common lot boundary line adjacent to off-site classified farmland.

The proposed project consists of the continued operation and modification of a wastewater treatment plant that has been located closer than 300 feet from classified farmland since the 1950s. The project site is bordered on the north and west by agricultural operations and on the east and south by industrial uses.

The proposed project boundary is closer than the threshold distances set forth in Section 5b.C of the Ventura County Initial Study Assessment Guidelines for non-agricultural uses adjacent to agriculture. The Ventura County Agricultural Commissioner's Office determined that, because the non-agricultural use is closer than the established threshold of 300 feet from an agricultural operation, the proposed project could have a potentially

significant impact on the adjacent agricultural operations. The applicant proposes to plant an 18-foot wide tree row and landscaping buffer (i.e., vegetative screening) along the northern and western boundaries of the project site adjacent to agricultural uses to comply with the Ventura County Agricultural/Urban Buffer Policy. This tree row will provide additional separation between the two uses and assist in minimizing fugitive dust from traveling onto or off the project site. In order to ensure that the accepted details of this plan are completed, a mitigation measure will be incorporated into the permit that identifies the Agricultural/Urban Buffer Policy standards. The tree row shall meet the minimum standards for vegetative screening as specified in Agricultural/Urban Buffer Policy: two staggered rows of trees and shrubs characterized by evergreen foliage that extends from the base of the plant to the crown. The trees and shrubs shall be vigorous, drought tolerant and at least six feet in height at the time of installation. Plants should have 50% to 70% porosity. The plant height should vary in order to capture pesticide drift within four feet of ground applications. A mature height of 15 feet or more is required for trees. To ensure adequate coverage, two staggered rows should be located five feet apart, 10 feet on center. The recommended plants include Toyon (*Heteromeles arbutifolia*), Sugarbush (*Rhus ovata*), Laurel Sumac (*Malosma laurina*) and Italian Cypress (*Cupressus sempervirens*). (Refer to Attachment 12). As a mitigation measure, the Permittee will be required to submit a final landscape plan to the Planning Division to be reviewed and approved in consultation with the Agricultural Commissioner's Officer prior to the issuance of a Zoning Clearance for Construction of the facility. The Permittee will be required to maintain the tree row/landscape buffer for as long as the wastewater treatment facility is in operation so that any potential adverse impacts on agricultural operations located within 300 feet of the facility are minimized.

The Agricultural Commissioner's Office also recommends a condition of approval to ensure that the proposed project has a less than significant impact on adjacent, offsite agricultural operations. The condition of approval would require the Permittee to provide a written schedule of days and hours of operation to landowners and operators in agricultural production located within 300 feet of the project site. With this information, the agricultural operators may plan chemical applications, use of heavy-duty farming equipment which may cause fugitive dust, and other farming actions during times of the day with the least conflict to both the proposed wastewater treatment facility and the off-site agricultural operation.

On June 13, 2018, the proposed project was presented to the Ventura County Agricultural Policy Advisory Committee (APAC). In summary, the APAC indicated that it recognizes the need for a wastewater treatment facility in Ventura County and encourages the reinstatement of the permit with proper regulatory oversight and a reputable operator. In this regard, to help avoid the occurrence of another incident similar to the 2014 chemical explosion at the facility which negatively impacted agricultural resources, the Agricultural Commissioner's Office suggests that the applicant be prohibited from employing any of the supervisors or managers from the previous operations, Santa Clara Waste Water Company and Green Compass. The Planning Division will take the Agricultural Commissioner's Office's suggestion into consideration.

Based on the above information, potentially significant adverse impacts have been identified but with the implementation of the above-stated mitigation measure and the Agricultural Commissioner's Office's recommended conditions of approval, both project-specific and cumulative impacts related to land use incompatibility with agricultural uses are less than significant.

**5B-2.** The proposed project is consistent with the General Plan Goals and Policies of Item 5B of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** Potentially significant adverse impacts on agricultural operations have been identified but with the implementation of the following mitigation measure, impacts on adjacent agricultural operations will be less than significant.

*Agricultural Resources – Land Use Incompatibility Mitigation Measure (M-1)*

**Purpose:** To mitigate potential incompatibility between the wastewater treatment facility and the adjacent off-site important farmland when the distance setback or buffer, as set forth in the Ventura County Initial Study Assessment Guidelines, topic 5.b. cannot be met.

**Requirement:** The Permittee shall retain a landscape architect to prepare a landscape plan that complies with the requirements of this condition, the "Ventura County Landscape Design Criteria" (1992), the state Model Water Efficiency Landscape Ordinance (MWELO), and the Ventura County Agricultural/Urban Buffer Policy.

**Landscape Objectives:** The Permittee must install and maintain a landscape buffer and vegetative screening that serves the following functions:

- a. Provides additional separation between the wastewater treatment facility and the agricultural operations;
- b. Assists in minimizing fugitive dust from traveling onto or off the project site; and,
- c. Assists in minimizing fugitive pesticide spray from traveling onto the project site from the adjacent agricultural fields.

**Landscape Design:** The Permittee shall install a tree row along the northern and western boundaries of the project site which are adjacent to agricultural operations, that meets the minimum standards for vegetative screening as specified in the Agricultural Commissioner's Agricultural/Urban Buffer Policy standards. The tree row shall consist of:

- a. Two staggered rows of trees and shrubs characterized by evergreen foliage that extends from the base of the plant to the crown;
- b. Trees and shrubs that are vigorous, drought tolerant and at least six feet in height at the time of installation;

- c. Plants that have 50% to 70% porosity;
- d. Plant height that varies to capture pesticide drift within four feet of ground applications. A mature height of 15 feet or more is required for trees;
- e. Adequate coverage, including two staggered rows located five feet apart, 10 feet on center; and,
- f. The following recommended plants: Toyon (*Heteromeles arbutifolia*), Sugarbush (*Rhus ovata*), Laurel Sumac (*Malosma laurina*) and Italian Cypress (*Cupressus sempervirens*).

**Documentation:** The Permittee shall submit three sets of a landscape plan to the Planning Division for review and approval, in consultation with the Agricultural Commissioner's Office. A California registered landscape architect (or other qualified individual as approved by the Planning Director) shall prepare the landscape plan, demonstrating compliance with the requirements set forth in this condition (above), the Ventura County Landscape Design Criteria, and the Agricultural Commissioner's Agricultural/Urban Buffer Policy. The landscape architect responsible for the work shall stamp the plan. After landscape installation, the Permittee shall submit to Planning Division staff a statement from the project landscape architect that the Permittee installed all landscaping as shown on the approved landscape plan. Prior to installation of the landscaping, the Permittee must obtain a Building Permit for the proposed landscaping. Any changes to the landscape plans that affect the character or quantity of the plant material or irrigation system design shall be approved by the Planning Director.

**Timing:** The Permittee shall submit the landscape plan to the Planning Division for review and approval, in consultation with the Agricultural Commissioner's Office, prior to issuance of a Zoning Clearance for Construction. After the issuance of a Zoning Clearance, the Permittee shall obtain a Building Permit for the proposed landscaping. All landscaping shall be installed prior to the issuance of a Zoning Clearance for Use Inauguration and a Certificate of Occupancy.

**Monitoring and Reporting:** Landscaping approval/installation verification, monitoring activities, and enforcement activities shall occur according to the procedures set forth in the "Ventura County Landscape Design Criteria" (§§ F and G). The Planning Division maintains the landscape plans and statement by the landscape architect in the Project file. The Planning Division and the Agricultural Commissioner's Office have the authority to conduct site inspections to ensure that the Permittee installs and maintains the landscaping in accordance with the approved landscape plan consistent with the requirements of the Ventura County Landscape Design Criteria, MWELO, and the Agricultural/Urban Buffer Policy consistent with the requirements of § 8114-3 of the Ventura County Non-Coastal Zoning Ordinance.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>6. Scenic Resources (Plng.)</b>								
<b>Will the proposed project:</b>								
a) Be located within an area that has a scenic resource that is visible from a public viewing location, and physically alter the scenic resource either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable future projects?		X				X		
b) Be located within an area that has a scenic resource that is visible from a public viewing location, and substantially obstruct, degrade, or obscure the scenic vista, either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable future projects?		X				X		
c) Be consistent with the applicable General Plan Goals and Policies for Item 6 of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

6a. and 6b. The proposed project is not located within a mapped Scenic Resource Protection Overlay zone but is within the vicinity of an Eligible County Scenic Highway (not officially designated), SR 126. SR 126 is located approximately 0.3 miles north of the project site. The modified CUP would authorize the installation of 26,862 sq. ft. (9.8 percent of the CUP area) of landscaping, which will include 128 new trees and 183 new shrubs and low-growing plants as illustrated on the applicant's proposed Landscape and Planting Plan. (Refer to Attachment 12.). Landscaping will be located within the new parking lot area, adjacent to the proposed office building, and along the perimeter of the project site. Pursuant to a condition of approval, all proposed landscaping will be installed prior to the issuance of a Zoning Clearance for Use Inauguration of the facility. With the installation of landscape screening along the northern, eastern and western property boundaries as part of the proposed project, public views from SR 126 will not be altered or obscured. The installation of landscaping will improve the visual character of the area.

Thus, the proposed project will have a less than significant project-specific impact and will not make a cumulatively considerable contribution to significant cumulative impacts, related to scenic resources.

6c. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 6 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>7. Paleontological Resources</b>								
<b>Will the proposed project:</b>								
a) For the area of the property that is disturbed by or during the construction of the proposed project, result in a direct or indirect impact to areas of paleontological significance?		X				X		
b) Contribute to the progressive loss of exposed rock in Ventura County that can be studied and prospected for fossil remains?		X				X		
c) Be consistent with the applicable General Plan Goals and Policies for Item 7 of the Initial Study Assessment Guidelines?		X				X		

**Impact Discussion:**

7a. and 7.b. Based on Planning Division GIS Data Layer Maps, the project site is located in an area with “undetermined” paleontological significance and, therefore, unlikely to contain any significant paleontological resources. Minor ground disturbance activities, i.e., installation of impervious surface and landscaping, will occur within an area that has previously been graded for the construction of the existing facility. Undisturbed paleontological materials are not anticipated to be found. In any case, future grading and construction activities will be subject to the Planning Division’s standard condition of approval regarding the discovery of previously unknown subsurface resources. With the implementation this condition, any potential impacts to resources discovered during ground disturbance activities will be avoided.

Thus, the proposed project will have a less than significant project-specific impact, and will not make a cumulatively considerable contribution to significant cumulative impacts, related to paleontological resources.

7c. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 7 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts will be less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>8A. Cultural Resources – Archaeological</b>								
<b>Will the proposed project:</b>								
1) Demolish or materially alter in an adverse manner those physical characteristics that account for the inclusion of the resource in a local register of historical resources pursuant to Section 5020.1(k) requirements of Section 5024.1(g) of the Public Resources Code?		X				X		
2) Demolish or materially alter in an adverse manner those physical characteristics of an archaeological resource that convey its archaeological significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for the purposes of CEQA?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 8A of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

8A-1. and 8A-2. The project site has been previously graded for construction of the existing facility. According to Planning Division GIS Data Layer Maps, no known archeological resources exist on the site, nor is the project site located within a sensitive or very sensitive archeological resource area. Although it is unlikely that the proposed minor ground disturbance activities, i.e., installation of impervious surface and landscaping, will reveal the presence of subsurface archeological resources, there is a potential that these resources exist on the site. Therefore, any future grading and construction activities will be subject to the Planning Division's standard condition of approval regarding the discovery of previously unknown subsurface archeological resources. With the implementation of this condition, any potential impacts on resources discovered during ground disturbance activities will be avoided. Thus, the proposed project will have a less than significant project-specific impact, and will not make a cumulatively considerable contribution to significant cumulative impacts, related to archeological resources.

Pursuant to Public Resources Code (PRC) section 21080.3.1 et seq., a formal notification of determination of project completeness and notification of consultation opportunity was provided to the Barbareno – Ventureno Mission Indians on September 21, 2017. To date,

the Barbareno – Ventureno Mission Indians have not provided a response to the Planning Division in regard to this project.

**8A-3.** The proposed project is consistent with the General Plan Goals and Policies for Item 8A of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>8B. Cultural Resources – Historic (Plng.)</b>								
<b>Will the proposed project:</b>								
1) Demolish or materially alter in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources?		X				X		
2) Demolish or materially alter in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code?		X				X		
3) Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA?		X				X		
4) Demolish, relocate, or alter an historical resource such that the significance of the historical resource will be impaired [Public Resources Code, Sec. 5020(q)]?		X				X		

### Impact Discussion:

**8B-1. through 8B-3.** The Planning Division Cultural Heritage Staff Planner reviewed the proposed project and determined that the wastewater treatment facility may be eligible for County Landmark designation for its association with post World War II development and suburbanization of southern California (Criterion 2 – Events, Secretary of Interior

Standards). The facility had been in operation as a wastewater treatment plant, and owned by the same operator, since 1960, prior to the suspension of the CUP in November 2014. The facility retains its integrity of workmanship, setting, location, feeling, and design. Since the proposed project includes the request to continue the existing wastewater treatment facility for an additional 20-year period, and does not involve the demolition, relocation or change of use of the existing facility, project impacts on potential historic resources will be less than significant.

Thus, the proposed project will have a less than significant project-specific impact, and will not make a cumulatively considerable contribution to significant cumulative impacts, related to potential historic resources.

**8B-4.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 8B of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>9. Coastal Beaches and Sand Dunes</b>								
<b>Will the proposed project:</b>								
a) Cause a direct or indirect adverse physical change to a coastal beach or sand dune, which is inconsistent with any of the coastal beaches and coastal sand dunes policies of the California Coastal Act, corresponding Coastal Act regulations, Ventura County Coastal Area Plan, or the Ventura County General Plan Goals, Policies and Programs?	X				X			
b) When considered together with one or more recently approved, current, and reasonably foreseeable probable future projects, result in a direct or indirect, adverse physical change to a coastal beach or sand dune?					X			
c) Be consistent with the applicable General Plan Goals and Policies for Item 9 of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**9a. and 9b.** The project site is located many miles from the coast and does not have the potential to affect coastal resources such as beaches or sand dunes. Thus, there are no impacts on Coastal Beaches and Sand Dunes.

**Mitigation/Residual Impact(s):** No mitigation is required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>Will the proposed project:</b>								
a) Be built in accordance with all applicable requirements of the Ventura County Building Code?		X						
b) Be consistent with the applicable General Plan Goals and Policies for Item 11 of the Initial Study Assessment Guidelines?					X			

### Impact Discussion:

11a. The project site will be subject to moderate to strong ground shaking from seismic events on local and regional fault systems. The County of Ventura Building Code adopted from the California Building Code, dated 2016, Chapter 16, § 1613 requires structures to be designed to withstand this ground shaking. The Report of Geotechnical Investigation, prepared by Arroyo Geotechnical, dated June 26, 2007, provides the structural seismic design criteria for the proposed project and will be required to be updated to the Building Code and seismic design criteria in effect at the time of building permit issuance. The requirements of the Building Code will reduce the effects of ground shaking to less than significant.

The hazards from ground shaking will affect each project individually; and no cumulative ground shaking hazard will occur as a result of other approved, proposed, or probable projects.

11b. The proposed project is consistent with applicable General Plan Goals and Policies for Item 11 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>12. Liquefaction Hazards (PWA)</b>								
<b>Will the proposed project:</b>								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving liquefaction because it is located within a Seismic Hazards Zone?		X						

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
b) Be consistent with the applicable General Plan Goals and Policies for Item 12 of the Initial Study Assessment Guidelines?		X			X			

### Impact Discussion:

12a. The project site is located within a potential liquefaction hazard area. The Geotechnical Engineering Report, prepared by Arroyo Geotechnical, dated June 26, 2007, included a site-specific liquefaction analysis and evaluation. The results of this report (Page 7) indicate that continuous liquefied layers are not anticipated to exist on the site. In this regard, the potential hazard from liquefaction is considered to be less than significant.

The hazards from liquefaction will affect each project individually; and no cumulative liquefaction hazard will occur as a result of other approved, proposed, or probable projects.

12b. The proposed project is consistent with the General Plan Goals and Policies for Item 12 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. The impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>13. Seiche and Tsunami Hazards (PWA)</b>								
<b>Will the proposed project:</b>								
a) Be located within about 10 to 20 feet of vertical elevation from an enclosed body of water such as a lake or reservoir?	X							
b) Be located in a mapped area of tsunami hazard as shown on the County General Plan maps?	X							
c) Be consistent with the applicable General Plan Goals and Policies for Item 13 of the Initial Study Assessment Guidelines?	X				X			

**Impact Discussion:**

13a. and 13b. The project site is not located adjacent to a closed or restricted body of water based on aerial imagery review (photos dated November 4, 2016, aerial imagery is under the copyrights of Pictometry, Source: Pictometry©, November 4, 2016) and is not subject to seiche hazard.

The hazards from seiche and tsunami will affect each project individually; and no cumulative seiche and tsunami hazard will occur as a result of other approved, proposed, or probable projects.

13c. No impacts due to seiche or tsunamis have been identified and, thus, the project is consistent with the applicable General Plan Goals and Policies for Item 13 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>14. Landslide/Mudflow Hazard (PWA)</b>								
<b>Will the proposed project:</b>								
a) Result in a landslide/mudflow hazard, as determined by the Public Works Agency Certified Engineering Geologist, based on the location of the site or project within, or outside of mapped landslides, potential earthquake induced landslide zones, and geomorphology of hillside terrain?	X							
b) Be consistent with the applicable General Plan Goals and Policies for Item 14 of the Initial Study Assessment Guidelines?	X				X			

**Impact Discussion:**

14a. The project site is not located in a mapped landslide, not located within a hillside area, and is not located in a potential seismically induced landslide zone, based on analysis conducted by the California Geological Survey as part of California Seismic Hazards Mapping Act, 1991, PRC sections 2690-2699.6. Additionally, the project does not include any excavations into a hillside. Thus, there are no impacts to the project resulting from landslide hazard.

The hazards from landslides/mudslides will affect each project individually; and no cumulative landslide/mudslide hazard will occur as a result of other approved, proposed, or probable projects.

**14b.** There are no impacts to the project resulting from landslide hazard. Thus, the project is consistent with the applicable General Plan Goals and Policies for Item 14 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>15. Expansive Soils Hazards (PWA)</b>								
<b>Will the proposed project:</b>								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving soil expansion because it is located within a soils expansive hazard zone or where soils with an expansion index greater than 20 are present?		X						
b) Be consistent with the applicable General Plan Goals and Policies for Item 15 of the Initial Study Assessment Guidelines?		X			X			

**Impact Discussion:**

**15a.** Future development at the project site will be subject to the requirements of the County of Ventura Building Code adopted from the California Building Code, in effect at the time of construction that requires mitigation of potential adverse effects on expansive soils. Thus, impacts on expansive soils will be less than significant.

The hazards from expansive soils will affect each project individually; and no cumulative expansive soils hazard will occur as a result of other approved, proposed, or probable projects.

**15b.** Impacts on expansive soils will be less than significant. Thus, the proposed project is consistent with the applicable General Plan Goals and Policies for Item 15 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.



Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Result in a potential erosion/siltation hazard and flooding hazard pursuant to any of the following documents (individually, collectively, or in combination with one another): <ul style="list-style-type: none"> <li>• 2007 Ventura County Building Code Ordinance No.4369</li> <li>• Ventura County Land Development Manual</li> <li>• Ventura County Subdivision Ordinance</li> <li>• Ventura County Coastal Zoning Ordinance</li> <li>• Ventura County Non-Coastal Zoning Ordinance</li> <li>• Ventura County Standard Land Development Specifications</li> <li>• Ventura County Road Standards</li> <li>• Ventura County Watershed Protection District Hydrology Manual</li> <li>• County of Ventura Stormwater Quality Ordinance, Ordinance No. 4142</li> <li>• Ventura County Hillside Erosion Control Ordinance, Ordinance No. 3539 and Ordinance No. 3683</li> <li>• Ventura County Municipal Storm Water NPDES Permit</li> <li>• State General Construction Permit</li> <li>• State General Industrial Permit</li> <li>• National Pollutant Discharge Elimination System (NPDES)?</li> </ul>		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 17A of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

17A-1. There is not a substantial increase in impervious area proposed from the amount of impervious surface authorized under Modification LU06-0011. Modification LU06-0011 authorized 172,412-sq. ft. of impervious surface area within the current permit boundaries. Within the requested 1.67-acre expansion area, the applicant proposes a total of 29,362-sq. ft. of impervious surface: 26,335-sq. ft. was installed without permits and is proposed to be legalized, and 3,027-sq. ft. of new impervious surface will be installed. Within the current permit boundary, there is a total of 104,566-sq. ft. of existing impervious surface. As part of the modification request, the applicant proposes the addition of 1,825-sq. ft. of impervious surface within the current permit boundary. The

total impervious surface within the current permit boundary and the expansion area will be 135,753-sq. ft., which is still within the limits of the previously approved amount of impervious surface area for the site. No increase in flooding hazards or potential for erosion or siltation will occur as a result of the proposed project and, thus, the impacts will be less than significant.

**17A-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 17 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>17b. Hydraulic Hazards – FEMA (WPD)</b>								
<b>Will the proposed project:</b>								
1) Be located outside of the boundaries of a Special Flood Hazard Area and entirely within a FEMA-determined 'X-Unshaded' flood zone (beyond the 0.2% annual chance floodplain: beyond the 500-year floodplain)?		X				X		
2) Be located outside of the boundaries of a Special Flood Hazard Area and entirely within a FEMA-determined 'X-Shaded' flood zone (within the 0.2% annual chance floodplain: within the 500-year floodplain)?		X				X		
3) Be located, in part or in whole, within the boundaries of a Special Flood Hazard Area (1% annual chance floodplain: 100-year), but located entirely outside of the boundaries of the Regulatory Floodway?		X				X		
4) Be located, in part or in whole, within the boundaries of the Regulatory Floodway, as determined using the 'Effective' and latest available DFIRMs provided by FEMA?		X				X		
5) Be consistent with the applicable General Plan Goals and Policies for Item 17B of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

**17B-1. Through 17B-4.** The Ventura County Public Works Agency (PWA), Engineering Services Department, Floodplain Management Section reviewed the proposed project and determined that the project site is not located in a Federal Emergency Management

Agency (FEMA) 1% annual chance (100-year) floodplain as evidenced on the effective digital Flood Insurance Rate Map (DFIRM No. 06111C0778E: January 20, 2010). The site is located in a "Shaded X Zone" (500-year floodplain). The site is located approximately 331 feet northwesterly of the Santa Clara River floodplain. A Floodplain Clearance is required, as a condition of approval, from the PWA, Engineering Services Department prior to the issuance of a building permit for construction of the facility. The proposed project will not result in project-related impacts related to flooding, or contribute to cumulative impacts related to flooding. Therefore, the proposed project is deemed less than significant as it relates to flooding.

17B-5. The proposed project is not located in a FEMA 1% annual chance (100-year) floodplain as evidenced on the effective digital Flood Insurance Rate Map (DFIRM No. 06111C0778E: January 20, 2010). The site is located in a "Shaded X Zone" (500-year floodplain). Therefore, the project is deemed compliant with the Flood Hazard policies set out in the Ventura County General Plan.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>18. Fire Hazards (VCFPD)</b>								
<b>Will the proposed project:</b>								
a) Be located within High Fire Hazard Areas/Fire Hazard Severity Zones or Hazardous Watershed Fire Areas?	X				X			
b) Be consistent with the applicable General Plan Goals and Policies for Item 18 of the Initial Study Assessment Guidelines?	X				X			

**Impact Discussion:**

18a. The project site is not located in a High Fire Hazard Area/Fire Severity Zone or Hazardous Watershed Fire Area as indicated by the VCFPD. Thus, no impacts related to fire hazards are anticipated as a result of the proposed project.

18b. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 18 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>19. Aviation Hazards (Airports)</b>								
<b>Will the proposed project:</b>								
a) Comply with the County's Airport Comprehensive Land Use Plan and pre-established federal criteria set forth in Federal Aviation Regulation Part 77 (Obstruction Standards)?	X				X			
b) Will the proposed project result in residential development, a church, a school, or high commercial business located within a sphere of influence of a County airport?	X				X			
c) Be consistent with the applicable General Plan Goals and Policies for Item 19 of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

19a. and 19b. The proposed project is not located within a sphere of influence of a County-operated airport and will not involve residential development, a church, a school or a high-rise commercial business. Thus, no impacts on aviation hazards are anticipated as a result of the proposed project.

19c. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 19 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>20a. Hazardous Materials/Waste – Materials (EHD/Fire)</b>								
<b>Will the proposed project:</b>								
1) Utilize hazardous materials in compliance with applicable state and local requirements as set forth in Section 20a of the Initial Study Assessment Guidelines?			X			X		

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2) Be consistent with the applicable General Plan Goals and Policies for Item 20a of the Initial Study Assessment Guidelines?			X			X		

### Impact Discussion:

20A-1. According to Section 20(a) of the Ventura County Initial Study Assessment Guidelines, hazardous materials means any material that, because of its quantity, concentration, physical or chemical characteristics poses a significant threat or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that the regulatory agency (EHD, Certified Unified Program Agency (CUPA)) determines to be potentially injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

The proposed project involves the continued operation of a wastewater treatment facility that includes the storage, use, and onsite transportation of hazardous materials. The hazardous materials proposed to be stored, handled, and transported onsite are expected to include:

Name of Material	Physical State	DOT Hazard Class	IBC/IFC Hazard Class	Largest Container	Maximum Quantity
Diesel Fuel	Liquid	Combustible Liquid	Class II Combustible Liquid	500 gallons	500 gallons
Motor Oil	Liquid	Combustible Liquid	Class IIIB Combustible Liquid	55 gallons	110 gallons
Hydraulic Oil	Liquid	Not Regulated	Class IIIB Combustible Liquid	5 gallons	80 gallons
Transmission Oil	Liquid	Not Regulated	Class IIIB Combustible Liquid	5 gallons	80 gallons
Acetylene	Compressed Gas	Flammable Gas	Flammable Gas	80 ft3	80 ft3
Oxygen	Compressed Gas – Liquid State	Non-Flammable Gas Oxidizer	Oxidizer	1,000 gallons	1,000 gallons
Argon	Compressed Gas	Non-Flammable Gas	Compressed Gas	80 ft3	960 ft3
Sulfuric Acid	Liquid	Corrosive Liquid	Corrosive	5,050 gallons	6,040 gallons
Hydrogen Peroxide	Liquid	Oxidizer	Corrosive	330 gallons	990 gallons

Name of Material	Physical State	DOT Hazard Class	IBC/IFC Hazard Class	Largest Container	Maximum Quantity
		Corrosive Liquid			
Emulsion Breaker	Liquid	Flammable Liquid	Class IA Flammable Liquid	250 gallons	250 gallons
Ferric Chloride	Liquid	Corrosive Liquid	Corrosive	330 gallons	660 gallons
Sodium Hydroxide	Liquid / Solid	Corrosive	Corrosive	330 gallons 60 pounds	990 gallons 480 pounds
Aluminum Sulfate	Liquid	Corrosive	Corrosive	330 gallons	660 gallons
Polymers	Liquid / Solid	Not Regulated	Not Regulated	330 gallons	990 gallons
Sodium Hypochlorite (bleach)	Liquid	Corrosive	Corrosive Oxidizer	330 gallons	990 gallons

The improper storage, handling, and disposal of these materials could result in the creation of adverse impacts on the environment and on human health and safety. Because the facility will store, handle, and transport hazardous materials, and because of the 2014 fire and explosion that occurred on the project site which caused acute injury to humans and destroyed property, the Planning Division contracted with an environmental consultant, Dr. Daniel Tormey, of Catalyst Environmental Solutions,<sup>22</sup> for peer review of the applicant's application materials and supporting documents and plans (e.g., Operations and Maintenance Plan, Odor Minimization Plan, Dust Control Plan, and SPCC Plan) to evaluate and determine whether the proposed project includes operating measures and controls to address the potential risks of another explosion, fire, or any other hazardous condition or incident at the proposed wastewater treatment facility. After reviewing the applicant's application, Dr. Tormey provided staff with a Technical Memorandum (Attachment 25), dated September 6, 2018, recommending that a Risk Management Analysis (RMA) and a Pipeline Integrity Test be prepared by the applicant to fully address any potential safety and environmental hazards that could arise from the operation of the proposed wastewater treatment facility.

The applicant hired Ensaf, Inc. to prepare the RMA. (Refer to Attachment 7.). The City of Oxnard has stated that they require a Pipeline Integrity Test to be conducted by the applicant prior to renewed discharges from the facility to the City of Oxnard Wastewater Treatment Plant. The City states that the existing condition of the pipeline is that it is physically blocked from the City plant.<sup>23</sup> As explained previously in Section A.7., above,

<sup>22</sup> Catalyst Environmental Solutions Corporation is a full service environmental consulting firm specializing in the energy sector, land development and remediation, and water resources.

<sup>23</sup> As a condition of approval, the Permittee will be required to conduct a pressure and an electromagnetic test using a smart pig. If the construction of the pipeline does not allow

the RMA was conducted utilizing the PHA methodology. The PHA included review of the proposed wastewater treatment processes and ancillary processes (including the loading, unloading, storage and onsite chemical transport) at the project site. The PHA methodology included determination of multiple hazard scenarios. For each scenario, the PHA team identified potential causes, consequences, safeguards and controls. The PHA team utilized a risk ranking tool to determine the potential likelihood of an adverse incident, the potential severity of the incident, and overall risk rank. The PHA team identified nine recommendations to improve the safety of the facility by reducing the risks of hazards:

- Use of double-walled tubing for chemical transfers;
- Design optimization of chemical feed areas to minimize opportunity for vehicle collisions;
- Establishment of designated paths to the hazardous material storage building for delivery trucks;
- Design and construction of a hazardous material storage building that is compliant with local/state chemical storage and fire protection standards;
- Establishment of policies that (1) prohibit receipt of wastes in totes or drums and (2) prohibit pumping of drums or totes into any vacuum truck;
- Implementation of a New Chemical introduction/procurement policy;
- Establishment of program to familiarize local emergency responders with site operations and hazards;
- Posting of appropriate hazard warning signage at hazardous materials storage building; and,
- Posting of appropriate informational signage at truck unloading area to identify unloading valves/piping.

Dr. Tormey concurs with the recommendations included in the RMA and proposes that the specific actions recommended by Ensaf, as well as actions identified in Dr. Tormey's September 6, 2018 Technical Memoranda be implemented in a series of plans and incorporated as mitigation measures/conditions of approval of the project. The series of plans would include the following: (1) Risk Management Plan; (2) Training Plan; (3) Operating and Maintenance Plan; and (3) Annual Spill Drill Plan. Below is an annotated outline of each of the required plans and the necessary elements for each plan. These plans (as well as all the recommended mitigation measures/conditions of approval) will be reviewed at least once every three years through the County's standard Condition Compliance Program to verify the operator successfully implements the plans (and

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for electromagnetic testing, then the Permittee shall conduct a hydrostatic pressure test, or a test method that provides an equivalent level of safety information that is approved by the County prior to conducting the test. The Permittee shall address and fix any issues or anomalies discovered during these tests and obtain a new Wastewater Discharge Permit approved by the City of Oxnard prior to the issuance of a Zoning Clearance for Construction of the facility and prior to use of the existing pipeline as part of the wastewater treatment operation.

project conditions) as approved by the decision-making body. In addition to the standard tri-annual condition compliance review, the Permittee will be required to advise the Planning Division of any changes to the operation of the wastewater facility due to local, state, or federal regulatory requirement changes and any operator-initiated changes by submitting a "tracking sheet" to document the changes throughout the life of the permit. Prior to the Permittee's implementation of any changes to the facility, the revised plans/operations shall be reviewed and approved by the Planning Division, EHD and VCFPD, if necessary.

### **Risk Management Plan**

The Permittee shall prepare a Risk Management Plan to supplement the January 2017 O&M Manual. The O&M Manual focuses on the treatment system. The Risk Management Plan would consider facility operations as a whole. The following elements would be included in the Risk Management Plan:

1. Results of the design optimization of the chemical feed areas to minimize opportunities for vehicle collisions. This element was recommended by Ensaf and focuses on the facility operations outside of the treatment system. The presentation would include elements considered in the design optimization, how these elements were addressed in the modified design, and identification of controls (e.g. signs, barricades, other controls). The modified design with controls would also be indicated on the site plan.
2. Design and construction of a hazardous material storage building that is compliant with local and state chemical storage and fire protection standards. This element was recommended by Ensaf and focuses on the area of hazardous materials storage. The design would include specification of the regulatory standards and guidance relied upon, and a determination of how the storage building would comply with these standards.
3. Establishment of designated paths to the hazardous materials storage building for delivery trucks. This element was recommended by Ensaf and reflects that the current paths for delivery trucks to the hazardous materials storage building could have collisions. The applicant's site plan will be modified to include these designated paths, as well as controls to assure compliance (e.g., signs, barricades, and other controls).
4. Posting of appropriate hazard warning signage at the hazardous materials storage building. This element was recommended by Ensaf. The signage can be identified as part of the element on design and construction of the hazardous materials storage building.
5. Posting of appropriate informational signage at the truck unloading area to identify unloading valves and piping. This element was recommended by Ensaf. This Plan shall provide a map of valves and piping at the truck unloading area to identify

the type of informational signage to help minimize the potential for unloading to the incorrect valve or pipeline.

6. Use of double-walled tubing for chemical transfers. This element was recommended by Ensaf. This Plan shall include a modified site plan identifying those chemical transfer areas that would have double-walled tubing.
7. Consistent identification and tracking of the potential for chemical incompatibilities. The facility explosion in November 2014 was caused by a chemical incompatibility that was not adequately identified, and that had inadequate controls to prevent from occurring. The Risk Management Plan shall include a clear protocol for identifying the potential for chemical incompatibilities in any chemical accepted, used or handled at the facility. The protocol shall include requirements for the following:
  - a. Profiling of chemicals accepted, used, or handled at the facility. The profiling shall include both accepted waste streams, and any other treatment chemicals stored or used at the facility. Profiling shall include identification of chemicals that otherwise may only be indicated by a trade name by the chemical supplier.
  - b. Use of chemical incompatibility charts and references to identify the potential adverse effects from mixing of chemicals on the facility.
  - c. For those chemical incompatibilities that may lead to adverse effects, the Risk Management Plan shall identify a hierarchy of controls to ensure incompatible chemicals are not mixed.

### **Chemical Incompatibility Training Plan**

The Permittee shall prepare a Chemical Incompatibility Training Plan to supplement the Safety Handbook. The following elements would be included in the Training Plan:

1. Establishment of policies that (1) prohibit receipt of wastes in totes or drums and (2) prohibit pumping of drums or totes (either waste totes/drums or product totes/drums) into any vacuum truck. This Plan element was recommended by Ensaf and focuses on the root cause of the November 2014 explosion at the facility. The employee training shall include procedures for identification of improper containers, and specific procedures to ensure that material in totes or drums is not introduced into vacuum trucks.
2. Implementation of a New Chemical introduction and procurement policy. This element was recommended by Ensaf. The policy would, at a minimum, include the elements described in Item 7 of the Risk Management Plan ("Consistent identification and tracking of the potential for chemical incompatibilities"). The policy and the procedures and controls for consistent identification and tracking of

the potential for chemical incompatibilities would be clearly and thoroughly described in the Training Plan.

### **Annual Tabletop Response Drill**

The first responders of the November 2014 fire and explosion at the facility were not adequately informed about the risks posed by the chemicals stored onsite and the safe abating of hazardous conditions in light of the chemical incompatibilities that resulted from the event. The Permittee shall provide for an annual Tabletop Response Drill at the facility for first responders. The drill will be conducted onsite and consider accident conditions that would lead to responders coming to the facility. The drill will identify the roles and responsibilities of facility personnel, response personnel, and identify an Incident Command Structure. The outline of the drill will be reviewed and approved by the County. This drill element was also recommended by Ensafe as "establishment of a program to familiarize local emergency responders with site operations and hazards".

Implementation of the above referenced plans will reduce the potentially significant project-specific impacts to a level of less than significant as it relates to the storage, handling and disposal of hazardous materials. (Refer to Mitigation/Residual Impact(s) below in Item 20(a) for the list of mitigation measures for this impact area).

### **Operations and Maintenance Manual**

As part of the application, the applicant submitted a draft O&M Manual (refer to Attachment 19), prepared by Ensafe, Inc., dated January 2017, as required, in part, to meet regulatory requirements promulgated by the EPA at Title 40 CFR 437 for The Centralized Waste Treatment Point Source Category, Subpart D – Multiple Wastestream, for the proposed wastewater treatment facility. Specifically, the O&M Manual is developed and must be maintained onsite to meet the requirements for Onsite Compliance Paperwork as defined at Title 40 CFR 437.41(b), in support of initial and periodic certification statements for pretreatment. The draft O&M Manual has thus been prepared to describe and document the procedures to be followed to ensure that the pretreatment systems are well operated and maintained, and where applicable why these adopted procedures ensure compliance. The draft O&M Manual is intended to provide the following:

1. Guidance for wastewater technicians operating the pretreatment system and to be a training tool for all employees at the facility. The draft O&M Manual is a dynamic document, which will be updated as necessary to reflect any future changes to the system layout, operations, or other changes at the facility.
2. Process descriptions, general guidelines for process operations, sampling and testing, personnel responsibilities, record keeping, system maintenance, and emergency operation.

The Permittee will be required, as a condition of approval, to submit a final O&M Manual to the Planning Division for review and approval prior to the issuance of a Zoning

Clearance for Construction of the facility. With the implementation of this mitigation measure, the proposed project will have a less than significant project-specific impact as it related to onsite hazards and hazardous materials.

### **Hazardous Material Business Plan**

According to the County's records, a Hazardous Materials Business Plan (HMBP) for reportable hazardous materials was electronically submitted to the California Environmental Reporting System (CERS) on May 23, 2017 (CERS I.D. No. 10331929) by the previous operator, SCWW. (Section A.10, Table A, above). The applicant does not currently have an active permit to operate issued by EHD/CUPA. To ensure a current and accurate inventory of hazardous materials is available for emergency responders in the event of an incident or emergency, the new operator will be required, as a condition of approval, to submit an HMBP to CERS prior to the issuance of a Zoning Clearance for Construction, annually on or before March 1st, and as often as is necessary in order to update the list of reportable hazardous materials in accordance with CA HSC, Chapter 6.95, § 25508.

The HMBP must include detailed information on the inventory of hazardous materials at the facility, emergency response plans and procedures in the event of a reportable release or threatened release of a hazardous material, training for all new employees and annual training, including refresher courses, for all employees in safety procedures in the event of a release or threatened release of a hazardous material, and a site map that contains loading areas, internal roads, adjacent streets, storm and sewer drains, access and exit points, emergency shut-offs, evacuation staging areas, hazardous material handling and storage areas, and emergency response equipment. The HMBP is necessary in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of hazardous materials into the workplace and environment. With the implementation of this condition of approval, the proposed project will have a less than significant project-specific impact as it relates to hazardous materials.

### **California Health and Safety Codes**

The new operator will also be required, as a condition of approval, to operate the facility in compliance with applicable state and local regulations (i.e., CCR, Title 22, CA HSC, Chapter 6.95 and Ventura County Ordinance Code) pertaining to the safe storage, handling, and disposal of potentially hazardous materials so that any potential project-specific impacts are reduced to a level of less than significant. CA HSC Chapter 6.5 and CCR, Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Waste, establishes definitions and management requirements related to hazardous waste identification, transportation, treatment and disposal, and tracking and record keeping. Some requirements include "cradle-to-grave" manifesting (tracking of the waste from generation to final disposal), proper labeling, and safe storage of hazardous waste. Generators, transporters, and disposal facilities are required to obtain an identification number. This number identifies each handler on hazardous waste manifests and other paperwork. The identification number enables regulators to track the waste

from origin to final disposal and are site specific. CA HSC Chapter 6.95 and CCR, Title 19 (Division 2, Chapter 4), Hazardous Materials Release Response Plans and Inventory, establishes the requirement for businesses to create and maintain HMBPs, establishes the statewide environmental reporting systems for submittal of HMBPs, describes the requirements for the HMBPs such as hazardous materials inventory, and describes procedures for the CUPA to respond to violations of the HMBP requirements. With the implementation of this condition of approval, the proposed project will have a less than significant project-specific impact as it relates to hazardous materials.

### **Fire Code Permits**

The operation of a wastewater treatment facility is subject to the requirements of the Uniform Fire Code as adopted and amended by the Ventura County Fire Code Ordinance. As a condition of approval, the Permittee will be required to obtain a Fire Code permit prior to the storage, usage or handling of any hazardous materials, prior to the issuance of a Zoning Clearance for Construction, including prior to conducting processes which produce conditions hazardous to life or property, and prior to installation of equipment used in the connection with such activities, including emergency generators with "day tanks" greater than 60 gallons (defined below). Fire Code permit requirements include, but are not limited to, the following: incompatible materials shall be stored separate from each other and not stored within the same hazardous material cabinet or containment area; maintain all required secondary containment areas, curbs, and dikes; maintain legible and visible hazardous material warning signs, placards, and labels; immediately notify the VCFPD and EHD of any spills of hazardous materials and injuries resulting from the storage and use of hazardous materials; and, notify the VCFPD prior to increasing the amount or the addition of any hazardous material. The intent of the Fire Code permit is to assist in providing a reasonable degree of protection for life and property from the hazards created by fire and explosion. In addition to obtaining a Fire Code permit, the Permittee will be required to install fire extinguishers and obtain a VCFPD Form 126 (Fire Requirements for Construction Application) which specifies the rate and availability of fire flow, size and location of fire hydrants, and water supply for a subject property to determine if the proposed construction will meet the current standards of the VCFPD Ordinances 29 and 30. This form is required by the VCFPD for any proposed construction prior to the issuance of any building permits in unincorporated Ventura County. With the implementation of these conditions of approval, the proposed project will have a less than significant project-specific impact as it relates to hazardous materials. (Refer to Section A.10, Table A, above).

As part of the project design, the applicant proposes to install a 610-sq. ft. metal, hazardous materials storage building atop an existing concrete pad (refer to Attachments 10 and 11) that is designed to separately store incompatible hazardous materials from each other to avoid potential hazardous incidents. This element was also recommended by Ensaf (See No. 2 of the Risk Management Plan above). Prior to the construction of the hazardous materials storage building, the Ventura County Building and Safety Division and the VCFPD will review the plans to ensure the structure is designed and constructed in compliance with applicable chemical storage and fire protection standards

and regulations. When not stored in the hazardous materials storage building, the applicant will store hazardous materials used during the wastewater treatment processes near the point of use in “day tanks” which will be placed on top of spill containment trays. These tanks will be hard-piped into the process equipment. The “day tanks” will be refilled, as needed, from the hazardous material containers stored in the hazardous material storage building. The discharge of hazardous waste is not proposed as part of this project and is not authorized by the current permit. No underground hazardous materials storage tanks currently exist or are proposed to be installed at the facility as part of this project.

### **Spill Prevention, Control, and Countermeasure Plan**

As part of the application, the applicant submitted a draft SPCC Plan (refer to Attachment 24), prepared by Sespe Consulting, Inc., dated September 2018, to identify procedures and controls for preventing accidental releases of petroleum products and to minimize the impact if a release occurs as required by Title 40 CFR Part 112 and the CA HSC, Chapter 6.67, § 25270 – Aboveground Petroleum Storage Act (APSA). On January 1, 2008, the CUPAs were vested with the responsibility and authority to implement the APSA. The storage statement requirements are included in this authority, but most facilities now meet the requirement by having a current HMBP under the Hazardous Release Response Plans and Inventories program pursuant to CA HSC, Division 20, Chapter 6.95 § 25500.

The draft SPCC Plan includes a list of petroleum product containing tanks and a site plan showing the locations of these tanks at the facility. The facility will have the following petroleum product containing tanks: (1) cone bottom waste receiving tanks; (2) mix tanks; (3) oil/water separator; (4) skim oil tanks; (5) waste oil and motor oil drums; and, (6) diesel fuel tank. There will not be any completely or partially buried tanks that contain petroleum products at this facility. The draft SPCC Plan also includes a description of the materials stored at the facility, the discharge prevention measures, drainage control measures, spill response procedures, methods of waste disposal, containment specifications, and administrative procedures. EHD staff reviewed the applicant’s draft SPCC plan and determined that it contains the required information for a SPCC Plan. The Permittee will be required, as a condition of approval, to submit a final SPCC Plan certified by a registered professional engineer to EHD for review and approval prior to renewed operations of the facility (i.e., prior to the issuance of a Zoning Clearance for Construction). With the implementation of this condition of approval, the proposed project will have a less than significant project-specific impact as it relates to hazardous materials.

### **Safety Handbook**

As part of the application, the applicant submitted a Safety Handbook (Attachment 26), prepared by Tim Koziol, CEO of RI-NU, for the proposed wastewater treatment facility. The Safety Handbook is divided into five sections: (1) Foreword; (2) Injury and Illness Prevention Program (IIPP); (3) Code of Safe Practices; (4) Safety Standards; and, (5) General Safety Policies. The Safety Handbook is intended to achieve an injury-free workplace.

An IIPP is an element required by CCR, Title 8, § 3203 for all employers. It consists of seven established criteria (responsibilities, compliance and disciplinary policy, communication, identification of workplace hazards, accident reporting and investigating, employee training and record keeping). The IIPP is the core of the administrative portion of the handbook. The Code of Safe Practices section are not practices required by a regulatory body, but rather reflect current laws that will be implemented to complement independent study or assist in tailgate safety meetings. The Safety Standards section includes written job procedures utilized in most of the daily activities of the facility. Most of the written job procedures are regulatory and reference applicable federal and state laws. The General Safety Guidelines section encompasses all other written safety material that is not a daily function of the business. As noted above under the heading "Chemical Incompatibility Plan", the Safety Handbook will be supplemented by the Chemical Incompatibility Plan. With the implementation of this Plan and the procedures outlined in the Safety Handbook, the proposed project will have a less than significant project-specific impact as it related to hazardous materials.

Based on the discussion above, potentially significant project-specific impacts have been identified and, thus, with the incorporation of the above-referenced EHD and VCFPD conditions of approval, and recommended mitigation measures identified in the RMA, the project-specific and cumulative impacts related to hazardous materials will be less than significant.

20A-2. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 20A of the Initial Study Assessment Guidelines upon implementation of the recommended conditions of approval and mitigation measures outlined herein.

**Mitigation/Residual Impact(s):** Potentially significant project-specific impacts on the environment and human health related to the storage, handling, and onsite transportation of hazardous materials have been identified, but the following mitigation measures will be incorporated as conditions of approval of the project in order to reduce the significant impacts to a level of less than significant:

*Risk Management Plan – Mitigation Measure (M-2)*

**Purpose:** The purpose of the Risk Management (RM) Plan is to reduce the risk posed by the operation of the wastewater treatment facility to the public and the environment as identified in the Risk Management Analysis prepared by Ensaf, Inc., dated January 4, 2019 and Dr. Daniel Tormey's September 6, 2018 Technical Memorandum.

**Requirement:** The Permittee shall prepare and submit a RM Plan to supplement the January 2017 Operations and Maintenance (O&M) Manual to the Planning Division for review and approval. The O&M Manual focuses on the treatment system. The RM Plan shall consider facility operations as a whole. The following elements shall be included in the RM Plan, which are the same elements required for those facilities (regulated by the EPA) that use certain hazardous substances, pursuant to the 1990 Clean Air Act (CAA, § 112 (r)):

1. Results of the design optimization of the chemical feed areas will become standard operating procedures to minimize opportunities for onsite vehicle collisions. The procedures shall include elements considered in the design optimization, how these elements were addressed in the modified design, and identification of controls (e.g. signs, barricades, other controls). In addition to these written procedures, a site plan shall be included in the Plan to show the modified design with controls.
2. Design and construct a hazardous material storage building compliant with local and state chemical storage and fire protection standards. The design shall incorporate these regulatory standards and include a description of how the storage building will comply with these standards.
3. Establish onsite designated paths to the hazardous materials storage building for delivery trucks. A site plan shall be included in the Plan to show the designated paths, as well as controls to assure compliance (e.g., signs, barricades, and other controls).
4. Post appropriate hazard warning signage at the hazardous materials storage building. The signage shall be identified as part of the design and construction of the hazardous materials storage building.
5. Post appropriate informational signage at the truck unloading area to identify unloading valves and piping. The Plan shall provide a map of valves and piping at the truck unloading area to minimize the potential for unloading to the incorrect valve or pipeline.
6. Use of double-walled tubing for chemical transfers. The Plan shall include a modified site plan identifying those chemical transfer areas that will have double-walled tubing.
7. Identify and track the potential for chemical incompatibilities. The RM Plan shall identify a clear protocol for identifying the potential for chemical incompatibilities in any chemical accepted, used or handled at the facility. The protocol shall include requirements for the following:
  - a. Profile chemicals accepted, used, or handled at the facility. The profiling shall include both accepted waste streams, and any other treatment chemicals stored or used at the facility. Profiling shall include identification of chemicals that otherwise may only be indicated by a trade name by the chemical supplier.

- b. Use of chemical incompatibility charts and references to identify the potential adverse effects from mixing of chemicals on the facility.
- c. For those chemical incompatibilities that may lead to adverse effects, the Plan shall identify a hierarchy of controls to ensure incompatible chemicals are not mixed.

**Documentation:** The Permittee shall submit three copies of the RM Plan to the Planning Division for review and approval by the Planning Division, EHD, and Fire Prevention District, if necessary. The RM Plan shall be prepared by a qualified firm, as determined by the Planning Division in consultation with EHD and VCFPD, as needed. If the Permittee proposes to modify the RM Plan, or a change is dictated by a local, state, or federal regulatory agency, the Permittee shall first contact the Planning Division to determine the appropriate authorization required to allow for this modification. Depending on the extent of the change to the RM Plan, the Planning Division's authorization for any modifications to the RM Plan may require a discretionary modification to the CUP. The appropriate authorization will be subject to determination by the Planning Division. Modifications to the RM Plan shall not be implemented by the Permittee until such modification has been reviewed and approved by the Planning Division.

A tracking sheet shall be required to be inserted at the front of the RM Plan for the Permittee to document changes to the Plan, identify the reason for the change, section(s) modified, and authorized approval.

**Timing:** The Permittee shall submit three copies of the RM Plan to the Planning Division for review and approval to verify the requirements of this condition have been met prior to the issuance of a Zoning Clearance for Construction. The approved RM Plan shall be implemented for the life of the permit.

**Monitoring and Reporting:** The Planning Division will maintain a copy of the approved RM Plan in the Project file. As part of the standard tri-annual Condition Compliance review, the tracking sheet shall be reviewed by the Planning Division and compared to the approved permits for the facility. The Planning Division and EHD have the authority to conduct site inspections to ensure that the Permittee complies with this condition for the life of the permit, consistent with the requirements of NCZO section 8114-3.

*Chemical Incompatibility Plan – Mitigation Measure (M-3)*

**Purpose:** The purpose of the Chemical Incompatibility (CI) Plan is to reduce the risk of human error related to the storage and handling of onsite chemicals and subsequent potential risk to the public and the environment as identified in the Risk Management Analysis prepared by Ensaf, Inc., dated January 4, 2019 and Dr. Daniel Tormey's September 6, 2018 Technical Memorandum.

**Requirement:** The Permittee shall prepare and submit a CI Training Plan to supplement the Facility's Safety Handbook to the Planning Division for review and approval. The following elements shall be included in the Plan:

1. Establish policies that (1) prohibit receipt of wastes in totes or drums and (2) prohibit pumping of drums or totes (either waste totes/drums or product totes/drums) into any vacuum truck. Employee training shall include procedures for identification of improper containers and specific procedures to ensure that material in totes or drums is not introduced into vacuum trucks.
2. Implement a new chemical introduction and procurement policy a new chemical is brought onsite for modifying the chemical compositions of acceptable waste streams. The policy shall, at a minimum, include the elements described in Item 7 of the Risk Management Plan ("Consistent identification and tracking of the potential for chemical incompatibilities"). The policies, procedures, and controls for consistent identification and tracking of the potential for chemical incompatibilities shall be clearly and thoroughly described in the Training Plan.

**Documentation:** The Permittee shall submit three copies of the CI Plan to the Planning Division for review and approval to verify that the requirements for this condition have been met. The CI Plan shall be prepared by a qualified firm, as determined by the Planning Division in consultation with EHD and VCFPD, as needed. If the Permittee proposes to modify the CI Plan, or a change is dictated by a local, state, or federal regulatory agency, the Permittee shall first contact the Planning Division to determine the appropriate authorization required to allow for this modification. Depending on the extent of the change to the CI Plan, the Planning Division's authorization for any modifications to the CI Plan may require a discretionary modification to the CUP. The appropriate authorization will be subject to determination by the Planning Division. Modifications to the CI Plan shall not be implemented by the Permittee until such modification has been reviewed and approved by the Planning Division.

A tracking sheet shall be required to be inserted at the front of the CI Plan for the Permittee to document changes to the Plan, identify the reason for the change, section(s) modified, and authorized approval.

**Timing:** The Permittee shall submit three copies of the CI Plan prior to the issuance of a Zoning Clearance for Construction. The approved CI Plan shall be implemented for the life of the permit.

**Monitoring and Reporting:** The Planning Division will maintain a copy of the approved CI Plan in the Project file. As part of the standard tri-annual Condition Compliance review, the tracking sheet shall be reviewed by the Planning Division and compared to the approved permits for the facility. The Planning Division and EHD have the authority to conduct site inspections to ensure that the Permittee complies with this condition for the life of the permit, consistent with the requirements of NCZO section 8114-3.

Tabletop Response Drill – Mitigation Measure (M-4)

**Purpose:** The purpose of the Tabletop Response Drill is to reduce the risk posed by the operations of the wastewater treatment facility to the public by adequately apprising first responders about the risks posed by the onsite chemical storage, chemical handling procedures, onsite equipment, and the processes required to abate hazardous conditions as identified in the Risk Management Analysis prepared by Ensaf, Inc., dated January 4, 2019 and Dr. Daniel Tormey's September 6, 2018 Technical Memorandum.

**Requirement:** The Permittee shall hold an annual Tabletop Response Drill at the facility for first responders with participation by facility employees and contractors. The drill shall be conducted onsite and consider situations requiring emergency response. The drill shall identify the roles and responsibilities of facility personnel, emergency response personnel, and identify an Incident Command Structure. The situations to be tested by the drill shall be reviewed and approved by the Planning Division, EHD, and the VCFPD.

**Documentation:** The Permittee shall submit a framework for the drill that covers realistic scenarios to the Planning Division, CUPA-EHD, and the VCFPD for review and approval prior to implementation of each annual drill. If the Permittee proposes to modify any aspect of the approved drill framework and scenario, or a change is dictated by a local, state, or federal regulatory agency, the Permittee shall first contact the Planning Division to determine the appropriate authorization required to allow for this modification. Depending on the extent of the change to the drill framework and scenario, the Planning Division's authorization for any modifications may require a discretionary modification to the CUP. The appropriate authorization will be subject to determination by the Planning Division. Modifications to the framework and scenario shall not be implemented by the Permittee until such modification has been reviewed and approved by the Planning Division.

A tracking sheet shall be required to be inserted at the front of the drill framework and scenario for the Permittee to document changes, identify the reason for the change, section(s) modified, and authorized approval.

**Timing:** The Permittee shall submit a framework for the drill to the Planning Division, EHD, and the VCFPD for review and approval prior to implementation of the annual drill and prior to the issuance of the Zoning Clearance for Use Inauguration. Annual tabletop drills shall be implemented for the life of the permit.

**Monitoring and Reporting:** The Planning Division will maintain a copy of the approved drill framework and scenario in the Project file. As part of the standard tri-annual Condition Compliance review, the tracking sheet shall be reviewed by the Planning Division and compared to the approved permits for the facility. The Planning Division and EHD have the authority to conduct site inspections to ensure that the Permittee complies with this condition for the life of the permit, consistent with the requirements of NCZO section 8114-3.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>20b. Hazardous Materials/Waste – Waste (EHD)</b>								
<b>Will the proposed project:</b>								
1) Comply with applicable state and local requirements as set forth in Section 20b of the Initial Study Assessment Guidelines?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 20b of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

20b-1. The proposed wastewater treatment facility includes activities that will routinely generate small amounts of hazardous waste related to vehicle and equipment maintenance, which require specific handling and disposal protocols. Potential sources of hazardous waste generation are shown in the following table:

Waste	Physical State	Largest Container	Maximum Quantity
Waste Motor Oil	Liquid	55 gallons	110 gallons
Waste Antifreeze	Liquid	55 gallons	110 gallons
Waste Absorbent	Solid (soils or absorbent)	One 55-gallon drum (250 pounds)	2 drums (500 pounds)
Spent Carbon	Solid	5 Tons	20 Tons
Spent Bag Filters	Solid	1 bag	20 bags

In addition to the onsite hazardous waste listed in the table above, the proposed onsite laboratory may generate minimal amounts of hazardous waste which will be identified, containerized, segregated, labeled, and then transported offsite to a licensed disposal facility.

The wastes accepted at the proposed facility will include produced water, drilling waste, oily sludge, and other petroleum-related wastes which are managed as non-hazardous solid wastes under Federal law, pursuant to the Oil Exploration and Production (E&P) Wastes exemption codified in Title 40 CFR, section 261.4(b)(5), and included, with limitations, in Title 22 CCR sections 66261.4(b)(2) and 66261.24(a)(1). The exemption applies in California if the waste displays the toxicity characteristics for hazardous waste based solely on the Toxicity Characteristic Leaching Procedure, as provided under 22 CCR, § 66261.24.

In order for RI-NU to qualify as a non-hazardous wastewater treatment facility, all waste proposed to be accepted and processed at the facility will be characterized to determine whether it is hazardous in accordance with the facility's Waste Analysis Plan (WAP) (Attachment 27), prepared by Ensaf, Inc., dated April 2017, in accordance with the Environmental Health Standards for the Management of Hazardous Waste, codified in the CCR, Title 22 section 66264.13, and in accordance with Title 40 of the CFR, Part 264 (40 CFR 264). The WAP therefore is the pivotal activity for properly ensuring that the wastewater treatment facility does not accept and process hazardous materials and complies with the applicable regulations for proper waste treatment, storage, or disposal

The applicant's draft WAP is significantly different than the previous operator's waste acceptance practices in that the proposed operation will now include an onsite laboratory to conduct internal sample analyses to compare to third party analytical submitted by a generator (contractor) *prior* to receiving the waste streams at the facility. If the profile of the waste streams proves acceptable to accept and process at the facility, the generator will transfer the waste to the facility where another sample of the waste stream will be tested in the operator's onsite laboratory to compare to the original waste stream sample supplied by the generator. If the waste load fails either the physical inspection or the analytical check, it is rejected and the generator will be required to leave the facility without unloading the waste. These practices include checks and balances (that were not implemented by the previous operator) to ensure that the proposed operation does not accept a waste stream that is a hazardous waste. EHD reviewed the draft WAP and determined that it has been prepared in compliance and accordance with the federal and state regulations.

In order to ensure potential impacts from hazardous wastes generated at the facility are less than significant, the following conditions of approval will be required to be satisfied by the Permittee prior to, and for the duration of, the operation of the facility:

- (1) Operate the wastewater treatment facility in compliance with federal, state, and local regulations pertaining to the safe storage, handling, labeling and disposal of hazardous wastes generated onsite;
- (2) Submit a final WAP to the Planning Division, in consultation with EHD, for review and approval prior to operation of the facility;
- (3) Maintain a hazardous waste generator EPA I.D. number issued by the California Department of Toxic Substances Control in the event hazardous waste is generated at the facility; and,
- (4) Obtain a hazardous waste generator permit from EHD/CUPA (Refer to Section A.10, Table A, above).

As described in Section B.20(a) above, the Permittee will also be required, as a mitigation measure to prepare a Chemical Incompatibility Training Plan (Refer to M-3), which will

include policies that (1) prohibit receipt of wastes in totes or drums; (2) prohibit pumping of drums or totes into any vacuum trucks; and, (3) require consistent identification and tracking of the potential for chemical incompatibilities. This training plan will supplement the other actions to be taken (e.g., SPCC Plan, WAP, Risk Management Plan) to reduce the risk posed by the facility to the public and the environment.

With the implementation of the foregoing conditions of approval, project-specific and cumulative impacts related to hazardous waste will be less than significant.

**20b-2.** Through compliance with federal, state and local laws, the proposed project will be consistent with the applicable General Plan Goals and Policies for Item 20(b) of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>21. Noise and Vibration</b>								
<b>Will the proposed project:</b>								
a) Either individually or when combined with other recently approved, pending, and probable future projects, produce noise in excess of the standards for noise in the Ventura County General Plan Goals, Policies and Programs (Section 2.16) or the applicable Area Plan?		X				X		
b) Either individually or when combined with other recently approved, pending, and probable future projects, include construction activities involving blasting, pile-driving, vibratory compaction, demolition, and drilling or excavation which exceed the threshold criteria provided in the Transit Noise and Vibration Impact Assessment (Section 12.2)?		X				X		
c) Result in a transit use located within any of the critical distances of the vibration-sensitive uses listed in Table 1 (Initial Study Assessment Guidelines, Section 21)?	X				X			

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
d) Generate new heavy vehicle (e.g., semi-truck or bus) trips on uneven roadways located within proximity to sensitive uses that have the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria of the Transit Use Thresholds for rubber-tire heavy vehicle uses (Initial Study Assessment Guidelines, Section 21-D, Table 1, Item No. 3)?		X				X		
e) Involve blasting, pile-driving, vibratory compaction, demolition, drilling, excavation, or other similar types of vibration-generating activities which have the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria provided in the Transit Noise and Vibration Impact Assessment [Hanson, Carl E., David A. Towers, and Lance D. Meister. (May 2006) Section 12.2]?		X				X		
f) Be consistent with the applicable General Plan Goals and Policies for Item 21 of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

21a., 21b., and 21e. According to the Ventura County Initial Study Assessment Guidelines, noise is defined as any unwanted sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. Noise impacts can occur during the construction and/or operational phases of a project.

The methodology used in determining whether or not a project will result in a significant noise impact is to first determine whether the proposed use is a "Noise Sensitive Use" or a "Noise Generator." Noise sensitive uses are dwellings, schools, hospitals, nursing homes, churches and libraries. The proposed use is therefore considered a noise generating use.

The Initial Study Assessment Guidelines and, by reference, the Ventura County General Plan Goals, Policies and Programs Noise Policy 2.16.2-1, set forth the maximum noise levels that are appropriate for noise sensitive uses/residential districts, which are as follows:

- a. Leq1H of 55dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.
- b. Leq1H of 50dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.
- c. Leq1H of 45dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.

The existing facility is located at 815 Mission Rock Road, in the unincorporated area of Santa Paula. SR 126 is located 0.3 miles to the north and the Santa Clara River basin runs east-west approximately 0.4 miles to the south. The existing facility is located in an industrially-zoned area and is surrounded by both industrial and agricultural land uses. In addition to the proposed project, other potential noise generating land uses (i.e., industrial properties) are located to the east and south. Agricultural land uses are not expected to generate significant noise levels and these lands are located immediately west and north of the project site.

### **Operational Noise**

The applicant retained Sespe Consulting, Inc. to prepare a Noise Impact Assessment (NIA), dated May 17, 2017 (Attachment 28) to quantify and determine the significance of noise impacts associated with the proposed modifications to the existing wastewater treatment facility. The NIA identified three sensitive receptors in the immediate vicinity of the project site. Other receptors in the surrounding area are further away and are not expected to experience project noise. Receptor 1 (R1) is a two-story residential dwelling located approximately 40 feet southwest of the project site at 907 Mission Rock Road in the agriculturally-zoned area. Receptor 2 (R2) is an onsite caretaker dwelling unit for an existing vehicle salvage storage yard located approximately 40 feet northeast of the project site located at 734 Mission Rock Road in the industrial zoned area. Receptor 3 (R3) is a one-story residential farmworker dwelling located approximately 190 feet northwest of the project site at Pinkerton Road in the agricultural zoned area. Receptor 2 (i.e., onsite caretaker dwelling unit) is not considered a “noise sensitive” residential dwelling since it has been approved as accessory to the industrial use on the property. Although typically industrial noise has the potential to adversely affect dwellings, dwellings for caretakers of industrial sites are not considered “noise sensitive” as they are expected to be subject to noise levels that are typical of industrial sites and are generally higher than those experienced within residentially-zoned and developed areas. The locations of these three receptors are shown in Attachment 16 of the NIA.

The applicant proposes to install perimeter landscape screening trees and reconfigure the current layout of the facility so that the processing operations and employee vehicle parking are closer to the center, eastern and northern portions of the property in order to minimize noise impacts on sensitive receptor R1. The southwestern portion of the project site will be used for administrative office functions. The proposed modification to the CUP requests installation of 26,862 sq. ft. (9.8 percent of the CUP area) of landscaping, which will include 128 new trees and 183 new shrubs and low-growing plants as illustrated on

the applicant's conceptual Landscape and Planting Plan (Attachment 8). Landscaping will be located within the new parking lot area, adjacent to the proposed office building, and along the perimeter of the project site. All proposed landscaping will be installed prior to use inauguration of the requested modified CUP.

The NIA determined that the loudest noise generating activity at the facility is expected to be truck deliveries, including backup alarms. However, truck deliveries will be limited to daytime hours only and are not expected to exceed daytime noise thresholds as specified in the Initial Study Assessment Guidelines. The NIA also determined that the proposed activity that may increase noise impacts from baseline conditions is the extension of facility operating hours from 5:00 a.m. to 11:00 p.m. to 24 hours per day. Truck deliveries will not occur during the nighttime hours (after dark). Nighttime operations are currently not allowed, except for emergency situations. Therefore, the NIA primarily evaluates noise impacts resulting from proposed nighttime onsite processing operations at the facility (e.g. the use of the processing machinery).

The NIA concludes that the nighttime operations that may generate noise include the equipment used to process waste materials (pumps, centrifuges), a front-loader, and employee arrival and parking. The noise from evening and nighttime operations will primarily be limited to running electric pumps and operating equipment. The applicant also proposes to increase the onsite facility employees from 15 to 40 total. The employees will work in three separate, eight-hour shifts. The noise generated by employee vehicles parking onsite during each of the three specific shifts is also evaluated in the NIA.

To quantify the existing ambient noise environment experienced by nearby receptors, two long-duration (24-hour) reference noise measurements were conducted at the project site from April 12, 2017 to April 14, 2017. The noise measurements were recorded using Quest DL SoundPro, Type 2 noise meters. The noise meter was programmed in "slow" mode, in "A" weighted form, and one-minute logging for the entire measurement duration.

In order to characterize the project industrial noise sources, the NIA used a combination of noise monitoring and documented Ventura County reference data to determine the noise level generated by proposed nighttime industrial operations. On April 24, 2017, noise monitoring was conducted at a different wastewater treatment facility, the Patriot Environmental Services' Anaheim facility. The industrial source noise measurements collected at the Anaheim facility were not used to represent noise generated by the entirety of the proposed project facility, but rather to confirm the contribution of singular pieces of industrial equipment (i.e., tanks, centrifuges, pumps). Similarities between the size, throughputs, number of trucks, hours of operation, etc., between the proposed facility and the Anaheim facility have no bearing on the results of the modelled noise impacts. However, the Anaheim facility also receives and treats non-hazardous wastewater using many of the same processes and equipment (i.e., mixing tanks, pumps) that are proposed for use at the project site and, therefore, the recorded noise levels could be utilized to accurately model the industrial noise generated at the proposed facility in Santa Paula.

Measurements at the Anaheim facility were collected at a set distance (e.g., 13 feet and 5 feet) while each individual piece of equipment was operating at full power on its own (i.e., no interference from other operations) over a given time duration. Using these source measurements, the equipment noise levels were then input into the SoundPLAN modeling software to determine the proposed facility's overall operational noise impacts at nearby receptors. As described in the NIA, using the data measured in Anaheim, a total of nine point sources, used to represent louder mixing tanks/dewatering centrifuges, and five area sources, used to represent quieter pumps, liquid transfer stations, and general industrial noise, were input into the SoundPLAN model. Mobile equipment (e.g., front-end loaders) noise was also input into the model to represent area sources, using reference noise levels provided within Ventura County's Construction Guidelines.

Noise measurements of a centrifuge dewatering unit operating at a similar wastewater processing facility in Ventura County were also utilized. For mobile equipment (i.e., front-end loaders) noise levels, documented reference noise source information from the Ventura County Construction Guidelines were utilized. Based on the results of the industrial source nighttime prediction model for the three receptors near the facility (R1, R2, and R3), all impacts are below the applicable nighttime significance threshold. Thus, the NIA concludes project daytime and evening industrial noise impacts are expected to be reduced or remain unchanged as a result of the proposed modifications. Project nighttime industrial noise impacts are less than significant at the nearby sensitive receptors without mitigation.

### **Construction Noise**

Standardized federal or state criteria have not been adopted for assessing construction noise impacts. Therefore, municipal planning criteria are generally developed and applied on a project-specific basis. Construction project noise criteria take into account the existing noise environment, the time-varying noise during the various phases of construction activities, the duration of the construction, and adjacent land uses.

Specific construction noise limits for noise-sensitive locations are not currently specified in the Ventura County General Plan or administrative code of the County of Ventura. Therefore, the Construction Noise Threshold Criteria and Control Plan (Attachment 29), adopted by the Board of Supervisors on November 2005 and amended in July 2010, is intended to establish construction noise thresholds and standard noise monitoring and control measures. These threshold criteria, monitoring and control measures shall be applied to all discretionary development projects, including the subject project.

Much of the facility is already built-out. However, the applicant proposes to remove some of the old tankage and processing equipment, and replace it with new equipment to match the proposed waste processing design. No new construction requiring significant foundation work or other large-scale development is proposed as part of the proposed modification. The proposed reconfiguration of the facility will occur intermittently over a six to nine-month period, will be temporary in nature, and is not expected to generate

construction noise levels in excess of what the existing permitted facility generated under CUP 960 (as modified by LU06-0011). During daytime hours, construction work for the project shall be in compliance with the County of Ventura's Construction Noise Threshold Criteria, which normally prohibits evening or nighttime construction activity in areas of noise-sensitive receptors<sup>24</sup>. Since the project site is located within 40 feet of a noise-sensitive use, evening and nighttime construction activities will be prohibited. However, in the event a particular type of construction activity is deemed necessary and is allowed by the Planning Director, reduced noise threshold criteria are provided for construction that must occur during evening and/or nighttime hours. Emergency construction work is exempt from these construction noise thresholds.

**Daytime Construction** - Daytime (7:00 a.m. to 7:00 p.m. Monday through Friday, and from 9:00 a.m. to 7:00 p.m. Saturday, Sunday and local holidays) generally means any time period not specifically defined as a more noise-sensitive time period. The daytime construction noise threshold criteria are given in Figure 4 of the Construction Noise Threshold Criteria (and shown below). Depending on project duration, the daytime noise threshold criteria shall be the greater of the fixed Leq(h) limit (which includes non-construction evening and nighttime noise) or the measured ambient Leq(h) plus 3 dB.

**Figure 4. Daytime Construction Activity Noise Threshold Criteria**

Construction Duration Affecting Noise-sensitive Receptors	Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA <sup>1,2</sup>
0 to 3 days	75	Ambient Leq(h) + 3 dB
4 to 7 days	70	Ambient Leq(h) + 3 dB
1 to 2 weeks	65	Ambient Leq(h) + 3 dB
2 to 8 weeks	60	Ambient Leq(h) + 3 dB
Longer than 8 weeks	55	Ambient Leq(h) + 3 dB

Note 1. The instantaneous L<sub>max</sub> shall not exceed the NTC by 20 dBA more than 8 times per daytime hour.  
Note 2. Local ambient Leq measurements shall be made on any mid-week day prior to project work.

Because of the close proximity of a noise-sensitive use to the project site, the Permittee will be required, as a condition of approval, to provide the potentially affected community (within 300 feet of project), a "Hot Line" telephone number, that is attended during active construction working hours for use by the public to register complaints. Each noise complaint that is logged with the Permittee shall be forwarded to Planning Division staff who will document each complaint and determine whether additional noise mitigation or adjustments to the hours and days of construction is warranted during the construction phase of the project. If the construction noise threshold criteria are *not* exceeded, impacts from the construction of the wastewater treatment facility will be less than significant and temporary in nature.

**21c.** The Ventura County Initial Study Assessment Guidelines define vibration as "a motion that repeatedly reverses itself." The most common type of environmental impact

<sup>24</sup> The closest noise-sensitive use is located within 40 feet of the project site.

involving vibration consists of ground vibration, which is the periodic displacement of earth, which creates vibration waves that move through soil and rock strata, foundations of nearby buildings, and then throughout the parts of the building structure. Common sources of ground-borne vibrations are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating earthmoving equipment. No new construction requiring significant foundation work or other large-scale development is proposed as part of the proposed modification. The nearest train station is located approximately 11 miles away in the City of Ventura. At that distance, it is unlikely that individuals will utilize railways to access the site and thus unlikely that there will be an increase in railroad trips to accommodate commuters to the project site. Therefore, the proposed project does not have the potential to generate ground born vibrations.

21d. Truck delivery hours on Monday through Friday will be extended for an additional two-hour period, from 5:00 p.m. to 7:00 p.m. The number of haul truck deliveries will not change from what is currently permitted under CUP 960 (as modified by LU06-0011), which authorizes up to 500 trucks per week. This represents a negligible change in noise levels given that the additional hours are during the daytime period as established in the Initial Study Assessment Guidelines, and the total number of trips will not increase. Therefore, based upon the information presented in the NIA, the increase in delivery hours without an increase in the number of deliveries will actually decrease the number of trips per hour and the peak hour noise level, which is the basis of significance determination. As a result, the noise impacts from the increased hours of truck deliveries are expected to be less than significant.

21f. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 21 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>22. Daytime Glare</b>								
<b>Will the proposed project:</b>								
a) Create a new source of disability glare or discomfort glare for motorists travelling along any road of the County Regional Road Network?	X				X			
b) Be consistent with the applicable General Plan Goals and Policies for Item 22 of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**22a.** The Ventura County Initial Study Assessment Guidelines describe daytime glare as intense light that is blinding or discomforting to humans, particularly motorists. Conditions that create daytime glare are typically caused by the reflection of sunlight from highly reflective surfaces at or above eye level. Daytime glare is caused by the reflective surfaces of buildings, structures, or facilities with materials such as metal or glass. The proposed project does not include equipment and buildings that have reflective surfaces. The existing and proposed equipment and buildings consist of materials such as wood, painted (non-gloss) panels, and non-gloss/reflective metals. Thus, the proposed project will have no glare impact.

**22b.** Given that there are no glare impacts, the proposed project is consistent with the applicable General Plan Goals and Policies for Item 22 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>23. Public Health (EHD)</b>								
<b>Will the proposed project:</b>								
a) Result in impacts to public health from environmental factors as set forth in Section 23 of the Initial Study Assessment Guidelines?		X				X		
b) Be consistent with the applicable General Plan Goals and Policies for Item 23 of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

**23a.** The Ventura County Initial Study Assessment Guidelines describe a public health issue as a human health related issue such as, but not limited to, vectors, bioaerosols and other pathogens or environmental factors that may pose a potential hazard to public health. EHD has reviewed the proposed project and has determined that there may be impacts to public health due to onsite storage and handling of hazardous materials and wastes; however, the operator's compliance with applicable federal, state, and local regulations pertaining to the storage, handling and disposal of hazardous materials and wastes will reduce potentially significant impacts to a level of less than significant. Implementation of the conditions of approval and mitigation measures outlined in Section B.20(a) and (b) above, will reduce any potentially significant impacts as it related to public health to a level of less than significant.

The proposed project may cause a public health impact related to breeding and harborage of vectors of disease, including insects (i.e., mosquitoes). As a condition of approval, the Permittee will be required to properly manage standing water to ensure the site does not contribute to the breeding and harborage of potential vectors of disease, or create a public nuisance. Implementation of this condition of approval will reduce the potentially significant impacts related to breeding and harborage of vectors of disease and thus the impacts will be less than significant.

23b. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 23 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>24. Greenhouse Gases (GHG) (VCAPCD)</b>								
<b>Will the proposed project:</b>								
a) Result in environmental impacts from greenhouse gas emissions, either project specifically or cumulatively, as set forth in CEQA Guidelines §§ 15064(h)(3), 15064.4, 15130(b)(1)(B) and -(d), and 15183.5?		X				X		

### Impact Discussion:

24a. Climate change is the observed increase in the average temperature of earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during past ice ages. According to the United Nations' Intergovernmental Panel on Climate Change (IPCC) "*Fourth Assessment Report, Climate Change 2007*," most of the observed increase in global average temperatures since the mid-20<sup>th</sup> century is very likely due to the observed increase in anthropogenic (human-induced) concentrations of these three gases, collectively known as Greenhouse Gases (GHGs), which are gases that absorb and re-emit infrared radiation into the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

Due to the global nature of the effects of GHG emissions, the primary CEQA concern with GHG emissions is the cumulative impact of a project's incremental GHG emissions when

viewed in connection to past, current and probable future project GHG emissions. The Ventura County APCD has not adopted a GHG threshold of significance from projects subject to the County's discretionary land use permitting authority. However, APCD has indicated a preference for GHG significance thresholds that are consistent with those of the South Coast AQMD because its jurisdiction is adjacent to that of Ventura County APCD. South Coast AQMD considers stationary source emissions over 10,000 metric tons carbon dioxide equivalent per year (MTCO<sub>2</sub>e/Yr) to be significant for industrial projects for stationary sources and emissions over 3,000 MTCO<sub>2</sub>e/Yr to be significant for residential/commercial projects for mobile emissions (South Coast Interim GHG Threshold Board Letter). The County has routinely applied a 10,000 MTCO<sub>2</sub>e/Yr threshold of significance for stationary emissions to such industrial projects, in accordance with CEQA Guidelines section 15064.4(a)(2) and, for this project, will apply the 3,000 MTCO<sub>2</sub>e/Yr threshold for mobile emissions. Most GHG emissions from industrial facilities (like the proposed wastewater treatment facility) are generated from stationary sources and related activities such as vehicle trips.

### **Stationary Source Emissions**

Stationary sources are divided into two categories: point and area sources. Point sources consist of a single emission source with an identified point at a facility. Facilities could have multiple point sources located onsite. Point sources are usually associated with manufacturing and industrial processes, such as boilers, spray booths or degreasers. Area sources are small emission sources that are widely distributed, but may have substantial cumulative emissions, such as residential water heaters, small engines, and consumer products. Stationary source facilities that propose new or modified equipment, such as the proposed wastewater treatment facility, will need to obtain or modify air permits issued by the APCD. APCD has confirmed that the RI-NU facility must undergo a new permit processing review due to replacement of its previous emission units, which will trigger compliance with APCD Rule 26, New Source Review, and Best Available Control Technology (BACT) for ROC, NO<sub>x</sub>, PM-10, and SO<sub>x</sub>. Rule 26.2.A details the BACT requirements for new, replacement, modified, or relocated emissions units.

The stationary GHG emissions from the RI-NU facility will be negligible, as this facility is not producing oilfield liquids but rather processing oilfield tank bottom waste that would have off-gassed most if not all GHGs contained in the oil waste liquid stream, either during production, separation, or delivery to the facility. In addition, the former facility (SCWW) did not have any CO<sub>2</sub>-combustion equipment permitted with APCD and the new facility is not expected to have any either (to date, APCD has not received a permit application for CO<sub>2</sub>-combustion equipment). It is important to note that GHG compounds found in oilfield production are attributed to methane, CH<sub>4</sub>, not carbon dioxide CO<sub>2</sub>. However, for "worse-case scenario" purposes, stationary GHG emissions were calculated based on the projected annual processing throughput of 150,000 barrel of waste provided by the facility's consultant (0.32 tons ROC per year; see Section B.1. Air Quality, Regional Air Quality, for ROC calculations) and the organic profile for crude oil evaporation determined by CARB. As such, the maximum CH<sub>4</sub> emissions are estimated to be 0.03 ton per year or 0.76 MTCO<sub>2</sub>e/Yr which is negligible, as predicted, and well below adopted significance

thresholds of 10,000 MTCO<sub>2</sub>e/Yr for stationary sources. The calculated GHG stationary source emissions are based on assuming 0.885 for the Organic Reactive Fraction (FROG), 0.088 for CH<sub>4</sub> weight fraction in crude oil (taken from CARB organic profile #297 Crude oil evaporation- vapor composite), and CH<sub>4</sub>'s Global Warming Potential (GWP) of 28.

### Mobile Source Emissions

The APCD has not adopted any numerical GHG thresholds of significance for mobile emission for any type of land use project. Because the APCD has not yet adopted a GHG threshold of significance for mobile emissions, the APCD will use the same GHG threshold of significance as the South Coast AQMD in regard to evaluating mobile emissions. The South Coast AQMD considers emissions over 3,000 MTCO<sub>2</sub>e/Yr to be significant for residential/commercial projects for mobile emissions.

The RI-NU facility will generate mobile emissions from employee commuter vehicle trips and commercial waste delivery/outgoing truck trips. The total GHG mobile emissions for the proposed project are derived by using the emissions-estimation modeling program CalEEMod Version 2016.3.2. The model calculated emissions using the project's transportation changes above the baseline setting from the existing CUP. Based on the applicant's project description (including information contained in the applicant's October 19, 2015<sup>25</sup> Trip Generation Analysis, prepared by Associated Transportation Engineers), there will be 50 new daily employee commuter one-way vehicle trips (existing CUP limits daily employee vehicle trips to 30 one-way trips vs. proposed total of 80 one-way trips). There is no proposed increase to the CUP limits for average daily round-trips (166.6), average trucks per day (83.3), and total weekly truck trips (500). Truck deliveries to and from the facility are not proposed to occur on Sundays, excluding emergencies with approval of the Planning Director. Based on this data, the APCD calculated the total GHG emissions for the proposed project from mobile sources at 59.4 MTCO<sub>2</sub>e/Yr, which is well below the 3,000 MTCO<sub>2</sub>e/Yr GHG threshold of significance for mobile emissions in residential/commercial projects. The stationary emissions calculated at 0.73 MTCO<sub>2</sub>e/Yr is also well below 10,000 MTCO<sub>2</sub>e/Yr GHG threshold of significance for stationary sources for industrial projects as adopted by the South Coast AQMD. Therefore, project impacts would be less than significant for GHG emissions.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>25. Community Character (Plng.)</b>								
<b>Will the proposed project:</b>								

<sup>25</sup> The October 19, 2015 Trip Generation Analysis was updated on April 25, 2017.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that is incompatible with existing land uses, architectural form or style, site design/layout, or density/parcel sizes within the community in which the project site is located?	X				X			
b) Be consistent with the applicable General Plan Goals and Policies for Item 25 of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**25a.** Pursuant to the Ventura County Initial Study Assessment Guidelines, any project has the potential to have a significant impact on community character, if it: (1) inconsistent with any policies of the General Plan or Area Plan relating to community character; or, either individually, or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, will introduce physical development that is incompatible with existing land uses, architectural form or style, site/design layout, or density/parcel sizes within the community in which the project is located.

The project site is located within an approximately 95-acre industrial zoned area in the unincorporated area of Santa Paula, commonly referred to as the "Mission Rock Road Community". The surrounding development consists of industrial uses to the east and south (i.e., oil/gas production facility, auto salvage and wrecking yards, and contractor's service and storage yards), and agricultural crop production to the north and west of the project site. The agricultural and industrial interface has existed since the 1950s. There is a two-story residence located on an approximately 13,000-sq. ft. parcel on agriculturally zoned land situated adjacent to and southwest of the project site. Ventura County Building and Safety Division permit records indicate that this residence was constructed in 2009. Single-family dwellings in and around the industrial area are sparse and consist mostly of onsite caretaker dwellings for the supervision of the industrial yards and businesses in the area.

The project site is located with the General Industrial Zone, 10,000-sq. ft. minimum lot size ("M3 – 10,000-sq. ft.") with a General Plan Designation of Existing Community. The proposed project will encompass a total of 6.56 acres. The project parcel size meets the minimum lot size of the General Industrial Zone. The proposed use is consistent with the intent of the M3 zone and is an allowed use in this zone, pursuant to NCZO § 8105-5.

The predominant architectural style within the Mission Rock Road Community is metal warehousing and prefabricated/modular buildings. The proposed project includes a request to install four modular buildings that will include a neutral-color exterior finish which is consistent with NCZO section 8109-3.4.1, which requires that the buildings in the M3 zone have “exterior surfaces constructed or faced with a stainless steel, aluminum, painted, baked enamel, or similarly finished surface”. Thus, the architectural style of the proposed buildings is found to be consistent with the existing industrial community and the regulations of the NCZO.

The proposed project will be conditioned to require adequate off-street parking and loading facilities, adequate buffering, setbacks and landscaping in order to minimize adverse impacts related to noise, glare and odors on adjoining non-industrial zoned properties (i.e., adjacent agricultural operations). Therefore, with the implementation of specific conditions of approval to address these issues (site maintenance, facility component painting, operating hours, fugitive dust control, and landscaping), the proposed project will be developed consistent with: the standards established for the General Industrial Zone and applicable General Plan Policies; the existing development on the surrounding properties; and, the character of the community.

Based on the above discussion, there are no project-specific or cumulative impacts related to community character.

**25b.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 25 of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>26. Housing (PIng.)</b>								
<b>Will the proposed project:</b>								
a) Eliminate three or more dwelling units that are affordable to: <ul style="list-style-type: none"> <li>• moderate-income households that are located within the Coastal Zone; and/or,</li> <li>• lower-income households?</li> </ul>	X				X			
b) Involve construction which has an impact on the demand for additional housing due to potential housing demand created by construction workers?		X				X		
c) Result in 30 or more new full-time-equivalent lower-income employees?		X				X		

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
d) Be consistent with the applicable General Plan Goals and Policies for Item 26 of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

**26a.** Pursuant to the Ventura County Initial Study Assessment Guidelines, any project that will eliminate existing dwelling units will have an impact on the existing housing stock. There are no existing dwelling units on the project site and, thus, no dwelling units will be eliminated as a result of the proposed project. Therefore, there is no project-specific and cumulative impact on the existing housing stock.

**26b.** As stated in the Ventura County Initial Study Assessment Guidelines, any project that involves construction has an impact on the demand for additional housing due to potential housing demand created by construction workers. However, construction worker demand is a less than significant project-specific and cumulative impact because construction work is short-term and there is a sufficient pool of construction workers within Ventura County and the Los Angeles metropolitan regions.

26c. General Plan Policy 3.4.2-9 states, in part, that employment-generating discretionary development resulting in 30 or more new full-time and full-time equivalent employees shall be evaluated to assess the project's impact on lower-income housing demand within the community it is located or a within 15-minute commute distance of the project. The conditions of approval of CUP 960 authorize 15 full-time employees at the facility. The proposed modified CUP will authorize an additional 25 full-time employees, for a maximum total of 40 full-time employees. The additional 25 employees are deemed new. Since the proposed project will not result in 30 or more *new* full-time employees, the proposed project has a less than significant project-specific and cumulative impact on demand for housing.

**26d.** The proposed project is consistent with General Plan Goals and Policies for Item 26 of the Ventura County Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(1). Transportation & Circulation - Roads and Highways - Level of Service (LOS) (PWA)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Cause existing roads within the Regional Road Network or Local Road Network that are currently functioning at an acceptable LOS to function below an acceptable LOS?		X				X		

### Impact Discussion:

**27a(1)-a.** The proposed project will not impact the nearest County-maintained road(s) because the Mission Rock Road community where the project is located is accessed from a state highway (i.e., Highway 126) and private roads (i.e., Briggs and Mission Rock Roads).

However, the proposed project will generate additional traffic on the Regional Road Network. To address the cumulative adverse impacts of traffic on the Regional Road Network, Ventura County Traffic Impact Mitigation Fee (TIMF) Ordinance 4246 and General Plan (GP) Policy 4.2.2 requires, as a condition of approval, that the Transportation Department of the Public Works Agency collect a TIMF from the Permittee for the proposed project prior to the issuance of a Zoning Clearance for Use Inauguration of the facility. The proposed project is subject to this Ordinance. With payment of the TIMF, the Level of Service of the existing roads will remain consistent with the County's General Plan.

The California Department of Transportation (Caltrans) reviewed the proposed project and the applicant's Traffic Generation Analysis, prepared by Associated Transportation Engineers, dated October 19, 2015, and updated on April 25, 2017, and determined that the project is not expected to result in a direct adverse impact to the existing state transportation facilities (Attachment 30).

Therefore, adverse traffic impacts relating to the level of service will be less than significant.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(2). Transportation & Circulation - Roads and Highways - Safety and Design of Public Roads (PWA)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Have an Adverse, Significant Project-Specific or Cumulative Impact to the Safety and Design of Roads or Intersections within the Regional Road Network (RRN) or Local Road Network (LRN)?		X				X		

### Impact Discussion:

27a(2)-a. The project site is adjacent to a private road, not a County-maintained road. The project, as proposed, does not have the potential to alter the level of safety of the nearest County-maintained road. Therefore, adverse traffic impacts relating to safety/design will be less than significant.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>27a(3). Transportation &amp; Circulation - Roads &amp; Highways – Safety &amp; Design of Private Access (VCFPD)</b>								
a) If a private road or private access is proposed, will the design of the private road meet the adopted Private Road Guidelines and access standards of the VCFPD as listed in the Initial Study Assessment Guidelines?	X				X			
b) Will the project be consistent with the applicable General Plan Goals and Policies for Item 27a(3) of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

27a(3)-a. The private road access to the project site is existing and meets the adopted Private Road Guidelines and access standards of the VCFPD. Thus, there are no private road access impacts.

27a(3)-b. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 27a(3) of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>27a(4). Transportation &amp; Circulation - Roads &amp; Highways - Tactical Access (VCFPD)</b>								
<b>Will the proposed project:</b>								
a) Involve a road or access, public or private, that complies with VCFPD adopted Private Road Guidelines?	X				X			
b) Be consistent with the applicable General Plan Goals and Policies for Item 27a(4) of the Initial Study Assessment Guidelines?	X				X			

**Impact Discussion:**

27a(4)-a. No new private roads are proposed. There are public and private roads serving the project site. All of these roads are in full compliance with the County Public Road Standards and/or VCFPD Private Road Standards, as applicable.

27a(4)-b. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 27a(4) of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>27b. Transportation &amp; Circulation - Pedestrian/Bicycle Facilities (PWA/Plng.)</b>								
<b>Will the proposed project:</b>								
1) Will the Project have an Adverse, Significant Project-Specific or Cumulative Impact to Pedestrian and Bicycle Facilities within the Regional Road Network (RRN) or Local Road Network (LRN)?		X				X		
2) Generate or attract pedestrian/bicycle traffic volumes meeting requirements for protected highway crossings or pedestrian and bicycle facilities?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 27b of the Initial Study Assessment Guidelines?		X				X		



Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Individually or cumulatively, substantially interfere with an existing railroad's facilities or operations?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 27d of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

27d-1. According to the Initial Study Assessment Guidelines, a project would normally have a significant impact on a railroad if it would individually or cumulatively substantially interfere with an existing railroad's facilities. The project site is not accessed by crossing over a railroad grade or any railroad access easements. Thus, the proposed project will have no impact on a railroad facility or operation.

27d-2. The proposed project is in consistent with the applicable General Plan Goals and Policies for Item 27d of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>27e. Transportation &amp; Circulation – Airports (Airports)</b>								
<b>Will the proposed project:</b>								
1) Have the potential to generate complaints and concerns regarding interference with airports?	X				X			
2) Be located within the sphere of influence of either County operated airport?	X				X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 27e of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

27e-1. and 27e-2. There are four airports in Ventura County which include County-owned and operated airports at Camarillo and Oxnard, a private airport at Santa Paula and the federal Point Mugu Naval Air Station and runway at San Nicholas Island. The Santa Paula Airport, which is located within the city limits of the City of Santa Paula and south of SR



Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
1) Substantially interfere with, or compromise the integrity or affect the operation of, an existing pipeline?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 27g of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**27g-1.** According to the Initial Study Assessment Guidelines, a project would have a significant impact if it would substantially interfere with, or compromise the integrity or affect the operation of, an existing pipeline used for the transportation of petroleum, petroleum products, natural gas, etc. The Planning Division GIS data layer indicates that there are no such pipelines that intersect the project site and, thus, the proposed project is not expected to create impacts to any existing oil and gas pipelines. Therefore, the proposed project will have no adverse impacts to natural gas or petroleum pipelines.

**27g-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 27g of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>28a. Water Supply – Quality (EHD)</b>								
<b>Will the proposed project:</b>								
1) Comply with applicable state and local requirements as set forth in Section 28a of the Initial Study Assessment Guidelines?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 28a of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**28a-1.** Domestic water service for the existing CUP boundary area is provided by the City of Santa Paula, a public water system. The City of Santa Paula confirmed that there is an existing 1.5-inch meter (Meter #11314216) at the project site, with service initiated on May 31, 1996.

The City of Santa Paula's source of water is 100 percent groundwater, pumped from the Santa Paula Basin. The City of Santa Paula Water System is regulated and permitted by the California State Water Resources Control Board, Division of Drinking Water (permit number CA5610011), and has an approved Urban Water Management Plan with the California Department of Water Resources. Since domestic water is being provided by an approved water purveyor (i.e., City of Santa Paula), the proposed project will not have an adverse impact on water quality.

**28a-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 28a of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>28b. Water Supply – Quantity (WPD)</b>								
<b>Will the proposed project:</b>								
1) Have a permanent supply of water?		X				X		
2) Either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that will adversely affect the water supply - quantity of the hydrologic unit in which the project site is located?		X				X		
3) Be consistent with the applicable General Plan Goals and Policies for Item 28b of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

**28b-1.** Water supply for the existing facility is currently provided by the City of Santa Paula as evidenced by water use statements provided by the applicant and verified by the City of Santa Paula. Domestic water will continue to be supplied by the City of Santa Paula, which is an Urban Water Purveyor with an approved Urban Water Management Plan with the State of California. Based on this information, the proposed project has a permanent supply of water and, thus, the proposed project will have a less than significant impact on water supply quantity.

Because the proposed project includes the expansion of the facility's operational boundary by 1.67 acres (the facility's operational boundary will encompass a total of 6.56 acres), the City of Santa Paula requires that an updated Water Will-Serve letter be

obtained by the Permittee prior to the issuance of a Zoning Clearance for Construction. A source of water supplied by a city shall be determined to constitute a permanent supply of water pursuant to the Ventura County Initial Study Assessment Guidelines. The City of Santa Paula will continue to provide a permanent supply of domestic water to the project site. Therefore, the proposed project will not have an impact on domestic water supply.

**28b-2.** Implementation of the proposed project will result in an estimated reduction of 4.0 AFY from average historical water use as evidenced in a letter from the applicant, dated January 22, 2018 and updated on January 4, 2019. The proposed project will not, either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that will adversely affect water supply quantity. Thus, the proposed project will have a less than significant impact on water supply quantity.

**28b-3.** The proposed project is consistent with the applicable General Plan and Policies for Item 28b of the Initial Study Assessment Guidelines and is considered to have a less than significant impact on water supply quantity.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>28c. Water Supply - Fire Flow Requirements (VCFPD)</b>								
<b>Will the proposed project:</b>								
1) Meet the required fire flow?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 28c of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**28c-1.** The proposed project is served water by a public water system, the City of Santa Paula, that provides the required fire flow in accordance with Ventura County Waterworks Manual and the VCFPD Fire Code. Therefore, the proposed project will not have an adverse impact on fire flow.

**28c-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 28c of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>29a. Waste Treatment &amp; Disposal Facilities - Individual Sewage Disposal Systems (EHD)</b>								
<b>Will the proposed project:</b>								
1) Comply with applicable state and local requirements as set forth in Section 29a of the Initial Study Assessment Guidelines?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 29a of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

29a-1. The proposed project includes a request to utilize the existing 12-mile sewer pipeline connected to the City of Oxnard's Wastewater Treatment Plant as a means of sewage disposal for its employees (and for industrial wastewater). This existing line has been utilized since 1959 solely for commercial and industrial wastewater discharge and not as a means of individual sewage disposal for the facility workers. The existing facility had an Onsite Wastewater Treatment System (OWTS) that was abandoned in October 2013, in anticipation of connecting proposed restrooms to the existing sewer pipeline, approved pursuant to CUP No. LU06-0011. However, this sewer connection was never completed since no buildings with restrooms were ever built to require a connection. Since the abandonment of the OWTS, porta-potties were used as a means of sewage disposal for its employees.

In order to be in compliance with the Ventura County Building Code, the applicant requests to install permanent restrooms, including a lavatory faucet, sink, and emergency shower use at the facility for the employees. On March 8, 2018, the City of Oxnard Public Works Agency confirmed that the City has availability and sewer capacity to handle and treat the proposed 309 gallons per day of domestic waste resulting from the proposed restrooms and other proposed plumbing fixtures at the facility (Attachment 32). The proposed project will not have an adverse impact to a sewage collection/treatment facility since the City of Oxnard has confirmed its existing capacity can accommodate the additional wastewater generated by the proposed project through the existing pipeline.

29a-2. The proposed project includes a request to connect to a public sewer system that has adequate capacity to treat and handle the proposed domestic waste of the facility. For this reason, the proposed project is consistent with the applicable General Plan Goals and Policies for Item 29a of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>29b. Waste Treatment &amp; Disposal Facilities - Sewage Collection/Treatment Facilities (EHD)</b>								
<b>Will the proposed project:</b>								
1) Comply with applicable state and local requirements as set forth in Section 29b of the Initial Study Assessment Guidelines?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 29b of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

**29b-1.** The proposed project includes the continued use of the existing 12-mile sewer pipeline connected to the City of Oxnard's Wastewater Treatment Plant as a means of sewage disposal for its employees. This existing line has been utilized since 1959 solely for commercial and industrial wastewater discharge and not as a means of individual sewage disposal for the facility workers. The existing facility had an OWTS that was abandoned in October 2013, in anticipation of connecting proposed restrooms to the existing discharge line, approved pursuant to Modification LU06-0011. However, this sewer connection was never completed since no buildings with restrooms were ever built. Since the abandonment of the OWTS, porta-potties were used as a means of sewage disposal for its employees.

As part of the proposed project, the applicant requests to install permanent restrooms, including a lavatory faucet, sink, and emergency shower use. On March 8, 2018, the City of Oxnard Public Works Agency confirmed that the City has availability and sewer capacity to handle and treat the proposed 309 gallons per day of domestic waste resulting from the proposed restrooms and other proposed plumbing fixtures at the facility. Because the applicant has demonstrated that the City of Oxnard has the availability and sewer capacity to handle and treat the proposed domestic waste from the proposed project, the proposed project will have a less than significant impact on waste treatment and disposal facilities – sewage collection and treatment facilities, pursuant to the Ventura County Initial Study Assessment Guidelines.

In addition to connecting to the City of Oxnard's Wastewater Treatment System for treating domestic waste from the proposed restrooms and other proposed plumbing at the facility, the applicant also proposes to continue to treat and discharge industrial and

commercial waste material to the City's Wastewater Treatment System.<sup>26</sup> On March 19, 2019, the City of Oxnard indicated that the prior operator's Industrial Wastewater Discharge Permit, which allows and regulates discharge to the City's Wastewater Treatment System, has been "closed and is no longer in effect" since the 2014 fire and explosion that occurred at the facility (Attachment 33). The City of Oxnard also indicated that due to lack of data and information on the integrity of the 12-mile pipeline, the City of Oxnard will require integrity testing of the pipeline before its continued use. Testing requirements may include, at a minimum, pressure testing, videotaping, structural integrity testing and cleaning. In addition, the City of Oxnard will require ownership documentation, easement and right-of-way agreements, and a hydraulic analysis of the pipeline before its continued use.

According to the City of Oxnard, odor complaints were received while the SCWW facility was in operation. The complainants indicated that the source of the odor was from the City of Oxnard's Wastewater Treatment facility's Wooley Road collection point in Oxnard. The City of Oxnard determined that the odor was caused by high hydrogen sulfide (source of odors) levels in SCWW's discharge and as a result, SCWW was issued administrative orders and citations by the City of Oxnard for the high levels of hydrogen sulfide between 2007 and 2014. According to the applicant, in 2008, SCWW installed a hydrogen sulfide gas removal/treatment system near the end of its 12-mile long pipeline at the Wooley Road collection point just before the wastewater is introduced into the City of Oxnard's sewer system in Oxnard. This was in response to hydrogen sulfide gas being detected in the Oxnard sewer system collection lines. Hydrogen sulfide gas is commonly formed in wastewater collection systems in warm climates where flows are too low to prevent stagnation of fluid. Bacteria interacts with sulfur and hydrogen compounds to produce hydrogen sulfide gas, creating the "rotten egg" odor associated with septic wastewater. The City of Oxnard believed that SCWW's wastewater was generating hydrogen sulfide gas as it traveled in the 12-mile pipeline from the SCWW facility to the City of Oxnard's sewer system. The treatment system installed on Wooley Road diverted the flow from the pipeline through a system that injected hydrogen peroxide into the wastewater which oxidized the hydrogen sulfide back to sulfur and water, thus reducing the hydrogen sulfide. From the treatment system, the wastewater was sent back to the pipeline and into the City of Oxnard's sewer system. The treatment system is listed in SCWW's Wastewater Discharge Permit, *"Additional treatment is done at Wooley Rd. site with hydrogen peroxide to reduce the H<sub>2</sub>S before they discharge to the City's sewer system."* The Wastewater Discharge Permit also required SCWW to conduct monitoring for hydrogen sulfide in their wastewater, *"8. Samples collected for the purpose of determining the permittee's compliance with the allowable dissolved sulfide (H<sub>2</sub>S) limit shall be obtained from the dedicated sample vault on the north side of Wooley Road between Richmond Avenue and Pacific Avenue in the City of Oxnard (the location where the permittee*

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<sup>26</sup> Pursuant to the November 5, 1991 Wastewater Conveyance and Treatment Services Agreement entered into between the City of Oxnard and SCWW, a maximum of 600,000 gallons per day is authorized.

*discharges into the Oxnard Municipal Sewer System).*” The applicant proposes to continue to maintain the hydrogen sulfide treatment system as needed to control the hydrogen sulfide in the wastewater stream.

The City of Oxnard’s Final Advanced Water Purification Facility, Indirect Potable Reuse Engineering Report, Volumes 1 and 2, dated March 2017, prepared by Carollo Engineers, indicated that the City of Oxnard conducted an extensive wastewater sampling program to characterize pollutant loadings and process removals to develop scientifically-based local limits in the Fall of 2015.<sup>27</sup> This report also indicated that the City of Oxnard performed routine monitoring for NPDES permit requirements as well as industrial discharge constituents. On September 4, 2014, analytical results showed an exceedance of the Oxnard’s Wastewater Treatment Plant’s gross-beta NPDES defined permit limit. The report also stated that Oxnard’s Technical Services Program found oil field waste fluids to be a potential source of gross-beta contaminant. Oxnard’s wastewater staff then collected wastewater samples at the City of Oxnard’s Water Yard and SCWW (both known to discharge this type of wastewater) on Wooley Road. Following analytical results reported on October 14, 2014, the City of Oxnard’s monitoring staff were informed that the SCWW sample port had an exceedance of gross-beta concentration. Additional samples were taken upstream of the SCWW facility to track the source of the gross-beta discharge into the SCWW collection system. The City of Oxnard attributed the source of the discharge to the SCWW facility. A Cease and Desist Order was issued to SCWW by the City of Oxnard on October 22, 2014, for gross-beta exceedance (radioactivity). According to the applicant, this was the first time the issue was made known to SCWW as its sewer discharge permit did not require testing or monitoring for radioactive material. The applicant indicated that SCWW immediately complied with this order and began gross-beta testing of its incoming waste streams in an attempt to determine the potential source for the gross-beta. The applicant explained that SCWW began negotiations with the City of Oxnard regarding the appropriate methodology for determining potential sources for gross-beta levels in wastewater samples. In this regard, SCWW took the position that California regulations allow for subtracting out the naturally occurring radioactive material (NORM) potassium-40 beta radioactivity when evaluating compliance with discharge limits. According to SCWW, the City of Oxnard’s position was that the City’s discharge permit with the Los Angeles Regional Water Quality Control Board did not have allowances for subtracting NORM. The applicant indicated that

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<sup>27</sup> This engineering report is submitted to the State Water Resources Control Board Division of Drinking Water for review and approval by the City of Oxnard and is intended to provide the necessary information to permit indirect potable reuse of up to 6.25 mgd of purified Advanced Water Purification Facility-treated product water. A copy of this report can be found on the internet at: [https://www.oxnard.org/wp-content/uploads/2017/12/Vol1\\_Oxnard-Title22EngineeringReport\\_Final.pdf](https://www.oxnard.org/wp-content/uploads/2017/12/Vol1_Oxnard-Title22EngineeringReport_Final.pdf) and [https://www.oxnard.org/wp-content/uploads/2017/12/Vol2\\_Oxnard-Title22EngineeringReport\\_Final.pdf](https://www.oxnard.org/wp-content/uploads/2017/12/Vol2_Oxnard-Title22EngineeringReport_Final.pdf).

SCWW's follow-up testing showed as much as 100 percent of the gross-beta detected was from naturally occurring potassium-40 beta.

The report indicated that after several months of continuous gross-beta monitoring by SCWW, a Notice of Violation was issued to SCWW for violations on the following sample dates: September 24, 2014, October 16, 2014, October 22, 2014 and subsequently, on October 28, 2014, November 6, 2014 and November 13, 2014. Shortly thereafter, the 2014 explosion and fire occurred at the SCWW facility. The City of Oxnard's City Manager issued a suspension of the SCWW's Wastewater Discharge Permit and prohibited SCWW from discharging any wastewater into the City of Oxnard's Collection System. The Notice of Violation has since been closed due to inactivity of the discharge line. The applicant will be required to meet all of the requirements of the City of Oxnard's Industrial Wastewater Discharge Permit (as outlined below in this section) and work with the City of Oxnard's Technical Services staff to maintain acceptable concentration levels, which will resolve any potential exceedances of gross-beta concentration, for the duration of the operation of the proposed wastewater treatment facility.

Prior to the City of Oxnard issuing a Sewer Will-Serve letter for the use of the pipeline as a means of sewage disposal for the facility workers, and a new Industrial Wastewater Discharge Permit to authorize use of this line for industrial and commercial use, the Permittee will be required to meet specific local, state, and federal statutes and regulations originating under the state and federal water quality laws, solid and hazardous waste laws, public resources law, and recycling laws as set forth, including but not limited to laws and regulations implemented by the U.S. EPA, the State Water Resources Control Board, Cal Recycle, and the CDTSC. The Permittee will be required to comply with the most stringent of all applicable regulations under the oversight of the regulatory authority, including the local Regional Water Quality Control Board and the local CUPA. The Permittee will also be required to ensure that its discharges (1) do not contain any substances in concentrations toxic to human, animal, plant, or aquatic life; and, (2) do not include waste resulting from the combustion of toxic or hazardous wastes.

Pipeline Evaluation Reports (Report) were prepared by Penfield and Smith in 1990 and in 2011 to demonstrate the results of an evaluation performed on the existing pipeline. The 1990 Report was intended to determine the corrosive effects on the pipeline from industrial and domestic wastewater, and the acceptable capacities of the pipeline under current use and also with proposed additions of flow from the County's Todd Road Jail, 40 acres of planned industrial development in Saticoy, and the increased flow from the SCWW facility. (Attachment 34). Penfield and Smith provided several recommendations for adequately maintaining the pipeline. The proposal to add flow from the Todd Road Jail and from 40 acres of industrial zoned land in Saticoy was never realized. As a result, SCWW has been the only discharger into the existing 12-mile waste discharge line.

The 2011 Report indicated that a series of tests and inspections were performed at three representative locations along the 12-mile pipeline, between the existing facility and the connection to the City of Oxnard along Wooley Road in Oxnard, to determine whether

there was evidence of corrosion or structural degradation (Attachment 35). A contractor was hired to excavate an area approximately 6 feet long, from the middle of to the top of the pipe and a 2 to 3-foot length below the pipe, to expose the entire exterior of the pipe. At each of the three locations, the exterior coating was carefully examined to determine the material integrity of the asphaltic coating. The coating was removed at each location to measure the thickness of the pipe and the coating itself. These tests were made on the exterior circumference of the pipe. These three tests were made by the use of an ultrasonic device.

According to the 2011 Report, at all three locations there was no evidence of corrosion along the steel, asphalt coating, or cement mortar lining. There were no signs of or symptoms of structural deficiencies. There was no evidence of cracking or degradation of the lining or coating of any of the three locations. There was evidence of material buildup on the sidewalls and sediment in the bottom of the pipeline in all three locations. However, the material buildup was less than 1 inch in thickness and primarily less than ½-inch so, if not cleaned in the future, this could create a hydraulic degradation in the future, but should not affect the structural integrity of the pipeline. Penfield and Smith concluded that since the pipeline has shown good resilience after 50+ years of service, it is reasonable to expect the pipeline to last at least another 30 years.

After the 2014 fire and explosion incident at the SCWW facility, at the request of the County, SCWW retained CD Lyons, General Contractor, to perform a pressure test of the existing 10-inch pipeline to determine the stability of the pipeline. Initial testing was conducted at 80 pounds per square inch gauge (psig).<sup>28</sup> During this pressure test in 2015, a spill occurred along Wooley Road near Pacific Avenue in Oxnard, CA. According to SCWW, an investigation was conducted by SCWW which determined that an unknown party had, at some time prior to the pressure test, made an excavation at the location of the leak, removed the asphalt concrete, excavated to the pipe, and made two parallel cuts in the steel pipe. Without repairing the pipe, the unknown party filled around the pipe with cement, backfilled with soil, and replaced the asphalt concrete. Aerial imagery of the Wooley Road area indicates that the unpermitted excavation work was done around 2009. No records or permits issued by the City of Oxnard for this work have been found. The City of Oxnard did not conduct an independent investigation and cannot independently confirm the reason for the spill. Subsequent to the 2015 testing, the pipe was repaired, and excavation backfilled. Since the 2015 spill, the pipeline has not been re-tested. The Permittee will be required, as a condition of approval, to conduct a pressure test to determine the pipeline's integrity and an electromagnetic test of wall thickness using a smart pig. If the construction of the pipeline does not allow for electromagnetic testing, then the Permittee shall conduct a hydrostatic pressure test, or a test method that provides an equivalent level of safety information that is approved by the County prior to conducting the test. The testing would identify anomalies with relatively low wall thickness that would be exposed and tested for actual wall thickness. If the anomaly level tested in

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<sup>28</sup> The existing facility's pumps typically run between 35 pounds per square inch (psi) and 50 psi.

the first round indicates inadequate wall thickness, then the contractor shall evaluate anomalies at a lower level. These tests shall be conducted, and the pipeline revealed to have structural integrity, prior to the issuance of a Zoning Clearance for Construction and prior to the Permittee obtaining a new Industrial Wastewater Discharge Permit issued by the City of Oxnard. If these tests demonstrate required repairs, then these repairs would have to be completed and the pipeline retested for integrity prior to issuance of the Zoning Clearance for Construction.

Since April 6, 1999, SCWW has been operating the existing pipeline under a franchise agreement with the County of Ventura. The Board of Supervisors adopted Ordinance No. 4183 to grant a public franchise (Franchise Agreement 1.10.88) to SCWW for a 20-year period to allow SCWW to operate and maintain an existing system of pipelines (i.e., 12-mile pipeline) and to lay, construct, maintain, operate, use, repair, and remove any additional system of pipelines together with such valves, fittings and other equipment necessary or convenient for the purpose of transporting wastewater and other waste substances resulting from oilfield, industrial, agricultural and other operations, below, over, under or upon the public highways, streets, roads, or public places in the unincorporated areas of the County of Ventura. On January 24, 2006, the Board of Supervisors approved an extension of the franchise until December 31, 2025.

Pursuant to this franchise and its subsequent amendments approved on October 25, 2011, SCWW is required, among other specific requirements, to operate the pipeline in a "good and workmanlike manner and of good material", maintain a running \$40,000 bond to guarantee that the terms of the franchise are adhered to, and maintain a Commercial Comprehensive General Liability insurance policy with the Director of the Public Works Agency with respect to the term of this franchise, and the installation, operation, and maintenance of the pipeline. As a condition of approval of the proposed project, the applicant will be required to continue to remain in compliance with all of the terms and conditions of this franchise. Based on Dr. Tormey's September 6, 2018 Environmental Technical Report, the Planning Division will also require the Permittee to conduct another pipeline integrity test and an electromagnetic test to confirm that the pipeline passes a pressure test and does not have any internal corrosion prior to the use of the pipeline and renewed operation at the facility as a condition of approval. The electromagnetic testing will: (1) identify anomalies with relatively low wall thickness that will be exposed; and, (2) identify actual wall thickness.

In addition to the requirements of the County's franchise agreement with the applicant, the Permittee will be required, as a condition of approval, to demonstrate that the pipeline meets all of the requirements imposed by the City of Oxnard in order to obtain a new Industrial Wastewater Discharge Permit, which includes, but not limited to: (1) providing a Baseline Monitoring Report (BMR)<sup>29</sup> to the City of Oxnard; (2) providing a California Water Environmental Association (CWEA) Centralized Waste Treatment (CWT) Best

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<sup>29</sup> A baseline monitoring report (BMR) is the initial step for the Permittee to provide system information that is required for the waste discharge permitting process. The BMR is submitted to the City of Oxnard Source Control Group.

Management Practices (BMPs) Certification to the City of Oxnard; (3) obtaining an Industrial General Permit (IGP) for Stormwater from the Regional Water Quality Control Board; (4) obtaining an approved modified CUP from the County of Ventura Board of Supervisors to re-instate the wastewater treatment facility (the subject of this Initial Study); obtaining approval from the City of Oxnard's City Council to re-use the waste discharge line; and, (5) obtaining approval of a Pre-treatment System (i.e., the treatment of wastewater to remove harmful pollutants before being discharged to a sewer system)<sup>30</sup> from the City of Oxnard. All of these requirements shall be completed prior to the issuance of any Zoning Clearance for Construction of the proposed project.

Since the City of Oxnard has confirmed that it has sufficient capacity to handle and treat domestic waste generated from the proposed restrooms and other proposed plumbing fixtures at the facility, and with the implementation of the recommended conditions of approval, the City of Oxnard's approval process for the Industrial Wastewater Discharge Permit and the requirements of the franchise agreement, the proposed project will have less than significant impacts on waste treatment and disposal facilities – sewage collection and treatment facilities.

**29b-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 29b of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>29c. Waste Treatment &amp; Disposal Facilities - Solid Waste Management (PWA)</b>								
<b>Will the proposed project:</b>								
1) Have a direct or indirect adverse effect on a landfill such that the project impairs the landfill's disposal capacity in terms of reducing its useful life to less than 15 years?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 29c of the Initial Study Assessment Guidelines?		X				X		

<sup>30</sup> A pre-treatment system is a wastewater treatment system consisting of the necessary pollution control equipment that a Permittee is required to install, operate and maintain to comply with the Industrial Wastewater Discharge Permit limits prior to discharging wastewater into a Publicly Owned Treatment Works.

### Impact Discussion:

**29c-1.** As required by PRC § 41701, Ventura County's Countywide Siting Element (CSE), adopted in June 2001 and updated annually, confirms Ventura County has at least 15 years of disposal capacity available for waste generated by in-County projects. Because the County currently exceeds the minimum disposal capacity required by the PRC, the proposed project will have a less than a significant impact on Ventura County's solid waste disposal capacity.

**29c-2.** Ventura County Ordinance No. 4421 requires all discretionary permit applicants whose proposed project includes construction and/or demolition activities to reuse, salvage, recycle, or compost a minimum of 60% of the solid waste generated by their project. The Integrated Waste Management Division's waste diversion program (Form B Recycling Plan/Form C Report) ensures this 60% diversion goal is met prior to issuance of a final Zoning Clearance for use inauguration or occupancy, consistent with the Ventura County General Plan's Waste Treatment and Disposal Facility Goals 4.4.1-1 and -2 and Policies 4.4.2-1, -2, and -6. Therefore, the proposed project is consistent with the applicable General Plan Goals and Policies for Item 29c of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>29d. Waste Treatment &amp; Disposal Facilities - Solid Waste Facilities (EHD)</b>								
<b>Will the proposed project:</b>								
1) Comply with applicable state and local requirements as set forth in Section 29d of the Initial Study Assessment Guidelines?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 29d of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

**29d-1.** The proposed project does not involve a solid waste operation or facility. Therefore, the proposed project will have no adverse impact relating to solid waste operations or facilities.

**29d-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 29d of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>30. Utilities</b>								
<b>Will the proposed project:</b>								
a) Individually or cumulatively cause a disruption or re-routing of an existing utility facility?		X				X		
b) Individually or cumulatively increase demand on a utility that results in expansion of an existing utility facility which has the potential for secondary environmental impacts?		X				X		
c) Be consistent with the applicable General Plan Goals and Policies for Item 30 of the Initial Study Assessment Guidelines?		X				X		

**Impact Discussion:**

30a. and 30b. The existing facility is already served by existing utility facilities.

Electrical

The existing facility is already served by Southern California Edison's existing electrical system. The proposed project will not cause a disruption or re-routing of an existing utility facility or increase demand on a utility that results in expansion of an existing utility facility which has the potential for secondary environmental impacts. Thus, the proposed project will have no impact on an existing electrical facility.

Gas

The existing facility is already served by Southern California Gas Company's existing natural gas transmission system. Thus, the proposed project will have a less than significant impact on gas facilities since the natural gas transmission facility already exists within the project area.

30c. The proposed project is consistent with applicable General Plan Goals and Policies for Item 30c of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>31a. Flood Control Facilities/Watercourses - Watershed Protection District (WPD)</b>								
<b>Will the proposed project:</b>								
1) Either directly or indirectly, impact flood control facilities and watercourses by obstructing, impairing, diverting, impeding, or altering the characteristics of the flow of water, resulting in exposing adjacent property and the community to increased risk for flood hazards?		X				X		
2) Be consistent with the applicable General Plan Goals and Policies for Item 31a of the Initial Study Assessment Guidelines?		X				X		

### Impact Discussion:

31a-1. The project site is located immediately adjacent to, and south and east of Cummings Road Drain, which is a Ventura County Watershed Protection District (WPD) jurisdictional redline channel. No direct drainage connections to Cummings Drain are proposed or indicated as part of the proposed project.

Impacts from increases in impervious area will be required to be mitigated to less than significant under conditions imposed by the Engineering Services Department, Development and Inspection Services. These conditions will be based on Appendix J of the Ventura County Building Code. Appendix J requires that runoff from the site will be released at no greater than the undeveloped flow rate in such a manner as to not cause an adverse impact downstream in velocity or duration.

WPD Ordinance WP-2 states that a project cannot impair, divert, impede or alter the characteristics of the flow of water running in any jurisdictional redline channel or facility. To the extent a proposed project impacts WPD channels and facilities, compliance with WPD's standards is required. In such cases, engineering studies should verify compliance with District hydrology data and flood studies. In addressing peak attenuation, stormwater runoff after development must not exceed the peak flow under existing conditions for any frequency of event; any additional flow (peak, volume) must be contained on the site. Further, any development activity including drainage connections and site grading that is proposed in, on, over, under, or across overflow any jurisdictional redline channel or facility including the bed, banks, and overflow areas will require a permit from the WPD.

Since the proposed physical changes are both operational and internal to the site, and because there are no determined drainage impacts to the Cummings Road Drain, WPD staff finds that the project design mitigates the direct and indirect project-specific and cumulative impacts to WPD flood control facilities and watercourses.

Thus, the impacts to WPD flood control facilities and watercourses are less than significant.

**31a-2.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 31a of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>31b. Flood Control Facilities/Watercourses - Other Facilities (PWA)</b>								
<b>Will the proposed project:</b>								
1) Result in the possibility of deposition of sediment and debris materials within existing channels and allied obstruction of flow?		X				X		
2) Impact the capacity of the channel and the potential for overflow during design storm conditions?		X				X		
3) Result in the potential for increased runoff and the effects on Areas of Special Flood Hazard and regulatory channels both on and off site?		X				X		
4) Involve an increase in flow to and from natural and man-made drainage channels and facilities?		X				X		
5) Be consistent with the applicable General Plan Goals and Policies for Item 31b of the Initial Study Assessment Guidelines?		X				X		

**Impact Discussion:**

**31b-1. and 31b-2.** The proposed project does not include any alterations to the project's overall ground surface elevation. Portions of the area within the project site will be constructed with containment berms, but the overall drainage patterns will remain. The project components will preserve the existing trend of runoff and local drainage patterns. The project runoff will be maintained in the present condition. The project will not create an obstruction of flow in the existing drainage as any runoff will be similar to the present conditions. The proposed project will not have an impact on the capacity of the channel

or increase the potential for channel overflow during design storm conditions. Thus, the proposed project will have less than significant direct and indirect project-specific impacts and will not make a cumulatively considerable contribution to a significant cumulative impact to drainage facilities not owned by the WPD.

31b-3. The project runoff will be similar to the present flow and no increase in effects on Areas of Special Flood Hazard will occur than the pre-project conditions. The proposed project will have less than significant direct and indirect project-specific impacts and will not make a cumulatively considerable contribution to a significant cumulative impact to drainage facilities not owned by the WPD.

31b-4. The impervious surface areas will drain into existing improved areas. The existing drainage conditions will be similar, and runoff will be returned to the existing drainage system. The proposed project will have less than significant direct and indirect project-specific impacts and will not make a cumulatively considerable contribution to a significant cumulative impact to drainage facilities not owned by the WPD.

31b-5. The impervious surface areas will drain into existing improved areas. The existing drainage conditions will be similar, and runoff will be returned to the existing drainage system. As a recommended condition of approval, the Permittee will be required to submit drainage plans and hydraulic calculations to ensure runoff is discharged in accordance with the Ventura County Building Code, the Ventura County Public Works Agency, WPD, and national and state standards, prior to the issuance of a Zoning Clearance for Construction. Therefore, because the project components will be developed in accordance with current codes and standards, and with the implementation of the condition of approval (i.e., drainage plans and hydraulic calculations), the proposed project will have a less than significant impact on drainage facilities not under the jurisdiction of the WPD.

**Mitigation/Residual Impact(s):** No mitigation required. Impacts are less than significant.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>32. Law Enforcement/Emergency Services (Sheriff)</b>								
<b>Will the proposed project:</b>								
a) Have the potential to increase demand for law enforcement or emergency services?	X				X			
b) Be consistent with the applicable General Plan Goals and Policies for Item 32 of the Initial Study Assessment Guidelines?	X				X			

## Impact Discussion:

**32a.** According to the Initial Study Assessment Guidelines, the proposed wastewater treatment facility is not listed as a project that would have the potential to increase demand for law enforcement or emergency services. Therefore, this project will not have project-specific or cumulative impacts on law enforcement or emergency services due to the type of use proposed. Although the proposed project will not cause a demand on law enforcement or emergency services, adequate security measures have been incorporated into the project to address potential theft, vandalism, and disturbances that could affect public safety in the surrounding area. Security is provided by a six-foot tall perimeter metal fence, security video, and 24-hour onsite operating personnel.

Based on the above discussion, the proposed project will have no adverse impact on law enforcement or emergency service.<sup>31</sup>

**32b.** The proposed project is consistent with the applicable General Plan Goals and Policies for Item 32b of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>33a. Fire Protection Services - Distance and Response (VCFPD)</b>								
<b>Will the proposed project:</b>								
1) Be located in excess of five miles, measured from the apron of the fire station to the structure or pad of the proposed structure, from a full-time paid fire department?	X				X			
2) Require additional fire stations and personnel, given the estimated response time from the nearest full-time paid fire department to the project site?	X				X			
3) Be consistent with the applicable General Plan Goals and Policies for Item 33a of the Initial Study Assessment Guidelines?	X				X			

<sup>31</sup> Refer to Section B, Items 20(a) and (b) of this initial study for a detailed discussion of the proposed project's domestic, and commercial and industrial waste handling, storage, and processing activities which could cause a potential impact on the environment and humans and result in calls for service to the Ventura County Sheriff's Office and the VCPD. Proposed mitigation to reduce those impacts to a less than significant level have been recommended.



Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>Will the proposed project:</b>								
1) Substantially interfere with the operations of an existing school facility?	X				X			
2) Be consistent with the applicable General Plan Goals and Policies for Item 34a of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

34a-1. The proposed project is not a residential project or located adjacent to school facilities and, thus, will have no impact on the demand for schools. The project site is located within a 99-acre industrial zone (i.e., Mission Rock Road Community) within unincorporated Ventura County. The proposed project will have no impact and will not make a cumulatively considerable contribution to a significant cumulative impact, related to existing school facilities.

34a-2. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 34a of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>34b. Education - Public Libraries (Lib. Agency)</b>								
<b>Will the proposed project:</b>								
1) Substantially interfere with the operations of an existing public library facility?	X							
2) Put additional demands on a public library facility which is currently deemed overcrowded?	X							
3) Limit the ability of individuals to access public library facilities by private vehicle or alternative transportation modes?	X							
4) In combination with other approved projects in its vicinity, cause a public library facility to become overcrowded?					X			

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
5) Be consistent with the applicable General Plan Goals and Policies for Item 34b of the Initial Study Assessment Guidelines?	X							

### Impact Discussion:

34b-1. and 34b-2. The proposed project is not a residential project and will have no impact on the demand for libraries. Additionally, the project is not located in the vicinity of a public library and will have no impact on the operations of an existing library facility.

34b-3. The project site is located within a 99-acre industrial zone and not in the immediate vicinity of a library. The proposed project will not limit the ability of individuals to access public library services.

34b-4. The proposed project is not a residential project or located adjacent to a public library and, therefore, will not cause a public library to become overcrowded.

34b-5. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 34b of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
<b>35. Recreation Facilities (GSA)</b>								
<b>Will the proposed project:</b>								
a) Cause an increase in the demand for recreation, parks, and/or trails and corridors?	X				X			
b) Cause a decrease in recreation, parks, and/or trails or corridors when measured against the following standards: <ul style="list-style-type: none"> <li>Local Parks/Facilities - 5 acres of developable land (less than 15% slope) per 1,000 population;</li> <li>Regional Parks/Facilities - 5 acres of developable land per 1,000 population; or,</li> <li>Regional Trails/Corridors - 2.5 miles per 1,000 population?</li> </ul>	X				X			

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
c) Impede future development of Recreation Parks/Facilities and/or Regional Trails/Corridors?	X				X			
d) Be consistent with the applicable General Plan Goals and Policies for Item 35 of the Initial Study Assessment Guidelines?	X				X			

### Impact Discussion:

35a. through 35c. A project will have a significant impact with regard to recreational facilities if it will cause an increase in the demand for recreational facilities, or impede future development of recreation parks and facilities or regional trails and corridors. The proposed project will not involve a use that will increase the population and create a corresponding demand for recreational facilities, and will not impede the future development of local park facilities. The proposed project will not generate additional residents or cause an increase in the demand for recreational facilities. The proposed project will not have a project-specific impact to recreational facilities and will not make a cumulatively considerable contribution to a significant cumulative recreational facilities impact.

35d. The proposed project is consistent with the applicable General Plan Goals and Policies for Item 35a of the Initial Study Assessment Guidelines.

**Mitigation/Residual Impact(s):** No mitigation required. No impact identified.

**\*Key to the agencies/departments that are responsible for the analysis of the items above:**

Airports - Department Of Airports	AG. - Agricultural Department	VCAPCD - Air Pollution Control District
EHD - Environmental Health Division	VCFPD - Fire Protection District	GSA - General Services Agency
Harbors - Harbor Department	Lib. Agency - Library Services Agency	Plng. - Planning Division
PWA - Public Works Agency	Sheriff - Sheriff's Department	WPD - Watershed Protection District

**\*\*Key to Impact Degree of Effect:**

N - No Impact  
LS - Less than Significant Impact  
PS-M - Potentially Significant but Mitigable Impact  
PS - Potentially Significant Impact

### **Section C – Mandatory Findings of Significance**

<b>Based on the information contained within Section B:</b>		
	<b><u>Yes</u></b>	<b><u>No</u></b>
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one that occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future).		X
3. Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effect of other current projects, and the effect of probable future projects. (Several projects may have relatively small individual impacts on two or more resources, but the total of those impacts on the environment is significant.)		X
4. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		X

#### **Findings Discussion:**

1. No. The subject property consists entirely of developed industrial facilities and contains no areas capable of supporting special status plants, rare or endangered plants or animals, and would not eliminate important examples of California history.
2. No. The project will not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.
3. No. The project will not have impacts that are individually limited, but cumulatively considerable.
4. No. The improper storage, handling, and disposal of hazardous materials and waste could result in the creation of adverse impacts on human health and safety as evidenced by the 2014 fire and explosion that occurred on the project site due to negligence by the previous operator and caused acute injury to humans and destroyed property. However, specific actions recommended by Ensaf, as shown

in the RMA, as well as actions identified in Dr. Tormey's September 6, 2018 Technical Memoranda will be implemented in a series of plans and incorporated as mitigation measures/conditions of approval of the project in order to reduce the potential significant impact on the environment and human health and safety to a level of less than significant. The series of plans include the following: (1) Risk Management Plan; (2) Training Plan; (3) Operating and Maintenance Plan; and (3) Annual Spill Drill Plan.

The Ventura County Agricultural Commissioner's Office has also recommended a mitigation measure to reduce the potential impacts from the proposed wastewater treatment facility on adjacent agricultural operations to a less than significant level. Since the proposed wastewater treatment facility is located closer than the threshold distances set forth in Section 5b.C of the Ventura County Initial Study Assessment Guidelines, the proposed project would cause potentially significant impacts on adjacent agricultural operations. Therefore, as a mitigation measure, the Permittee will be required to prepare a landscape buffer and vegetative screening plan in accordance with the Ventura County Landscape Design Criteria and the Agricultural/Urban Buffer Policy. The Permittee will be required to maintain the landscape buffer for as long as the wastewater treatment facility is in operation so that any potential adverse impacts on agricultural operations located within 300 feet of the facility are minimized.

With the implementation of the foregoing mitigation measures and all of the recommended conditions of approval, the proposed project will have a less than significant impact on human beings, either directly or indirectly.

## Section D – Determination of Environmental Document

Based on this initial evaluation:

<input type="checkbox"/>	I find the proposed project <b>could not</b> have a significant effect on the environment, and a <b>Negative Declaration</b> should be prepared.
<input checked="" type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measure(s) described in Section B, Item 2D, of the Initial Study will be applied to the project. A <b>Mitigated Negative Declaration</b> should be prepared.
<input type="checkbox"/>	I find the proposed project, individually and/or cumulatively, MAY have a significant effect on the environment and an <b>Environmental Impact Report (EIR)</b> is required.

[ ]	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An <b>Environmental Impact Report</b> is required, but it must analyze only the effects that remain to be addressed.
[ ]	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project, <b>nothing further is required</b> .

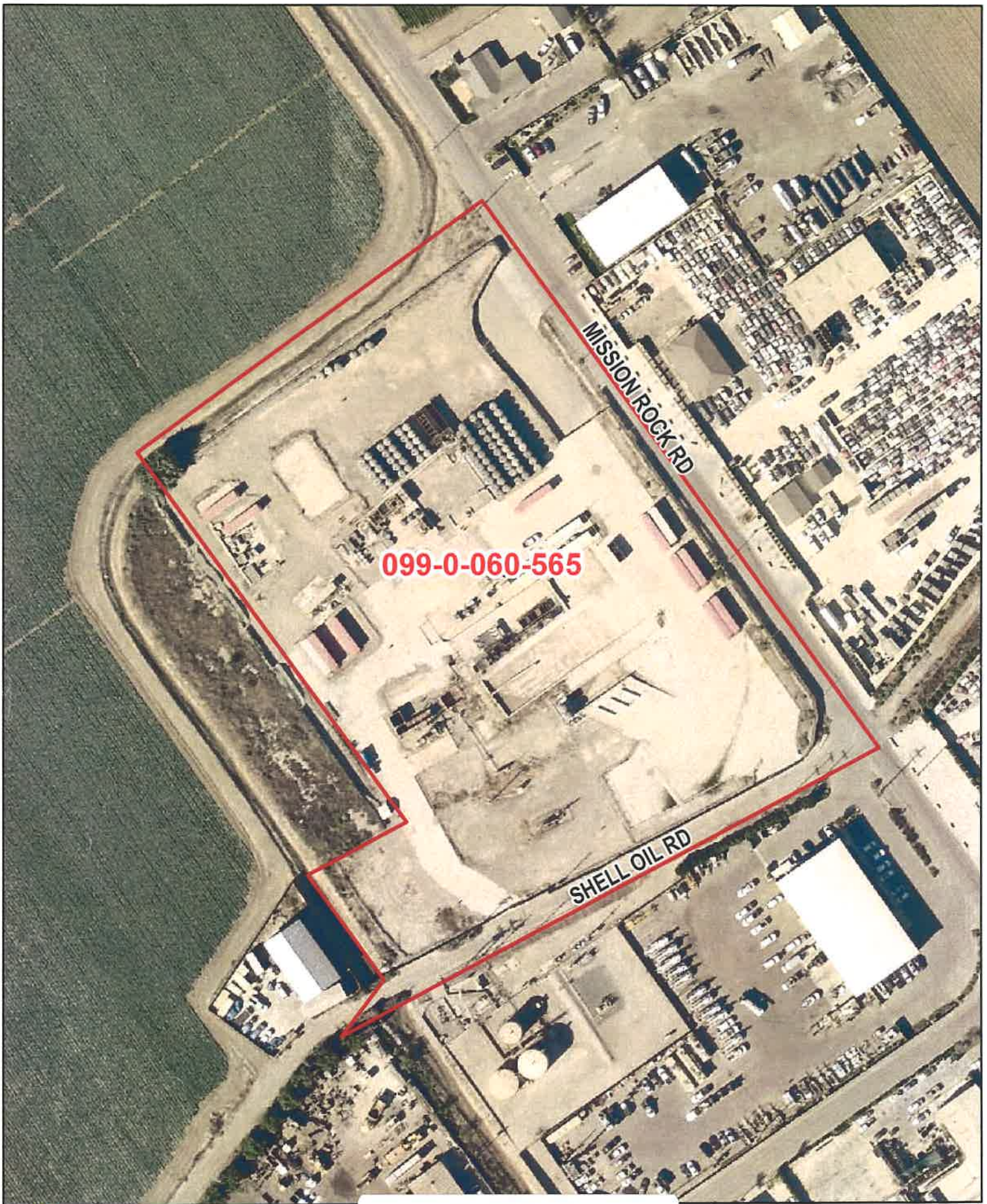
  
 Franca A. Rosengren, Senior Planner

  
 Date

**Attachments:**

- Attachment 1 2019 Aerial Map of Project Site
- Attachment 2 General Plan Land Use and Zoning Designation Map
- Attachment 3 February 27, 2015 SCWW Root Cause Investigative Report
- Attachment 4 January 30, 2018 SCWW EUA Final Report, sans Appendices
- Attachment 5 Notice of Violation PV15-0020
- Attachment 6 Notice of Noncompliance PV15-0020
- Attachment 7 January 2019 Risk Management Analysis
- Attachment 8 Map of the Location of the 12-mile Sewer Pipeline
- Attachment 9 Process Flow Diagrams
- Attachment 10 Proposed Site Plan
- Attachment 11 Proposed Floor and Elevation Plans
- Attachment 12 Conceptual Landscape Plans
- Attachment 13 Proposed Lighting Plans
- Attachment 14 Proposed Sign Plan Summary
- Attachment 15 Map Used in the Cumulative Impacts Analysis – Unincorporated County Projects
- Attachment 16 List Used in the Cumulative Impacts Analysis – City of Santa Paula Projects
- Attachment 17 Map Used in the Cumulative Impacts Analysis – City of Santa Paula Projects
- Attachment 18 January 2019 Odor Impact Minimization Plan
- Attachment 19 January 2017 RI-NU Operations and Maintenance Manual
- Attachment 20 August 2018 Dust Control Plan
- Attachment 21 APCD Air Emissions Modeling Program CalEEMod Version: CalEEMod 2016.3.2 Data

Attachment 22	APCD Air Toxics Review of Permit Applications
Attachment 23	April 8, 2019 APCD Memorandum
Attachment 24	September 2018 Proposed SPCC
Attachment 25	September 6, 2018 Technical Memorandum
Attachment 26	Safety Handbook
Attachment 27	Waste Analysis Plan
Attachment 28	Noise Impact Assessment
Attachment 29	County of Ventura Construction Noise Threshold Criteria and Control Plan
Attachment 30	October 19, 2015 and April 25, 2017 Trip Generation Analysis
Attachment 31	March 8, 2018 Email, City of Oxnard, Public Works
Attachment 32	March 29, 2019 Letter, City of Oxnard, Public Works
Attachment 33	1990 Pipeline Evaluation Report
Attachment 34	2011 Pipeline Evaluation Report
Attachment 35	Works Cited



Ventura County  
Resource Management Agency  
Information Systems GIS Services  
Map created on 02-21-2019  
Source: Pictometry; Oct. 2018

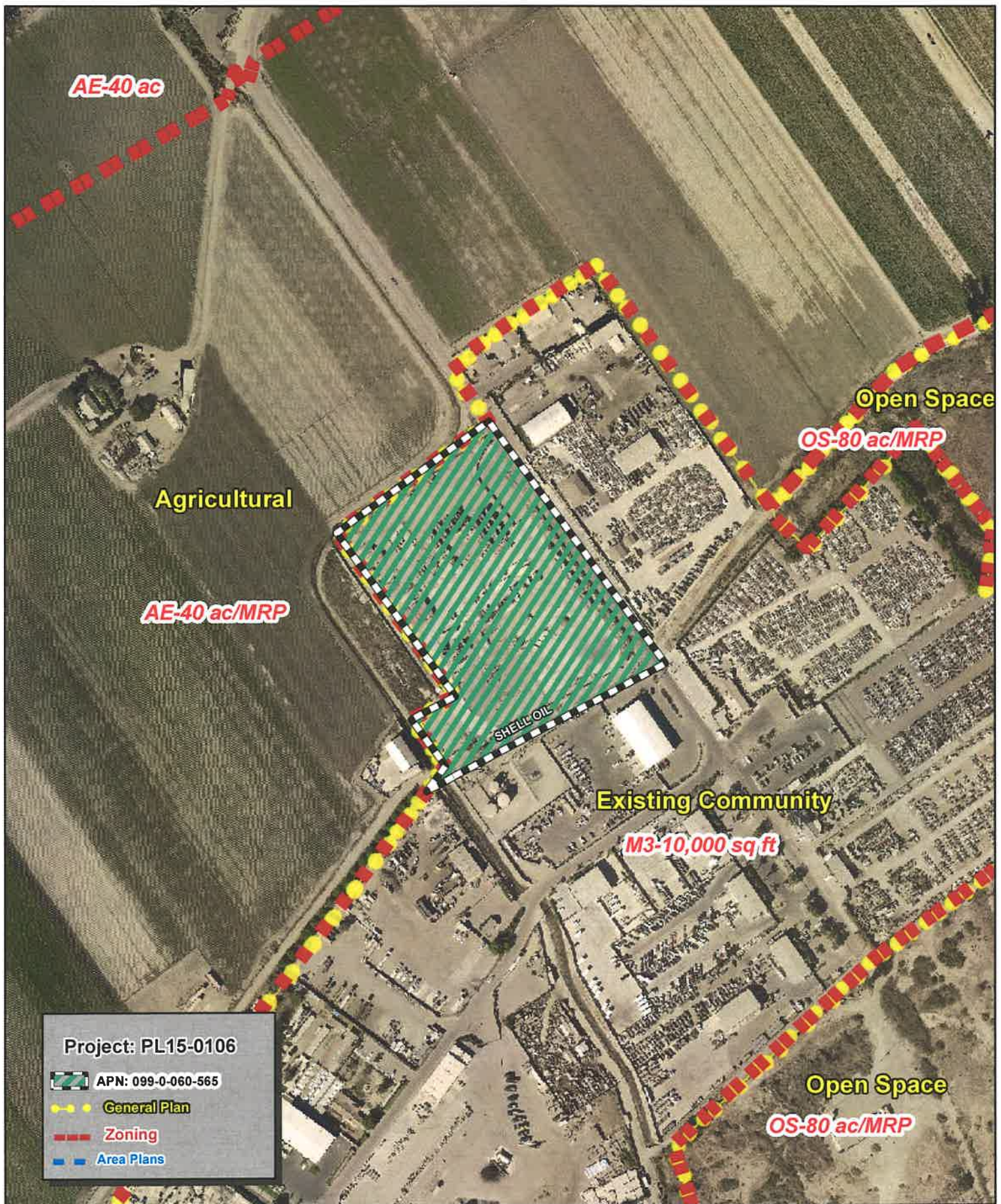


County of Ventura  
Initial Study  
PL15-0106  
**Attachment 1 – 2019 Aerial Map of  
Project Site**

0 50 100 200 Feet

Disclaimer: this map was created by the Ventura County Resource Management Agency Information Systems GIS, which is designed and operated solely for the convenience of the County and related public agencies. The County does not warrant the accuracy of this map and no decision involving a risk of economic loss or physical injury should be made in reliance therein.





Ventura County, California  
Resource Management Agency  
GIS Development & Mapping Services  
Map Created on 02-21-2019  
This aerial imagery is under the  
copyrights of Pictometry  
Source: Pictometry, Oct. 2018



County of Ventura  
Initial Study  
PL15-0106  
**Attachment 2 – General Plan Land  
Use and Zoning Designation Map**

0 135 270 Feet

Disclaimer: This Map was created by the Ventura County Resource Management Agency, Mapping Services - GIS which is designed and operated solely for the convenience of the County and related public agencies. The County does not warrant the accuracy of this map and no decision involving a risk of economic loss or physical injury should be made in reliance thereon.



RH

*The Law Office of  
Michael D. Bradbury*

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(805) 861-0840

2244 East Ojai Avenue  
Ojai, California 93023

February 27, 2015

**Re: November 18, 2014 Incidents - Root Cause Investigatory Report**

The following report is based on an internal investigation conducted by the Santa Clara Waste Water Company ("SCWW") regarding the above referenced incident, and is intended to be SCWW's response to inquiries from various regulatory, investigative and other governmental agencies having jurisdiction over or substantial interest in the matter. As more information is developed, this report will be updated and/or amended accordingly. The company's lawyers, Messrs. Barry Groveman and William Carter of the law firm Musick, Peeler and Garrett, LLC, are available to respond to any inquiries regarding this report to the extent possible, and can be contacted at the numbers and addresses listed below. As one of the principal investigators, acting under the direction of counsel for the company, any questions to me should be handled through Messrs. Groveman or Carter.

Please also be advised that a copy of this report was hand-delivered to the principal investigative agency handling this matter, namely, the Ventura County District Attorney's Office, on Tuesday, February 24, 2015.

**INTRODUCTION:**

Immediately after the explosion and subsequent fire that occurred on the premises of the Santa Clara Waste Water Company ("SCWW") facility located at 815 Mission Rock Road, Santa Paula, California (the "Facility") on November 18, 2014 (collectively referred to as the "Incidents"), an investigation was initiated by SCWW's legal counsel (the "Investigation"). This Investigation is ongoing, and is being conducted by legal counsel, with myself serving as the lead, with assistance provided by former state and federal environmental crimes prosecutors and law enforcement officers, and scientific and forensic experts knowledgeable in chemical, environmental, regulatory and public health and safety matters.

Since 1959, Santa Clara Waste Water Company has continually provided environmental and waste water services to Ventura County farmers, industry and government, as well as residents with septic systems and water softeners. In fact, well over 90% of Ventura County septic system owners bring their waste to SCWW for processing. In addition, the Facility, which only accepts non-hazardous petroleum, domestic sewage and industrial waste for processing, is highly-regulated and frequently-inspected and scrutinized by numerous local, state and federal agencies. SCWW also has a long history of environmental compliance and

work place safety. The November 18, 2014 incidents are the first such events at the Facility in the more than 50 years of SCWW operations. SCWW had no history of explosions, fires or any other type of accidents similar to those occurring on November 18, 2014.

The following analysis and conclusion is based upon information gathered during the course of this Investigation, including the review of available documentation and records, the examination of physical evidence and the sampling and laboratory analysis of materials obtained from the premises of the Facility after the Incidents. Although we cannot say with 100% certainty that we now know all the relevant facts, the following analysis constitutes our best understanding and belief regarding the Incidents, and will be used to address any possible regulatory, enforcement and/or legal issues that may arise as a result of the Incidents.<sup>1</sup>

#### **MOST LIKELY CAUSE OF THE EXPLOSION ON NOVEMBER 18, 2014:**

Absent the discovery or receipt of any new information, the Investigation has reached the conclusion that the most likely cause of the explosion appears to be a chemical reaction resulting from the inadvertent mixing of non-hazardous domestic waste (i.e., septic and sewage) with sodium chlorite, which is a chemical treatment product commonly used in wastewater treatment systems and processes, including odor control and cleaning pipelines of bacteria that can generate hydrogen sulfide gas. This conclusion is based on the following analysis:

Although not a member of the site-controlling Incident Command ("IC"), which was comprised of USEPA, the County and Patriot, SCWW staff heard comments from various members of the IC suggesting that the possible cause of the explosion involved the treatment chemical "sodium chlorite." In response to these and other statements made by members of the IC, SCWW initiated a review of available records and confirmed that sodium chlorite, in liquid form, had been purchased by SCWW and delivered to the Facility by Miles Chemical in the late Summer of 2014 in a single 275-gallon, 2,825 pound plastic (and caged) shipping

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<sup>1</sup> It should, however, be recognized and understood that between the date of the Incidents and January 9, 2015, the ability of SCWW to directly and thoroughly investigate and evaluate the nature and potential cause(s) of the Incidents was significantly hampered by the fact that SCWW had very little access to the premises of the Facility, which was initially under the control of an Incident Command ("IC"), then under the possession and control of either the County of Ventura or the United States Environmental Protection Agency ("USEPA"). At the time of the Incidents, the County initially assumed command of the Facility, which it subsequently relinquished to the USEPA. At that time, SCWW contracted with Patriot Environmental Services ("Patriot") to handle both the emergency response and the subsequent cleanup at the Facility. USEPA thereafter directed and oversaw all safety and cleanup activities on the premises of the Facility until January 9, 2015, when it completed its activities and relinquished control of the Facility back to SCWW, with regulatory oversight transferred to the County. Prior to the departure of the USEPA from the Facility on January 9, 2015, the materials involved in the Incidents had been safely and completely neutralized, solidified and/or disposed of under federal oversight. On January 9, 2015, SCWW was finally granted full access to and control the Facility. In addition to having very limited access to the premises of the Facility for nearly two months, many of the relevant records and materials relating to SCWW's operations at the Facility were either destroyed in the resulting fire on November 18, 2014 that consumed the on-site office and/or were seized by the Ventura County District Attorney's Office ("VCDA") as part of its ongoing investigation of the Incidents and related matters. As a consequence, the following analysis is based on information gathered during the course of SCWW's internal investigation, as well as learned through contacts and communications with various local, state and federal regulatory agencies, and will be supplemented as additional information and analysis is acquired. With that understanding and limitation, please find the following analysis.

and storage container known as a "tote."<sup>2</sup> Miles Chemical is a regular and long-time provider of chemical treatment products to SCWW, and also delivers non-hazardous wastewater contained in similar totes of various sizes for treatment at the Facility.

More specifically, the sodium chlorite, which was manufactured by DuPont and known by the brand name, "Headline 3875," was 31.25% active solution, with more than 5% available chlorine, and had a pH of 12.0. The Material Safety Data Sheet (MSDS) accompanying the tote of sodium chlorite provided, among other things, the following notices and warnings: "Fire and Explosion Hazard: Drying of this product on clothing or combustible materials may cause fire." . . . ; "Spill Cleanup: Dilute with water. Pick up and transfer to properly labelled containers. After cleaning, flush away traces with water." . . . ; "Handling: Avoid letting the product become dry." . . . ; "Incompatibility: Strong acids and oxidizing agents, Organic materials, chlorinated compounds, reducing agents;" . . . ; and "Hazardous reactions: Contact with acids, organic materials, reducing agents and oxidizing agents will release toxic gases of chlorine and/or chlorine dioxide."

The tote of sodium chlorite was delivered to the Facility as part of a proposed program designed and supplied by Miles Chemical to protect against odors, sulfides and biological oxygen demand ("BOD") residuals potentially developing in the 12-mile trunk line or pipeline ("pipeline") to the City of Oxnard's Wastewater Treatment Plant ("WWTP"). SCWW had requested that Miles Chemical supply such an odor control program that could be easily administered through manual controls. For example, as part of this proposed program, SCWW would provide the chemical feed pumps necessary to manually inject the sodium chlorite and other treatment products into the pipeline system. It was SCWW's understanding that Miles Chemical had been working closely with both the Naval Air Station at Point Mugu and the City of Oxnard on a similar program for several years. However, SCWW never implemented the proposed program and, as a result, had not yet had an opportunity to use the sodium chlorite prior to the Incidents of November 18, 2014.

Rather, once delivered to the Facility, the sodium chlorite remained unused and contained in its properly labeled and original shipping tote, and was stored along with other treatment products and totes on a concrete pad located on the Facility. The totes delivered by Miles Chemical and stored on the concrete pad were marked or labeled as either non-hazardous wastewater for treatment or with treatment product identification information bearing the required warnings and handling protocols.

On the evening of November 17 and early morning hours of November 18, 2014, as part of the regular processing of wastewater and housekeeping efforts, SCWW employees were using a vacuum truck with a 20-foot tractor and a 40-foot trailer, and a 120-barrel capacity tank, that was owned by and leased from another company known as 805 Trucking (the "805 Vacuum Truck"). The 805 Vacuum Truck was used by SCWW exclusively on the premises of the Facility for the purpose of transferring liquids contained in totes and other storage tanks to certain receiving stations for processing and treating non-hazardous wastes located

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<sup>2</sup> As part of this Investigation, it was determined that SCWW's existing hazardous materials business plan and inventory had not yet been updated via the online California Environmental Reporting System ("CERS") prior to the date of the Incidents.

throughout the Facility. The 805 Vacuum Truck was not leased or used by SCWW for any off-site purposes.

On the morning of November 18, shortly before the explosion that occurred at approximately 3:45 a.m., the 805 Vacuum Truck was being driven and operated by an employee of SCWW. Specifically, a hose on the 805 Vacuum Truck was being used to suck up non-hazardous wastewaters contained in various totes and transfer them into the 805 Vacuum Truck, which also contained non-hazardous domestic wastes. At that time, the sodium chlorite solution delivered by Miles Chemical, which was still in its original, labeled shipping tote and stored on a concrete pad, was inadvertently sucked up and transferred into the 805 Vacuum Truck. The 805 Vacuum Truck was then moved to one of several receiving stations located on the premises of the Facility in preparation for transferring the liquid mixture now contained in the Truck into an above-ground processing tank. However, before the transfer process from the 805 Vacuum Truck to the processing tank was initiated, the inadvertent mixture of the sodium chlorite with the other non-hazardous wastes contained within the Truck created a chemical reaction and pressure that resulted in the explosion.

As a result of the explosion, the rear section of the 805 Vacuum Truck ruptured and broke off, with the force of the blast scattering debris. The contents of the 805 Vacuum Truck spilled onto an area located on the premises of the Facility, including landing on the concrete containment driveway, receiving bins, totes and other items (the "Spilled Material").

Following the explosion, SCWW personnel immediately called 911 to report the explosion. The Santa Paula Fire Department was the first agency to arrive at the Facility in response to SCWW's call. Other agencies, including the Ventura County Fire and Environmental Health Departments, also soon arrived at the Facility. Upon their arrival at the Facility, personnel from the fire departments and Environmental Health Department discussed the possible cause(s) of the explosion and a proposed abatement and cleanup action plan with a SCWW representative. Further discussion determined that there was the potential for the drying Spilled Material to ignite, with SCWW representatives suggesting that the affected area be immediately sprayed with water. Soon thereafter, the Fire Department set up an area located across the street from the Facility, removed everyone from the premises and began cordoning off the Facility to prevent further access. A fire truck that had responded to the initial emergency call, and that had driven through the Spilled Material, remained parked by the Facility's entrance gate. As it was preparing to drive off, the tires of the fire truck "popped." The Fire Chief then ordered an evacuation zone to be established.

As the sun began to rise and the winds picked up, the Spilled Material dried and began to spontaneously combust. This resulted in a second incident of fire at approximately 9:45 a.m., which impacted an area of approximately 3,000 square feet in size on the premises of the Facility, including igniting totes containing chemical treatment products that were stored on a concrete pad, as well as destroying a nearby small receiving shed. The Fire Department then set up an IC Center across the street from the Facility, subsequently moving it down the road later that morning, then again moving it to its final location that evening in Santa Paula.<sup>3</sup>

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<sup>3</sup> Immediately after the Incidents, the Facility's operations and utilities were shut down and the premises secured. The location on the south side of the Facility known as the "Shipping Pit," which is the starting point for the 12-

Following the Incidents, SCWW also retained the environmental consulting firm of Haley & Aldrich to assist in identifying and implementing steps to prevent a recurrence of the Incidents, including reviewing and modifying SCWW's protocols as necessary. During this time period, the Center for Toxicology and Environmental Health, LLC ("CTEH") was also retained by Patriot to perform various environmental tasks, including a Tote Visual Assessment that was conducted in December 2014 ("Tote Assessment Report"). The purpose of the Tote Assessment Report was to locate, identify, uniquely-number, visually examine, map and photograph all of the totes located on the premises of the Facility. According to the Tote Assessment Report, one tote of sodium chlorite, which was given the unique number "TT010," was found located on a concrete storage pad along with several other similar totes in an area described as the "Northeast side of B4," and was further described in the Tote Inventory as, "Very small amount of liquid present, labeled for sodium chlorite 31.25% active."<sup>4</sup> The photograph of the sodium chlorite tote contained within in the Tote Assessment Report depicts a caged tote bearing a hazardous placard with number "1908," which is the proper "corrosive" identification number for a tote containing sodium chlorite. According to the Tote Assessment Report, there was only one tote found on the premises of the Facility labeled, or in any manner identified, as containing sodium chlorite.<sup>5</sup>

In mid-December 2014, counsel for SCWW also engaged in several conversations with representatives of the VCDA regarding the status of the pending investigation of the Incidents, including having a face-to-face meeting with various members of the VCDA on December 12, 2014. During the course of that meeting, the stated and primary focus of the VCDA was to learn the identity (or identities) of the chemical(s) involved in the Incidents in order to assist in the aid and recovery of those injured during the Incidents, including first responders. In response to those inquiries, SCWW counsel assured the VCDA that the top priority for SCWW would be to investigate and learn the cause(s) of the Incident, including the identity of the chemical(s) that may have been involved in the explosion.

During the following week, SCWW representatives reached out to and had several discussions with USEPA's On-Scene Coordinator ("OSC") and others to arrange for the safe and timely taking of samples from the premises of the Facility. During those conversations, SCWW learned that most of the materials remaining on the premises of the Facility had been neutralized and/or solidified and therefore, might no longer prove useful in identifying the chemicals at issue in the Incidents. However, according to USEPA, the remaining contents of the 805 Vacuum Truck had not yet been neutralized and were available to be sampled. Unfortunately, due to a lack of access to the Facility, SCWW was not able to obtain any samples of the contents of the 805 Vacuum Truck until Saturday, December 20, 2014. On

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mile pipeline, was also immediately closed in order to eliminate any possibility of shipping via pipeline any contaminated material to the WWTP. Subsequent testing of the effluent confirmed that no contaminated or harmful chemicals or materials were ever discharged into, or present in, the pipeline or posed any threat to the pipeline or the WWTP as a result of the Incidents.

<sup>4</sup> SCWW understands that as part of its response to the Incidents, the IC identified and established certain sectors and decontamination zones on the premises of the Facility, including "Sector B4," which is the area in which the tote of sodium chlorite was found stored on the concrete pad.

<sup>5</sup> As mentioned above, a single tote of sodium chlorite is consistent with SCWW records. In addition, although it may be impossible to track with absolute certainty the movements of that particular tote, it was found on a concrete pad area used for the storage of chemical treatment products during the time period it was delivered to the Facility.

that date, under the oversight of the USEPA OSC, two liquid grab samples were collected from both the intake and discharge piping assemblies of the 805 Vacuum Truck by an environmental contractor acting on the behalf of SCWW. The two samples were thereafter transported to and delivered under chain of custody to a certified laboratory for analysis. The analysis of Sample Number 1, which was obtained from the intake piping, showed the following: 120,000 parts per million ("ppm") or 12% of chlorate and 80,000 ppm or 8% of chlorite. The analysis of Sample Number 2, which was obtained from the discharge piping, showed the following: 550 parts per billion ("ppb") of chlorate and 1900 ppb of chlorite.<sup>6</sup>

On January 4, 2015, shortly after receiving the above-mentioned laboratory analyses of the two grab samples taken from the 805 Vacuum Truck, SCWW counsel notified the VCDA via email that the substances chlorate and chlorite were both found in those samples. In addition to assisting the VCDA in its efforts to identify the potential cause of the Incidents, SCWW counsel further hoped to provide any information that might be useful in the treatment and recovery of first responders by adding, "[b]ased our preliminary evaluation, it would appear that some level of chlorine dioxide and/or chlorine gas was generated during the Incident."

#### **CONCLUSION:**

Based on the foregoing, it appears readily apparent that the treatment product sodium chlorite, when inadvertently mixed and reacting with non-hazardous wastewaters, including domestic and septic wastes, in the 805 Vacuum Truck, was the most likely and probable cause of the explosion. The primary and most compelling evidence supporting this conclusion is the finding of both chlorite and chlorate in the two liquid grab samples obtained from the 805 Vacuum Truck on December 20, 2014. Secondly, as documented in the Tote Assessment Report, the labeled and nearly-empty sodium chlorite tote was found stored on a concrete pad in an area of the Facility where the 805 Vacuum Truck had been used in processing and cleaning activities on the morning of November 18, 2014. Lastly, the nature of the subsequent fire is consistent with the presence and characteristics of drying sodium chlorite and/or chlorate, as noted in the notices and warnings provided in the applicable MSDSs.

In order to better prevent such accidents from occurring in the future, it is my understanding that professional environmental consultants have recommended, and SCWW has agreed to implement, the following policy changes:

1. The Facility will no longer accept any wastewater contained in totes. The only totes allowed to be present on the premises will contain clearly-marked and labeled chemical treatment products.
2. Additional and targeted safety training will reinforce the new policy that all liquid materials in totes are to be considered "product" and shall never be handled or

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<sup>6</sup> Based on commonly understood principles of chemistry, it is possible that every molecule of chlorate found in the samples was a byproduct of the reaction between sodium chlorite and other materials mixed in the 805 Vacuum Truck. As such, the finding of those concentrations of chlorate (12%) and chlorite (8%) in the sample taken from the intake piping of the 805 Vacuum Truck, is consistent with a source that is 20% or more of sodium chlorite.

processed as wastewater, along with posted detailed protocols and reminders, as well as listed potential sanctions for any violations.

This new policy has been recommended in order to prohibit any employee from pumping or transferring any material from any tote into a vacuum truck. This policy change has been designed to render it essentially impossible for this accident to ever re-occur, because it eliminates the possibility of the inadvertent mixing of any potentially incompatible materials.

Respectfully,



Michael D. Bradbury, Esq.

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(213) 629-7863  
[w.carter@mpglaw.com](mailto:w.carter@mpglaw.com)

## CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1  
1387730

**Section A**  
**Required Client Information:**

Company: CTEH  
Address: 5120 Northside Dr.  
N. Little Rock, AR  
Email To: KLawrence@cteh.com  
Phone: 501-801-8500 Fax:  
Required Due Date/TAT:

**Section B**  
**Required Project Information:**

Report To: KYLE LAWRENCE  
Copy To:  
Purchase Order No.:  
Project Name: SCW MISSION INCIDENT  
Project Number: 106846

### Section C

Attention:	
Company Name:	
Address:	
Pace Quote	
Reference:	
Pace Project	
Manager:	
Pace Profile #:	

## REGULATORY AGENCY

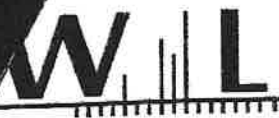
<input type="checkbox"/> NPDES	<input type="checkbox"/> GROUND WATER	<input type="checkbox"/> DRINKING WATER
<input type="checkbox"/> UST	<input type="checkbox"/> RCRA	<input checked="" type="checkbox"/> OTHER _____

Site Location	CA
STATE:	

## Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓ RETAIN	Residual Chlorine (Y/N)	Page Project No./ Lab I.D.
			DATE	TIME	DATE	TIME			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other			
SAMPLE ID (A-Z, 0-9 / .-) Sample IDs MUST BE UNIQUE		MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)		COMPOSITE START		COMPOSITE END/TAB												
1	122014 - 120 BBL - PASS	WT G	12/20/14	1215				1	X										
2	122014 - 120 BBL - DRV	WT G	12/20/14	1215				1	X										
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
ADDITIONAL COMMENTS			RELINQUISHED BY / AFFILIATION				DATE	TIME	ACCEPTED BY / AFFILIATION				DATE	TIME	SAMPLE CONDITIONS				
*OPEN IN NEG PRESSURE HOOD. POTENTIAL CHLORINE EVOLUTION.			Randall Woodlee JMR ROXY CTEH				12/20/14	1538	Jan JWRinner - Roxy				12/20/14	1538					
							12/22/14	1312	[Signature] - Adnan [unclear]				12/22/14	1512	39°C				

**SAMPLER NAME AND SIGNATURE**



WECK LABORATORIES, INC.

Analytical Laboratory Service - Since 1964

### Analytical Service Quotation

**Contact:** Adam Love  
**Client Name:** Roux Associates, Inc. - Oakland CA  
**Address:** 555 12th Street, Ste. 1725  
Oakland, CA 94607  
**Phone:** (415) 967-6023  
**Fax:**

**Printed:** 12/22/2014  
**Effective:** 12/22/14  
**Expires:** 06/30/15

**Project:** Roux Assoc. / Blanket

Code	Method	Qty	TAT (workdays)	Unit Price	Extended Price
<b>Water</b>					
Chlorate - EPA 300.1	EPA 300.1	2	1	\$130.00	\$260.00
Chlorite - EPA 300.1	EPA 300.1	2	1	\$130.00	\$260.00

**Bid Total: \$520.00**

**Marilyn Romero**  
**Client Services Manager**

Payment terms are NET 30 days from invoice date. New accounts require payment prior to the release of test results until a credit application has been approved. Weck Laboratories accepts credit card payments (VISA/Master Card, American Express). Credit application/credit card approval form and Weck Laboratories' terms & conditions can be found at [www.wecklabs.com](http://www.wecklabs.com) under Resources



## Certificate of Analysis

**Report Date:** 12/23/14 14:31  
**Received Date:** 12/22/14 13:12  
**Turnaround Time:** 1 workday

**Project:****Phones:** (415) 967-6023**Fax:****P.O. #:****Attn:** Adam Love

**Client:** Roux Associates, Inc. - Oakland CA  
555 12th Street, Ste. 1725  
Oakland, CA 94607

Dear Adam Love :

Enclosed are the results of analyses for samples received 12/22/2014 with the Chain of Custody document. The samples were received in good condition, at 3.9 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

Lab Sample ID: 4L22050-01		Sample ID: 122014-120BBL-Pass		Matrix: Water						
Sampled by: Client		Sampled: 12/20/14 12:15								
Analyte	Result	MDL	MRL	Units	Dil	Method	Prepared	Analyzed	Batch	Qualifier
Chlorate	120000000		5000000	ug/l	500000	EPA 300.1	12/23/14	12/23/14 10:05	W4L1400	
Chlorite	800000000		5000000	ug/l	500000	EPA 300.1	12/23/14	12/23/14 10:05	W4L1400	
Surrogate: Dichloroacetate	106 %		90-115	%		Concentration: 528				
Surrogate: Dichloroacetate	106 %		90-115	%		Concentration: 528				

Lab Sample ID: 4L22050-02		Sample ID: 122014-120BBL-Driv		Matrix: Water						
Sampled by: Client		Sampled: 12/20/14 12:15								
Analyte	Result	MDL	MRL	Units	Dil	Method	Prepared	Analyzed	Batch	Qualifier
Chlorate	550		500	ug/l	50	EPA 300.1	12/23/14	12/23/14 11:48	W4L1400	
Chlorite	1900		500	ug/l	50	EPA 300.1	12/23/14	12/23/14 11:48	W4L1400	
Surrogate: Dichloroacetate	93 %		90-115	%		Concentration: 467				
Surrogate: Dichloroacetate	93 %		90-115	%		Concentration: 467				



## Certificate of Analysis

## Quality Control Section

## Anions by IC, EPA Method 9056 - Quality Control

Batch W4L1400 - EPA 300.1

## Blank (W4L1400-BLK1)

Prepared: 12/23/14 Analyzed: 12/23/14 09:45

Analyte	Sample Result	QC Result	Qualifier	Units	Spike Level	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Dichloroacetate		527		ug/l	500	105	90-115		
Surrogate: Dichloroacetate		527		ug/l	500	105	90-115		
Chlorate .....		ND		ug/l					
Chlorite .....		ND		ug/l					

## LCS (W4L1400-BS1)

Prepared: 12/23/14 Analyzed: 12/23/14 09:25

Analyte	Sample Result	QC Result	Qualifier	Units	Spike Level	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Dichloroacetate		498		ug/l	500	100	90-115		
Surrogate: Dichloroacetate		498		ug/l	500	100	90-115		
Chlorate .....		101		ug/l	100	101	85-115		
Chlorite .....		95.7		ug/l	100	96	85-115		

## Matrix Spike (W4L1400-MS1)

Source: 4L22050-01

Prepared: 12/23/14 Analyzed: 12/23/14 12:08

Analyte	Sample Result	QC Result	Qualifier	Units	Spike Level	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Dichloroacetate		500		ug/l	500	100	90-115		
Surrogate: Dichloroacetate		500		ug/l	500	100	90-115		
Chlorate .....	115000000	172000000		ug/l	50000000	114	76-120		
Chlorite .....	80000000	127000000		ug/l	50000000	93	78-129		

## Matrix Spike Dup (W4L1400-MSD1)

Source: 4L22050-01

Prepared: 12/23/14 Analyzed: 12/23/14 12:28

Analyte	Sample Result	QC Result	Qualifier	Units	Spike Level	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Dichloroacetate		508		ug/l	500	102	90-115		
Surrogate: Dichloroacetate		508		ug/l	500	102	90-115		
Chlorate .....	115000000	168000000		ug/l	50000000	107	76-120	2	20
Chlorite .....	80000000	128000000		ug/l	50000000	96	78-129	1	20

**Certificate of Analysis****Notes:**

The Chain of Custody document is part of the analytical report.

Any remaining sample(s) for testing will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

An Absence of Total Coliform meets the drinking water standards as established by the State of California Department of Health Services.

The Reporting Limit (RL) is referenced as laboratory's Practical Quantitation Limit (PQL).

For Potable water analysis, the Reporting Limit (RL) is referenced as Detection Limit for reporting purposes (DLRs) defined by EPA.

If sample collected by Weck Laboratories, sampled in accordance to lab SOP MIS002

**Authorized Signature**

Contact: Valerie Rejuso  
(Project Manager)



ELAP # 1132  
LACSD # 10143  
NELAC # 04229CA

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. Weck Laboratories certifies that the test results meet all requirements of NELAC unless noted in the Case Narrative. This analytical report must be reproduced in its entirety.*

**Flags for Data Qualifiers:**

ND	NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL).
Sub	Subcontracted analysis, original report enclosed.
DL	Method Detection Limit
RL	Method Reporting Limit
MDA	Minimum Detectable Activity
NR	Not Reportable



CENTER FOR TOXICOLOGY  
AND ENVIRONMENTAL HEALTH, LLC

Mission Incident  
Santa Paula, CA  
Preliminary Tote Visual Assessment  
December 30, 2014

Prepared by  
Center for Toxicology and Environmental Health, L.L.C. (CTEH®)



CENTER FOR TOXICOLOGY  
AND ENVIRONMENTAL HEALTH, LLC

Totes present within the perimeter of the Santa Clara Wastewater Co. facility were visually assessed and documented by CTEH® personnel as of December 30, 2014. Additional totes may be present that have not yet been discovered. Table 1 below contains a list of totes found including responder comments and category assigned by an onsite chemist. Table 2 contains a total count of totes organized by each category. Also attached is a map depicting each tote location within the facility as well as photos and documentation from field personnel.

Table 1 - Tote Inventory – Visual Assessment<sup>1</sup>

Tote ID	Comments	Category <sup>2</sup>
TT001	2-3inches of liquid in bottom, label says water softener brine	Empty
TT002	Very little liquid, label says water softener brine	Empty
TT003	Very little amount of water, written label says -salt softener regen brine	Empty
TT004	Small amount of liquid, contents on label salt softener regen brine	Empty
TT005	3/4 full, labeled as COPREP 320-L	Polymer
TT006	Thick white polymer	Polymer
TT007	Appears empty and with no label	Empty
TT008	There is a little bit of solid in the bottom, no label	Empty
TT009	About 80% full, labeled COPREP 460TC	Polymer
TT010	Very small amount of liquid present, labeled for sodium chlorite 31.25% active	Hypochlorite
TT011	Empty and unlabeled	Empty
TT012	Small amount of liquid in bottom, no label	Empty
TT013	Very small amount of liquid in bottom, no label	Empty
TT014	Unknown level of liquid, labeled for sulfuric acid	Acid
TT015	Labeled for sulfuric acid	Acid
TT016	Tote labeled for sulfuric acid very little liquid in side	Acid
TT017	700 gallon tote with 5-6 inches of fluid at the bottom, no label present	Peroxide
TT018	1/3rd full tote with labels for ferric sulfate 50% solution	Ferric Sulfate
TT019	Tote is approximately 15% full. Liquid is clear with some particulate matter.	Pres. Wash Container
TT020	Appears to be empty, no label apparent	Empty
TT021	4/5ths full, on raised platform, no label	Process Container
TT022	No label, seems to be at least half full, to looks dark, tote in 4-6 inches of liquid	Acid
TT023	1/4 full, no label, opaque liquid	Polymer
TT024	1/3 full of grey solid looking substance, no label	Polymer
TT025	Half full of liquid, no label,	Peroxide
TT026	About 10inches of liquid, no label	Process Container
TT027	250 gallons of unknown liquid, no label	Process Container
TT028	Large container 2/3rds full of hydrogen peroxide	Peroxide
TT029	Half full with hand written H2O2	Peroxide
TT030	COPREP 460TC on label and about 80% full	Process Container
TT031	3/4full, label says - COPREP 460TC	Process Container
TT032	Inside is dry, no label	Empty

<sup>1</sup>Note: The data set displayed here has not undergone complete QA/QC analysis and is presented in a preliminary format

<sup>2</sup>Totes categorized as Empty contain less than or equal to one inch of product (RCRA empty)

Table 1 - Tote Inventory – Visual Assessment (continued)<sup>1</sup>

Tote ID	Comments	Category <sup>2</sup>
TT033	About 12 inches of liquid on a stand, label unclear but says - 460TC	Process Container
TT034	12 inches of liquid no readable label	Process Container
TT035	2/3 full, on stand, no label	Process Container
TT036	About 1/3rd full, unknown liquid on raised stand, no label	Process Container
TT037	3/4 full of white polymer like substance with pump attached, labeled	Polymer
TT038	2/3rd full about 150-175 gallons of black liquid sitting in a plastic base with white fluid	Flammable
TT039	Empty Tank - updated duplicate ID from TT037 to TT039	Empty
TT040	Empty tote on elevated stand with label for ferric sulfate 50% solution	Empty
TT041	Empty tote labeled for caustic soda 50%	Empty
TT042	Empty ferric sulfate 50% solution tote	Empty
TT043	Empty tote labeled for hypochlorite solution	Empty
TT044	Empty tote labeled for caustic soda	Empty
TT045	Empty tote labeled for H2O2	Empty
TT046	No label present and 4-5 inches of liquid in the bottom	Process Container
TT047	White polymer-like substance in bottom 5-6 inches of tote. No label present	Polymer
TT048	Empty tote, degraded label, with bags of NaOH	Empty
TT049	Empty tote no label	Empty
TT050	Empty tote, no label	Empty
TT051	Tote appears empty and no label	Empty
TT052	Tote appears empty and no label	Empty
TT053	Empty tote, no label	Empty
TT054	Some solid in downslope corner of tote and no label	Empty
TT055	Empty tote labeled as COPREP 320 L	Empty
TT056	Appears empty, hand written label for waste water/dietary supp	Empty
TT057	No readable label and empty	Empty
TT058	Empty 50 gallon barrel, labeled for chlorine dioxide	Empty
TT059	Appears empty, no apparent label	Empty
TT060	Appears empty 50 gallon drum, label says, wolf berry liquid extract	Empty
TT061	In metal cage on platform, no label, 3-4 inches of liquid	Process Container
TT062	Empty container, no clear label	Empty
TT063	Deformed tote with no label	Empty
TT064	12 inches of clear liquid. Tote is in tan con ex box.	Acid

<sup>1</sup>Note: The data set displayed here has not undergone complete QA/QC analysis and is presented in a preliminary format<sup>2</sup>Totes categorized as empty contain less than or equal to one inch of product (RCRA empty)

Table 2 – Total Tote Count by Category

Totals <sup>1</sup>			
<b>Acid</b>	5	<b>Peroxide</b>	4
<b>Empty</b>	33	<b>Polymer</b>	7
<b>Ferric Sulfate</b>	1	<b>Pressure Wash Container</b>	1
<b>Flammable</b>	1	<b>Process Container</b>	11
<b>Hypochlorite</b>	1	<b>TOTAL</b>	<b>64</b>

<sup>1</sup>Note: The data set displayed here has not undergone complete QA/QC analysis and is presented in a preliminary format



# Tote Locations - 2014-12-30

Mission Incident

Project: 106846  
Client: Patriot Environmental  
City: Santa Paula, CA  
County: Ventura



## 106846 - MISSION INCIDENT Site Activities - Tote Visual Assessment

**ID:** 127203

**GPS:** 34.31482, -119.10429

**Date:** 2014/12/30 13:32 **Location Description:** West tote bank

**Primary Identifier:** TT001

**Observation Type:** Survey

**Secondary Identifier:** TT001

**Observation Subtype:** Existing Fixed Location

**Comments:** 2-3inches of liquid in bottom, label says water softener brine



**ID:** 127184

**GPS:** 34.31482, -119.10428

**Date:** 2014/12/30 13:31 **Location Description:** West tote farm

**Primary Identifier:** TT002

**Observation Type:** Survey

**Secondary Identifier:** TT002

**Observation Subtype:** Existing Fixed Location

**Comments:** Very little liquid, label says water softener brine



**ID:** 127206

**GPS:** 34.31487, -119.10429

**Date:** 2014/12/30 13:29 **Location Description:** West tote farm

**Primary Identifier:** TT003

**Observation Type:** Survey

**Secondary Identifier:** TT003

**Observation Subtype:** Existing Fixed Location

**Comments:** Very little amount of water, written label says -salt softener regen brine



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**ID:** 127163

**GPS:** 34.31491, -119.10426

**Date:** 2014/12/30 11:52 **Location Description:** West tote farm

**Primary Identifier:** TT004

**Observation Type:** Survey

**Secondary Identifier:** TT004

**Observation Subtype:** Existing Fixed Location

**Comments:** Small amount of liquid, contents on label salt softener regen brine



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**ID:** 127151

**GPS:** 34.31494, -119.1044

**Date:** 2014/12/30 11:23 **Location Description:** West tote farm

**Primary Identifier:** TT005

**Observation Type:** Survey

**Secondary Identifier:** TT005

**Observation Subtype:** Existing Fixed Location

**Comments:** 3/4 full, labeled as COPREP 320-L



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**ID:** 127272

**GPS:** 34.31492, -119.10442

**Date:** 2014/12/29 15:14 **Location Description:** West tote farm

**Primary Identifier:** TT006

**Observation Type:** Survey

**Secondary Identifier:** TT006

**Observation Subtype:** Existing Fixed Location

**Comments:** Thick white polymer



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**ID:** 127158

**GPS:** 34.3151, -119.1044

**Date:** 2014/12/30 11:26 **Location Description:** West tote farm

**Primary Identifier:** TT007

**Observation Type:** Survey

**Secondary Identifier:** TT007

**Observation Subtype:** Existing Fixed Location

**Comments:** Appears empty and with no label



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**ID:** 127182

**GPS:** 34.31498, -119.10439

**Date:** 2014/12/30 11:35 **Location Description:** West tote farm in B4

**Primary Identifier:** TT008

**Observation Type:** Survey

**Secondary Identifier:** TT008

**Observation Subtype:** Existing Fixed Location

**Comments:** There is a little bit of solid in the bottom, no label



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**ID:** 127150

**GPS:** 34.31507, -119.10432

**Date:** 2014/12/30 11:30 **Location Description:** West tote farm in B4

**Primary Identifier:** TT009

**Observation Type:** Survey

**Secondary Identifier:** TT009

**Observation Subtype:** Existing Fixed Location

**Comments:** About 80% full, labeled COPREP 460TC



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**ID:** 127164

**GPS:** 34.31504, -119.10427

**Date:** 2014/12/30 11:46 **Location Description:** Northeast side of B4

**Primary Identifier:** TT010

**Observation Type:** Survey

**Secondary Identifier:** TT010

**Observation Subtype:** Existing Fixed Location

**Comments:** Very small amount of liquid present, labeled for sodium chlorite 31.25% active



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**ID:** 127153

**GPS:** 34.31498, -119.10423

**Date:** 2014/12/30 11:48 **Location Description:** Tote in group between frac tanks near SW corner of hot zone.

**Primary Identifier:** TT011

**Observation Type:** Survey

**Secondary Identifier:** TT011

**Observation Subtype:** Existing Fixed Location

**Comments:** Empty and unlabeled



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**ID:** 127159

**GPS:** 34.31501, -119.10425

**Date:** 2014/12/30 11:45 **Location Description:** Tote in group between frac tanks near SW corner of hot zone

**Primary Identifier:** TT012

**Observation Type:** Survey

**Secondary Identifier:** TT012

**Observation Subtype:** Existing Fixed Location

**Comments:** Small amount of liquid in bottom, no label



**ID:** 127160

**GPS:** 34.31502, -119.10427

**Date:** 2014/12/30  
11:43

**Location Description:** Tote in group between frac tanks near SW corner  
of hot zone

**Primary Identifier:** TT013

**Observation Type:** Survey

**Secondary Identifier:** TT013

**Observation Subtype:** Existing Fixed Location

**Comments:** Very small amount of liquid in bottom, no Label



**ID:** 127148

**GPS:** 34.31453, -119.10442

**Date:** 2014/12/30 09:52

**Location Description:** A1 southwest of A2

**Primary Identifier:** TT014

**Observation Type:** Survey

**Secondary Identifier:** TT014

**Observation Subtype:** Existing Fixed Location

**Comments:** Unknown level of liquid, labeled for sulfuric acid



**ID:** 127139

**GPS:** 34.3145, -119.10444

**Date:** 2014/12/30 09:45

**Location Description:**

**Primary Identifier:** TT015

**Observation Type:** Survey

**Secondary Identifier:** TT015

**Observation Subtype:** Existing Fixed Location

**Comments:** Labeled for sulfuric acid



**ID:** 127144

**GPS:** 34.31451, -119.10439

**Date:** 2014/12/30 09:47 **Location Description:** A1 southwest of A2

**Primary Identifier:** TT016

**Observation Type:** Survey

**Secondary Identifier:** TT016

**Observation Subtype:** Existing Fixed Location

**Comments:** Tote labeled for sulfuric acid very little liquid in side



**ID:** 127136

**GPS:** 34.31453, -119.1044

**Date:** 2014/12/30 09:37 **Location Description:** A1 by fire fighters station

**Primary Identifier:** TT017

**Observation Type:** Survey

**Secondary Identifier:** TT017

**Observation Subtype:** Existing Fixed Location

**Comments:** 700 gallon tote with 5-6 inches of fluid at the bottom, no label present



**ID:** 127149

**GPS:** 34.3144, -119.10429

**Date:** 2014/12/30 09:33 **Location Description:** Next to fire station in A1

**Primary Identifier:** TT018

**Observation Type:** Survey

**Secondary Identifier:** TT018

**Observation Subtype:** Existing Fixed Location

**Comments:** 1/3rd full tote with labels for ferric sulfate 50% solution



**ID:** 127212

**GPS:** 34.31529, -119.10468

**Date:** 2014/12/30 09:27 **Location Description:** Tote on trailer of pressure washer

**Primary Identifier:** TT019

**Observation Type:** Survey

**Secondary Identifier:** TT019

**Observation Subtype:** Existing Fixed Location

**Comments:** Tote is approximately 15% full. Liquid is clear with some particulate matter. Tote is water container connected to pressure washer.



**ID:** 127189

**GPS:** 34.3153, -119.10433

**Date:** 2014/12/30 13:44 **Location Description:** Next to frac tank A2463

**Primary Identifier:** TT020

**Observation Type:** Survey

**Secondary Identifier:** TT020

**Observation Subtype:** Existing Fixed Location

**Comments:** Appears to be empty, no label apparent



**ID:** 127199

**GPS:** 34.31523, -119.10393

**Date:** 2014/12/30 13:55 **Location Description:** Northwest of patriot vac truck in pool

**Primary Identifier:** TT021

**Observation Type:** Survey

**Secondary Identifier:** TT021

**Observation Subtype:** Existing Fixed Location

**Comments:** 4/5ths full, on raised platform, no label



---

**ID:** 127177

**GPS:** 34.31446, -119.10401

**Date:** 2014/12/30 14:37 **Location Description:** Next to B1 and A1

**Primary Identifier:** TT022

**Observation Type:** Survey

**Secondary Identifier:** TT022

**Observation Subtype:** Existing Fixed Location

**Comments:** No label, seems to be at least half full, to looks dark, tote in 4-6 inches of liquid



---

**ID:** 127201

**GPS:** 34.31445, -119.10401

**Date:** 2014/12/30 14:40 **Location Description:** In unmarked area next to corner of A1 and B1

**Primary Identifier:** TT023

**Observation Type:** Survey

**Secondary Identifier:** TT023

**Observation Subtype:** Existing Fixed Location

**Comments:** 1/4 full, no label, opaque liquid



---

**ID:** 127185

**GPS:** 34.31446, -119.104

**Date:** 2014/12/30 14:42 **Location Description:** In unmarked area next to corner of A1 and B1

**Primary Identifier:** TT024

**Observation Type:** Survey

**Secondary Identifier:** TT024

**Observation Subtype:** Existing Fixed Location

**Comments:** 1/3 full of grey solid looking substance, no label



---

**ID:** 127204

**GPS:** 34.3144, -119.10402

**Date:** 2014/12/30 14:48 **Location Description:** In unmarked area next to corner of A1 and B1

**Primary Identifier:** TT025

**Observation Type:** Survey

**Secondary Identifier:** TT025

**Observation Subtype:** Existing Fixed Location

**Comments:** Half full of liquid, no label,



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**ID:** 127195

**GPS:** 34.31442, -119.10399

**Date:** 2014/12/30 14:47 **Location Description:** In unmarked area next to corner of A1 and B1

**Primary Identifier:** TT026

**Observation Type:** Survey

**Secondary Identifier:** TT026

**Observation Subtype:** Existing Fixed Location

**Comments:** About 10inches of liquid, no label



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**ID:** 127198

**GPS:** 34.31445, -119.10397

**Date:** 2014/12/30 14:45 **Location Description:** In unmarked area next to corner of A1 and B1

**Primary Identifier:** TT027

**Observation Type:** Survey

**Secondary Identifier:** TT027

**Observation Subtype:** Existing Fixed Location

**Comments:** 250 gallons of unknown liquid, no label



**ID:** 127193

**GPS:** 34.31455, -119.10392

**Date:** 2014/12/30 14:14 **Location Description:** East corner of B1

**Primary Identifier:** TT028

**Observation Type:** Survey

**Secondary Identifier:** TT028

**Observation Subtype:** Existing Fixed Location

**Comments:** Large container 2/3rds full of hydrogen peroxide



**ID:** 127197

**GPS:** 34.31462, -119.10385

**Date:** 2014/12/30 14:16 **Location Description:** East corner of B1

**Primary Identifier:** TT029

**Observation Type:** Survey

**Secondary Identifier:** TT029

**Observation Subtype:** Existing Fixed Location

**Comments:** Half full with hand written H2O2



**ID:** 127190

**GPS:** 34.31503, -119.10406

**Date:** 2014/12/30 14:03 **Location Description:** Border of C1 and C2

**Primary Identifier:** TT030

**Observation Type:** Survey

**Secondary Identifier:** TT030

**Observation Subtype:**

**Comments:** COPREP 460TC on label and about 80% full



**ID:** 127191

**GPS:** 34.31506, -119.10406

**Date:** 2014/12/30 14:06 **Location Description:** Border of C1 and C2

**Primary Identifier:** TT031

**Observation Type:** Survey

**Secondary Identifier:** TT031

**Observation Subtype:**

**Comments:** 3/4full, label says - COPREP 460TC



**ID:** 127183

**GPS:** 34.31461, -119.10386

**Date:** 2014/12/30 14:18 **Location Description:** East of B1

**Primary Identifier:** TT032

**Observation Type:** Survey

**Secondary Identifier:** TT032

**Observation Subtype:** Existing Fixed Location

**Comments:** Inside is dry, no label



**ID:** 127179

**GPS:** 34.31474, -119.10364

**Date:** 2014/12/30 14:23 **Location Description:** Southeast of frac tank A18460T

**Primary Identifier:** TT033

**Observation Type:** Survey

**Secondary Identifier:** TT033

**Observation Subtype:** Existing Fixed Location

**Comments:** About 12 inches of liquid on a stand, label unclear but says - 460TC



**ID:** 127202

**GPS:** 34.31475, -119.10368

**Date:** 2014/12/30 14:27 **Location Description:** Southeast of frac tank A1846OT

**Primary Identifier:** TT034

**Observation Type:** Survey

**Secondary Identifier:** TT034

**Observation Subtype:** Existing Fixed Location

**Comments:** 12 inches of liquid no readable label



**ID:** 127200

**GPS:** 34.3148, -119.10334

**Date:** 2014/12/30 14:57 **Location Description:** By water and mulch pile

**Primary Identifier:** TT035

**Observation Type:** Survey

**Secondary Identifier:** TT035

**Observation Subtype:** Existing Fixed Location

**Comments:** 2/3 full, on stand, no label



**ID:** 127145

**GPS:** 34.31448, -119.10397

**Date:** 2014/12/30 09:11 **Location Description:** On concrete pad across from plastic wrapped shack

**Primary Identifier:** TT036

**Observation Type:** Survey

**Secondary Identifier:** TT036

**Observation Subtype:** Existing Fixed Location

**Comments:** About 1/3rd full, unknown liquid on raised stand, no label



**ID:** 127135

**GPS:** 34.31446, -119.10397

**Date:** 2014/12/30  
09:07

**Location Description:** Across from plastic covered shack on concrete pad

**Primary Identifier:** TT037

**Observation Type:** Survey

**Secondary Identifier:** TT037

**Observation Subtype:** Existing Fixed Location

**Comments:** 3/4 full of white polymer like substance with pump attached, labeled



**ID:** 127142

**GPS:** 34.31459, -119.10374

**Date:** 2014/12/30 08:56 **Location Description:** Adjacent to decon C

**Primary Identifier:** TT038

**Observation Type:** Survey

**Secondary Identifier:** TT038

**Observation Subtype:** Existing Fixed Location

**Comments:** 2/3rd full about 150-175 gallons of black liquid sitting in a plastic base with white fluid



**ID:** 127140

**GPS:** 34.31414, -119.10381

**Date:** 2014/12/30 08:52 **Location Description:** Adjacent to decon C

**Primary Identifier:** TT039

**Observation Type:** Survey

**Secondary Identifier:** TT039

**Observation Subtype:** New Fixed Location

**Comments:** Empty Tank - updated duplicate ID from TT037 to TT039



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**ID:** 127146

**GPS:** 34.31448, -119.10418

**Date:** 2014/12/30 09:22 **Location Description:** East the southeast corner of A1 and B1

**Primary Identifier:** TT040

**Observation Type:** Survey

**Secondary Identifier:** TT040

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote on elevated stand with label for ferric sulfate 50% solution



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**ID:** 127141

**GPS:** 34.31438, -119.10434

**Date:** 2014/12/30 09:26 **Location Description:** A1 south of firefighters station

**Primary Identifier:** TT041

**Observation Type:** Survey

**Secondary Identifier:** TT041

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote labeled for caustic soda 50%



---

**ID:** 127147

**GPS:** 34.31448, -119.1043

**Date:** 2014/12/30 09:30 **Location Description:** A1 by fire fighters station

**Primary Identifier:** TT042

**Observation Type:** Survey

**Secondary Identifier:** TT042

**Observation Subtype:** New Fixed Location

**Comments:** Empty ferric sulfate 50% solution tote



**ID:** 127138

**GPS:** 34.31454, -119.10445

**Date:** 2014/12/30 09:41 **Location Description:** A1 southwest of A2

**Primary Identifier:** TT043

**Observation Type:** Survey

**Secondary Identifier:** TT043

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote labeled for hypochlorite solution



**ID:** 127143

**GPS:** 34.31456, -119.10437

**Date:** 2014/12/30 09:50 **Location Description:** A1 southwest of A2

**Primary Identifier:** TT044

**Observation Type:** Survey

**Secondary Identifier:** TT044

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote labeled for caustic soda



**ID:** 127137

**GPS:** 34.31454, -119.10448

**Date:** 2014/12/30 09:53 **Location Description:**

**Primary Identifier:** TT045

**Observation Type:** Survey

**Secondary Identifier:** TT045

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote labeled for H2O2



**ID:** 127188

**GPS:** 34.31495, -119.10341

**Date:** 2014/12/30 10:52

**Location Description:** Southwest side of saturated media pile next to container ARTU 7001808

**Primary Identifier:** TT046

**Observation Type:** Survey

**Secondary Identifier:** TT046

**Observation Subtype:** New Fixed Location

**Comments:** No label present and 4-5 inches of liquid in the bottom



**ID:** 127192

**GPS:** 34.31498, -119.10345

**Date:** 2014/12/30 10:55

**Location Description:** Southwest side of saturated media pile next to container ARTU 7001808

**Primary Identifier:** TT047

**Observation Type:** Survey

**Secondary Identifier:** TT047

**Observation Subtype:** New Fixed Location

**Comments:** White polymer like substance in bottom 5-6 inches of tote. No label present



**ID:** 127155

**GPS:** 34.31496, -119.10439

**Date:** 2014/12/30 11:17

**Location Description:** B4 next to water truck

**Primary Identifier:** TT048

**Observation Type:** Survey

**Secondary Identifier:** TT048

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote, degraded label, with bags of NaOH



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**ID:** 127180

**GPS:** 34.31497, -119.10439

**Date:** 2014/12/30 11:19 **Location Description:** B4

**Primary Identifier:** TT049

**Observation Type:** Survey

**Secondary Identifier:** TT049

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote no label



---

**ID:** 127157

**GPS:** 34.315, -119.10432

**Date:** 2014/12/30 11:21 **Location Description:** B4

**Primary Identifier:** TT050

**Observation Type:** Survey

**Secondary Identifier:** TT050

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote, no label



---

**ID:** 127156

**GPS:** 34.31498, -119.1044

**Date:** 2014/12/30 11:28 **Location Description:** West tote farm in B4

**Primary Identifier:** TT051

**Observation Type:** Survey

**Secondary Identifier:** TT051

**Observation Subtype:** New Fixed Location

**Comments:** Tote appears empty and no label



---

**ID:** 127154

**GPS:** 34.31506, -119.10427

**Date:** 2014/12/30 11:29 **Location Description:** West tote farm in B4

**Primary Identifier:** TT052

**Observation Type:** Survey

**Secondary Identifier:** TT052

**Observation Subtype:** New Fixed Location

**Comments:** Tote appears empty and no label



---

**ID:** 127186

**GPS:** 34.315, -119.10434

**Date:** 2014/12/30 11:37 **Location Description:** West tote farm in B4

**Primary Identifier:** TT053

**Observation Type:** Survey

**Secondary Identifier:** TT053

**Observation Subtype:** New Fixed Location

**Comments:** Empty tote, no label



---

**ID:** 127161

**GPS:** 34.31498, -119.10429

**Date:** 2014/12/30 11:38 **Location Description:** West tote farm

**Primary Identifier:** TT054

**Observation Type:** Survey

**Secondary Identifier:** TT054

**Observation Subtype:** New Fixed Location

**Comments:** Some solid in downslope corner of tote and no label



**ID:** 127162

**GPS:** 34.31502, -119.10435

**Date:** 2014/12/30 11:41 **Location Description:** West tote farm in B4

**Primary Identifier:** TT055 **Observation Type:** Survey

**Secondary Identifier:** TT055 **Observation Subtype:** New Fixed Location

**Comments:** Empty tote labeled as COPREP 320 L



**ID:** 127152

**GPS:** 34.31493, -119.1043

**Date:** 2014/12/30 11:50 **Location Description:** South side of tote farm in B4

**Primary Identifier:** TT056 **Observation Type:** Survey

**Secondary Identifier:** TT056 **Observation Subtype:** New Fixed Location

**Comments:** Appears empty, hand written label for waste water/dietary supp



**ID:** 127187

**GPS:** 34.31484, -119.10432

**Date:** 2014/12/30 13:35 **Location Description:** West tote farm in B2

**Primary Identifier:** TT057 **Observation Type:** Survey

**Secondary Identifier:** TT057 **Observation Subtype:** New Fixed Location

**Comments:** No readable label and empty



---

**ID:** 127178

**GPS:** 34.31529, -119.10465

**Date:** 2014/12/30 13:38 **Location Description:** Next to northwest fence line

**Primary Identifier:** TT058

**Observation Type:** Survey

**Secondary Identifier:** TT058

**Observation Subtype:** New Fixed Location

**Comments:** Empty 50 gallon barrel, labeled for chlorine dioxide



---

**ID:** 127205

**GPS:** 34.3153, -119.1044

**Date:** 2014/12/30 13:48 **Location Description:** West of frac tank A2463

**Primary Identifier:** TT059

**Observation Type:** Survey

**Secondary Identifier:** TT059

**Observation Subtype:** New Fixed Location

**Comments:** Appears empty, no apparent label



---

**ID:** 127194

**GPS:** 34.3153, -119.10431

**Date:** 2014/12/30 13:50 **Location Description:** West of frac tank A2463

**Primary Identifier:** TT060

**Observation Type:** Survey

**Secondary Identifier:** TT060

**Observation Subtype:** New Fixed Location

**Comments:** Appears empty 50 gallon drum, label says, wolf berry liquid extract



**ID:** 127181

**GPS:** 34.31518, -119.10381

**Date:** 2014/12/30 13:59

**Location Description:** Northwest of pool next to green vertices

**Primary Identifier:** TT061

**Observation Type:** Survey

**Secondary Identifier:** TT061

**Observation Subtype:** New Fixed Location

**Comments:** In metal cage on platform, no label, 3-4 inches of liquid



**ID:** 127196

**GPS:** 34.31481, -119.10371

**Date:** 2014/12/30 14:21

**Location Description:** Northeast of B1 next to pool

**Primary Identifier:** TT062

**Observation Type:** Survey

**Secondary Identifier:** TT062

**Observation Subtype:** New Fixed Location

**Comments:** Empty container, no clear label



**ID:** 127207

**GPS:** 34.31496, -119.10329

**Date:** 2014/12/30 15:00

**Location Description:** By saturated media pile and green light plant

**Primary Identifier:** TT063

**Observation Type:** Survey

**Secondary Identifier:** TT063

**Observation Subtype:** New Fixed Location

**Comments:** Deformed tote with no label



---

**ID:** 127320

**GPS:** 34.31509, -119.10387

**Date:** 2015/01/01 16:21 **Location Description:** TR064

**Primary Identifier:** TT064

**Observation Type:** Survey

**Secondary Identifier:** Tote

**Observation Subtype:** New Fixed Location

**Comments:** 12 inches of clear liquid. Tote is in tan con ex box.





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CONSULTING, INC.

374 Poli Street, Suite 200 • Ventura, CA 93001

**Final Report - Emergency Use Authorization  
Santa Clara Waste Water Facility  
815 Mission Rock Road  
Santa Paula, California 93060  
APN 099-0-060-565**

**January 30, 2018**

**SESPE Project GR10.15.02**

**Prepared for:**

Ventura County Planning Division  
800 S. Victoria Avenue, L#1740  
Ventura, California 93009

**Prepared by:**

SESPE Consulting, Inc.  
374 Poli Street, Suite 200  
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**SESPE**  
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SESPE Project GR10.15.02

---

Mike Biedebach  
Project Manager

---

Rob Dal Farra  
Vice President



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**January 30, 2018**

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# SESPE

CONSULTING, INC.

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## FIGURE

Figure 1 Site Aerial

## APPENDICES

APPENDIX 1	SCWW Tank Cleaning Log Sheets
APPENDIX 2	Simi Valley Landfill Manifest Records
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**Final Report - Emergency Use Authorization  
Santa Clara Waste Water Facility  
815 Mission Rock Road  
Santa Paula, California 93060  
APN 099-0-060-565**

**January 30, 2018**

**1.0 INTRODUCTION**

This Final Report presents a summary of activities conducted under the Emergency Use Authorization, issued by the Ventura County Planning Division (County Planning) for the Santa Clara Waste Water (SCWW) Facility property located at 815 Mission Rock Road ("Site"), near Santa Paula, in Ventura County, California. See Figure 1 for a Site Aerial.

**1.1 Purpose**

Section 8111-1.2.1.c(1) of the Ventura County Non-Coastal Zoning Ordinance (NCZO) authorizes the County Planning Director to allow certain actions in the case of an emergency, including issuance of an Emergency Use Authorization (EUA).

**1.2 Background**

On November 18, 2014, there was an accidental explosion and subsequent fire at the SCWW Facility. Given the exigent circumstances and to expedite ongoing response actions at the facility, SCWW requested issuance of an EUA. On April 20, 2015, the County Planning Director issued the EUA. Subsequently, over the course of the project, the EUA was extended by County Planning, with the most recent extension granted on October 31, 2017.

The EUA request included the following procedures:

- Operating Procedure SCWW-02, Industrial Waste Process Tanks Solidification Plan, dated March 31, 2015 (IWP 2015).
- Operating Procedure SCWW-03, Domestic Waste Process Tanks Solidification Plan, dated March 31, 2015 (DWP 2015).

These documents were developed to address the contents of 94 portable 500 barrel (bbl) baker tanks, 7 on-Site clarifier processing tanks, and 92-120 bbl "poly" tanks. The procedures outline the processes by which the contents of these tanks would be safely monitored, tested for analytical parameters, emptied, cleaned and non-hazardous wastes properly disposed of to an approved landfill facility, all under the oversight and approval of the County.

Copies of all EUA submittals and correspondence are on file with the County.

### **1.3 EUA Compliance**

As a condition of the EUA, various compliance requirements were imposed by the County, including the following:

- Condition 7: required SCWW to retain the services of an independent Certified Testing Laboratory (CTL) accredited by the California Department of Public Health.
- Condition 8: required SCWW to submit a sampling plan to the County for review and approval, and to submit hazardous waste determination (HWD) reports based upon the analytical findings.
- Condition 9: required SCWW to provide VCEHD a minimum of 24 hours notice for all material sampling and removal activities.
- Condition 12: required SCWW to submit written daily reports to the VCEHD in conformance with Section 9.0 of both the DWP and the IWP plans during waste handling and removal activities.
- Condition 14: required SCWW to submit, upon completion of the handling and removal activities, a final EUA report.

### **1.4 Certified Laboratory**

BC Laboratories, Inc (BCL) provided field staff to conduct all sampling required on the Site during the duration of the project. BCL's reports were delivered directly to the Ventura County Environmental Health Department (VCEHD), and were also separately conveyed to VCEHD by SESPE via emails or in HWD reports.

### **1.5 Hazardous Waste Determination (HWD) Reports**

Each tank/clarifier was tested for the following laboratory parameters as required by Condition 8:

- Inorganic Persistent and Bioaccumulative Toxic Substances (CAM 17 Metals)
- Volatile Organic Compounds - EPA 8260
- pH
- Acute Aquatic 96-hour LC 50 Bioassay
- Radiochemistry (gross beta analysis)

Numerous HWD reports were submitted to VCEHD, including requests by SCWW for approval to clean the various on-Site tanks. In general, VCEHD responded in writing to the HWD reports and would either approve or deny the findings. In some instances, additional testing was required. SCWW complied with these requirements and copies of all HWD reports are on file with the County.

### **1.6 60-Day Progress Reports**

The EUA extension, granted by the County on January 28, 2016, added a requirement to submit 60-day progress reports describing work completed and outstanding tasks. SCWW complied with this requirement and copies of all 60-day progress reports are on file with the County.

### **1.7 Tank Cleaning Documentation**

Condition 14 required, among other things, that an accounting be made of the materials removed from the tanks, amount of water added to the materials removed, and the amount of sorbent (mulch) used (each by weight). SCWW staff maintained a tank manifest log sheet for the baker tanks and clarifiers. A copy of these log sheets is attached as Appendix 1.

## **2.0 BAKER TANK CLEANING**

All work performed by SCWW in connection with the emptying, cleaning and disposal of waste from baker tanks at the Site was completed pursuant to notices to and approvals by the VCEHD. During this process, numerous HWD reports were submitted to VCEHD, including requests for County approval to proceed with any proposed cleaning activities. Generally, the County responded in writing to the HWD reports and would either approve or deny the cleaning of select tanks. SCWW complied with the County's requirements and copies of all HWD reports are on file with the County.

### **2.1 Non-Hazardous Waste Disposal**

Upon approval from the County to clean and dispose of tank contents as non-hazardous waste, there were several possible steps involved with the process, including: bulk liquid removal, sludge/solids removal, and final tank cleaning. Various disposal facilities, depending upon waste type, were used including:

- Simi Valley Landfill
- Green Compass Environmental Services – Orange County Facility
- Saugus Liquid Waste Disposal
- Chiquita Landfill
- Avalon Environmental Services

Manifests for wastes sent to these facilities are attached in Appendices 2 - 6. In addition, mulch was used as the primary material to help solidify sludge/solids. In early 2017, Simi Valley landfill changed its policy on the use of mulch and required that soil be used for mixing. SCWW obtained its mulch from Agromin (see Appendix 7) and soil from Santa Paula Materials (see Appendix 8).

### **2.2 Skim Oil Tanks**

In a letter dated August 18, 2015, SCWW requested approval from VCEHD to skim and sell oil in tanks 85 and 86. VCEHD approved the sale and transfer of the oil on August 21, 2015. The oil was collected in a vacuum truck and transferred to 25 Hill Properties in Taft, California, an oil production company. SCWW complied with the County's requirements with respect to all oil skim activities, and copies of relevant correspondence are on file with the County. See Appendix 9 for manifests.

Additional oil skim and transfers took place, with County approval, as follows:

- February 1, 2016: County approved skimming of crude oil in tanks 45, 73, 76, and 77 and transfer of the oil to tank 86. From tank 86, the oil would be collected in a vacuum

and transferred to 25 Hill Properties.

- March 9, 2016: County approved request to sell crude oil from tank 86 to 25 Hill Properties, and continued use of tank 86 as a skim oil consolidation tank for oil skimmed from other on-Site tanks. SCWW was required to analyze the contents of tank 86 for TCLP Benzene.
- April 18, 2016: County approved skimming of crude oil from 14 tanks on the Site, and transfer of the contents to tank 86.
- May 25, 2016: County approved request to skim oil from 7 tanks on the Site, and transfer of the contents to tank 86, and further to clean and rinse out the contents of the 7 tanks into 1-2 tanks. SCWW was required to analyze the contents of the consolidation tanks for TCLP Benzene.
- July 25, 2016: County approved revised request for oil skimming and consolidation.

### **2.3 Oil Skimming Transfers to 25 Hill Properties in Taft, CA**

Transfers of skimmed crude oil to 25 Hill Properties occurred on the following dates, in the following quantities:

- 9/16/15: 40 bbls and 165 bbls
- 3/24/16: 110 bbls and 110 bbls
- 4/1/16: 110 bbls, 110 bbls and 110 bbls
- 4/8/16: 110 bbls, 75 bbls, 115 bbls, 110 bbls
- 4/29/16: 100 bbls, 110 bbls and 110 bbls
- 4/1/16: 110 bbls, 110 bbls and 110 bbls
- 5/6/16: 110 bbls, 100 bbls and 110 bbls
- 5/27/16: 50 bbls 50 bbls
- 6/2/16: 110 bbls, 110 bbls and 100 bbls
- 6/10/16: 110 bbls, 100 bbls and 100 bbls
- 6/20/16: 110 bbls, 110 bbls and 100 bbls
- 1/12/17: 114 bbls
- 3/13/17: 80 bbls
- 8/10/17: 80 bbls
- 9/13/17: 55 bbls
- 10/10/17: 25 bbls

As noted above, SCWW complied with the County's requirements with respect to oil skimming activities and transfers, and copies of relevant correspondence and manifests are on file with the County.

### **2.4 Final Benzene TCLP Tanks**

After all of the oil skimming and consolidation efforts, tanks 14-18 were the final tanks that required a benzene TCLP analysis. Some additional oil skimming from these tanks was also conducted. This work was performed pursuant to and in compliance with requirements set forth in written or verbal correspondence with VCEHD between August 25 – October 25, 2017.

## 2.5 SCWW Regulatory Discussion of the Benzene TCLP Testing Results

As set forth in prior correspondence to the County, SCWW has consistently asserted that all materials stored in on-Site baker tanks were derived from oil field production, and therefore were subject to the crude oil exploration and production (E&P) hazardous waste exclusion set forth in Title 40, Code of Federal Regulations, Section 261.4(b)(5) and Title 22, California Code of Regulations, Section 66261.4(b)(2). While the County disagreed, SCWW reserves all rights regarding its previous legal, factual and technical arguments.

## 2.6 HWD Report for the Benzene TCLP Tanks

On behalf of SCWW, SESPE submitted a HWD to VCEHD on December 22, 2017, documenting the results of all previous sampling results for certain on-Site tanks. The results from the analyses conducted by BCL determined that the contents of tanks 14, 15, and 18 were non-hazardous; the County concurred and the contents of these tanks were disposed of as non-hazardous waste.

To facilitate timely site closure, and with VCEHD's approval, the residual contents of tanks 16 and 17 were removed and disposed of as hazardous waste to DeMenno/Kerdoon (D/K) in Compton, CA. Copies of relevant correspondence are on file with the County and copies of the D/K manifests are found in Appendix 10<sup>1</sup>. It should be noted, pursuant to section 2.5 above, that SCWW disputed, and continues to dispute, characterization of these wastes as hazardous pursuant to the E&P exclusion, and reserves all rights regarding its previous legal, factual and technical arguments. The manifests to D/K confirm that SCWW disputed VCEHD's determination and that the wastes were disposed of as hazardous solely to expedite a resolution of the waste characterization dispute with VCEHD.

<sup>1</sup>Appendix 10 includes two sheets from each of the D/K manifests. One copy set provided by Clean Harbors is more legible, but does not include handwritten notes prepared concurrently on the manifest copy sheets by Mike Legan of SCWW reserving rights with respect to waste characterization issues.

## 3.0 POLY TANKS

In addition to the baker tanks, there was also an inventory of 77 "poly" tanks on the Site that generally contained processed waste. The poly tanks measured 5,000 gallons in size, or 120 bbls, and the level or volume of each tank varied.

The protocols for addressing these tanks, and sampling their contents, were established with the County's approval, as follows:

- January 9, 2017: County approves SESPE's request to initiate sampling of the 77 poly tanks pursuant to a sampling plan. Sampling results were summarized in a Hazardous Waste Determination Report, dated March 27, 2017, which is on file with the County. The BCL testing results showed contents of all of the sampled tanks were non-hazardous.

April 26, 2017: County concurred with the HWD findings, and approved emptying and cleaning of the tanks, with the contents to be disposed of as non-hazardous waste. SCWW transferred the contents from the poly tanks to large Baker tanks and then

rinsed clean all of the poly tanks. All rinse water from the poly tanks was collected and transported to Avalon Environmental, in Gardena, CA. Solids were solidified in the on-Site mixing pit and the contents were transported to Chiquita Landfill, in Simi Valley, CA.

SCWW complied with the County's requirements with respect to the poly tanks, and copies of relevant correspondence and manifests are on file with the County.

#### **4.0 CHEMICAL TOTES**

There were a number of chemical poly totes that existed on the Site. The totes measured approximately 275 gallons, and varied in size. Many of these totes were originally inventoried in December 2014 by Center for Toxicology and Environmental Health (CTEH). The CTEH inventory accounted for 64 separate containers, which included chemical totes (raw materials), process totes, along with several poly tanks and a 55-gallon drum.

These materials were moved by the cleanup contractor in late 2014 and early 2015 to the southern portion of the Site where they were stored in rows, on visqueen, and segregated by material type (corrosive, flammable, oxidizer, polymer, empty). As cleanup of the Site progressed, additional containers and materials were also relocated to the southern portion of the Site.

##### **4.1 Ventura County Fire Protection District Permit**

During the EUA process, County Planning requested the relocation of all materials stored on the southern portion of the Site. In January 2016, SCWW submitted an application for a Fire Code Permit to Ventura County Fire Protection District, authorizing storage of the chemical totes in three different areas on the northern portion of the Site covered by the existing CUP. The storage areas were designated by material type (acid, peroxide, corrosive/flammable/other). The Fire Department conducted an inspection and issued the final approved Fire Code Permit on March 15, 2016. Thereafter, the chemical totes were moved to their new storage locations at the end of March 2016. A collection of other empty/mostly empty totes were moved to a new location on the south side of the poly tanks.

SCWW obtained bids from contractors to remove the chemical totes. On August 9, 2017, SESPE submitted a Request to Remove the Chemical Totes to VCEHD, seeking approval to have a waste disposal contractor properly remove and dispose the chemical totes.

On December 20 and 27, 2017, Clean Harbors removed all of the chemical totes and some small containers containing waste materials, which were transferred to various Clean Harbors facilities. Copies of these manifests are found in Appendix 11.

On January 12, 2018, SESPE submitted a letter to the Fire Department to revoke the Fire Code Permit. Ms. Marnel Vanden Bossche processed this request and conducted a site inspection on January 18, 2017 to verify all hazardous materials had been removed from the Site. Per email correspondence dated January 18, 2018, Ms. Vanden Bossche confirmed the permit was revoked.

##### **4.2 Petromax**

An inventory of a chemical called "Petromax" was found in a storage container on the Site by VCEHD

during an inspection on November 6, 2015. The Petromax inventory included nineteen 275-gallon totes and seven 55-gallon drums.

On January 26, 2017, SCWW arranged for proper disposal of the entire Petromax inventory to the Clean Harbors facility in Buttonwillow, California. Hazardous waste labels were applied to all of the Petromax containers, which were removed under a Uniform Hazardous Waste Manifest and generator ID Number of CAC002893261. It should be noted that SCWW disputed, and continues to dispute, characterization of these wastes as hazardous pursuant the detailed legal and technical arguments previously submitted, and reserves all rights regarding its previous legal, factual and technical arguments. Along these lines, the manifest stated as follows: "This inventory of Petromax is being removed and disposed of under this manifest solely in response to a Notice issued by the County of Ventura; and SCWW reserves all rights and makes no admissions or waivers of rights in doing so."

SCWW complied with the County's requirements with respect to removal and disposal of the Petromax, and copies of relevant correspondence and manifests are on file with the County.

#### **4.3 Sodium Chlorite Tote**

On November 7, 2017, VCEHD approved the emptying, disposal and cleaning of the sodium chlorite tote. SCWW emptied and rinsed the tote and transferred the residual and wash out material into a new, clean 55-gallon drum. The drum was picked up by Clean Harbors on December 27, 2017, along with other waste containers as referenced above. The original and cleaned sodium chlorite tote was wrapped with visqueen and labeled, and is currently being stored south of clarifier 6 (C6).

SCWW complied with the County's requirements with respect to removal and disposal of the sodium chlorite tote, and copies of relevant correspondence and manifests are on file with the County.

### **5.0 COUNTY INSPECTIONS**

VCEHD conducted CUPA (Certified Unified Program Agency) inspections on November 6 and December 9, 2015, and July 8, 2016.

SCWW responded to and has addressed the County's comments as set forth in VCEHD's Inspection Report/Notice to Comply for each inspection, including detailed correspondence on various issues. Copies of these inspection reports and all relevant correspondence are on file with the County. It should be noted that SCWW disputed, and continues to dispute, various of the County's findings as set forth in the detailed legal and technical arguments previously submitted, and reserves all rights regarding its previous legal, factual and technical arguments.

#### **5.1 California Environmental Reporting System (CERS) Update**

On January 5, 2018, SCWW updated the online CERS account for the Site. Specifically, the Business Activities document was updated to reflect that no hazardous materials remain on the Site.

## **6.0 POST EUA CLOSURE**


Currently there are no operations at the Site. SCWW is currently in the process of seeking a modified CUP from County Planning. In the interim, the Site will remain vacant during this CUP processing period. Security is maintained by many motion-activated cameras that are located throughout the property and monitoring by Bay Alarm.

Figure 1 depicts the current Post-EUA site.



E = Electrical  
 C = Camera Location  
 I = Sodium Chlorite Tote # 10 Location  
 (Empty/Clean)  
 SC = Shipping Container (Storage)  
 OW = California Resources Production Oil Well  
 "585" 17

All Baker Tanks Empty  
 All Poly Tanks Empty  
 All Clarifier Tanks Empty

			
<b>SITE AERIAL</b> <b>SCWW</b>			
1/5/18 aerial (revised)			
FIGURE	I	DATE	
SCALE	NA	DRAWN BY:	

**SESPE**  
 CONSULTING, INC.

1/23/2018 - 11:11 AM

## NOTICE OF VIOLATION

Santa Clara Waste Water Treatment Facility

**CONDITIONAL USE PERMIT NO. LU11-0011**  
(Modification of CUP 960-2)

Please Reply to:  
Franca Rosengren  
(805) 654-2045  
FAX (805) 654-2509  
Franca.Rosengren@ventura.org

August 10, 2015

Green Compass  
(Santa Clara Waste Water)  
Attn: Bill Mitzel  
2775 North Ventura Road, Suite 209  
Oxnard, CA 93036

**SUBJECT:** Violation Case No.: PV15-0020  
Assessor's Parcel No.: ("APN") 099-0-060-165  
Permit No.: LU06-0011 (Modification CUP No. 960)  
Location: 815 Mission Rock Road, Santa Paula

Dear Mr. Mitzel:

The Planning Division confirmed that violations of the Ventura County Non-Coastal Zoning Ordinance (NCZO) and the conditions of approval of Conditional Use Permit (CUP) LU06-0011 exist on the subject property.



CUP LU06-0011 was granted by the Ventura County Planning Commission on July 29, 2010 to authorize an upgrade of the existing waste water treatment facility (Santa Clara Waste Water) by changing the operations from an open aeration pond system to a closed tank vessel system, and for the abatement of Zoning Violation Case No. ZV87-0027 for the expansion of the facility without the required permits.

The violations of CUP LU06-0011 identified to exist at the SCWW facility are discussed below along with the relevant code sections or permit conditions:

**1) Expansion of the Santa Clara Waste Water Treatment Facility (SCWW) beyond the approved boundaries set forth in CUP No. LU06-0011.**

**Section 8101-3.1 of the Non-Coastal Zoning Ordinance (NCZO) [in part]:**

*No structure shall be moved onto a site, erected, reconstructed, added to, enlarged, advertised on, structurally altered or maintained, and no structure or land shall be used or maintained for any purpose, except as specifically provided and allowed this Chapter[...].*

**Condition No.4 of LU06-0011(CUP Modification) [in part]:**

*Prior to undertaking any operational or construction-related activity which is not expressly described in these conditions or applicable exhibits, the permittee must contact the Planning Director to determine if the activity requires a modification of this CUP. The Planning Director may, at the Planning Director's discretion, require that the permittee file a written and/or mapped description of the proposed activity prior to rendering a decision on whether a CUP modification is required. [...]*

The SCWW facility is authorized to operate only within the area encompassed by the CUP boundary line delineated on the approved project plans. The authorized permit area coincides with the limits of Assessor's Parcel No. (APN) 099-0-060-165.

At the July 29, 2015 site inspection, Planning staff observed that the facility has expanded beyond the approved CUP boundary line onto approximately 1.67 acres of adjacent land on the adjoining parcels (APNs: 099-0-060-495, -515 and -045). The expansion includes the storage of facility equipment, above-ground piping, and installation of new impervious surfaces (i.e. concrete). A concrete truck loading area has been constructed in a manner that requires the use of the adjoining property located outside of the permit area. According to the Planning Division's records, the expansion of the facility has occurred without the required County permits.

**Abatement can be achieved by:**

The permittee shall remove all equipment and structures associated with the operation of the SCWW facility from the area outside of the permit boundary specified in CUP LU06-0011 within 30-days of the date of this letter. This includes the area encompassed by APNs 099-0-060-495, -515, and -045. Failure to remove all equipment and structures located in the un-permitted expanded operation area within 30 days of the date of this letter will result in a Notice of Non-compliance recorded against the property. **However, equipment and materials used as part of the site clean-up activities authorized by the April 20, 2015 Emergency Use Authorization (EUA) issued by the County Planning Division may remain on the subject properties while the EUA is in effect. The equipment or materials allowed to remain will be at the discretion of the County Planning Director.**

The Planning Division understands that the permittee would like to expand the SCWW facility to include the area encompassed by APNs 099-0-060-495, -515, and -045. If this is the case, please submit a revised project description and site plan that includes the proposed expansion area as part of the PL15-0106 application. Until authorized by the County, no equipment or structures shall be installed, used or stored in the un-permitted expansion area.

**2) The required on-site landscaping has not been installed or maintained.**

**Sec. 8109-0.6.4 (d) of the NCZO:**

*(d) At least five percent of any permit area in the M2 or M3 zone shall be landscaped.*

**Condition No. 22(b) and (c) (Landscape Requirements) [in pertinent part]:**

*(b) [...] the permittee shall install all landscaping, irrigation systems, and plantings according to the Planning Director-approved landscape and planting plan.*

*(c) The Permittee shall maintain all landscaping, irrigation systems, and plantings according to the Planning Director-approved landscape and planting plan [...].*

**Condition No. 31(g) (Landscape Areas):**

*Landscaped areas shall be designed with efficient irrigation to reduce runoff and promote surface filtration and minimize the use of fertilizers and pesticides that can contribute to urban runoff pollution. Unless otherwise recommended in the soils report, on-site stormwater discharges (including roof drains if applicable) shall be directed toward landscaped areas to the maximum extent practicable.*

At the site inspection, Planning staff observed that none of the required on-site landscaping had been installed or maintained at the facility. The July 29, 2010 approved site plan depicts a 20-foot wide, 2-foot high landscape berm along the edges of the permit area. Additionally, the approved landscaping plan, dated November 5, 2013, requires the following California native plant species to be planted: Yucca, Desert Olive, and Big Sagebrush. This required landscaping has not been installed.

**Abatement can be achieved by:**

The permittee shall submit a revised project description and site plan as part of the permit modification application (PL15-0106) which includes either of the following:

- (1) the previously-approved landscape and planting plan; or,
- (2) a modified landscape and planting plan.

Upon the granting of a modified conditional use permit and installation of the required landscaping, the violation will be abated.

**3) A freestanding sign has been erected without the required permits.**

**Section 8101-3.1 of the NCZO (in part):**

*No structure shall be moved onto a site, erected, reconstructed, added to, enlarged, advertised on, structurally altered or maintained, and no structure or land shall be used or maintained for any purpose, except as specifically provided and allowed this Chapter[...].*

**Condition No. 19 of LU06-0011 (in part):**

*[...] the permittee shall submit two copies of a Sign Plan to the Planning Division for review and approval by the Planning Director. The Sign Plan must comply with Chapter 1, Article 10 of the Ventura County Ordinance Code. The Sign Plan must include the proposed size, colors, materials, and lighting details [...].*

At the site inspection, Planning staff observed a Green Compass freestanding sign located adjacent to the entrance to the SCWW facility. According to the Planning Division records, no sign plans have been submitted for review and approval.

**Abatement can be achieved by:**

The permittee shall submit a revised project description and site plan as part of the permit modification application (PL15-0106) which includes the legalization of the unpermitted freestanding sign. Upon the granting of a modified conditional use permit, the violation will be abated.

If you do not believe a violation exists and wish to appeal this determination and stay further enforcement actions, you must submit your appeal to the Planning Division by August 24, 2015. The current cost for an appeal is \$1,000 deposit (with no billing limit), but if your appeal is upheld then all of your appeal fees will be refunded. You must also fill out and submit an appeal application with the deposit fee. You may also request an Informal Office Hearing, the cost of which is currently a \$500 deposit with staff costs billed at the current hourly charge rate.

**Now that a violation has been confirmed, the following enforcement actions will be instituted and remain in effect until the violations are abated to the Condition Compliance Officer's satisfaction:**

- Each day counts as a new violation for purposes of fines, and penalties that may be assessed if Civil Administrative Penalties are imposed.
- No new Planning or Building permits will be issued on the subject site except to correct a violation.
- The full costs for staff time spent abating the violation will be charged to you and any subsequent owners of the property. This means that all time spent for meetings, site visits, telephone calls, correspondence, etc. that relate to this violation case will be charged to you. Since the violation is related to the property, unpaid bills will fall to subsequent property owners if you do not pay the bills. The minimum cost to confirm the abatement of a violation is currently \$300, plus the accumulated costs for staff time spent to date seeking abatement of the violation. The current staff charge rate exceeds \$150/hour. These costs often reach \$1,000 and more when people do not diligently abate the violations.
- You will be formally billed on a monthly basis for the staff costs incurred and assessed 2% interest for unpaid bills compounded monthly. In other words, the costs for unpaid bills will be similar to credit card charges.

- A Late Filing Fee will be required in addition to the required fees for each permit necessary to legalize a non-permitted use and structure. Each Late Filing Fee shall be equal to the cost of each required permit, but shall not individually exceed \$1,000.00. These fees will be refunded if the required application is submitted within 30 days and deemed "complete" within 90 days of the Notice of Violation. If the property is located in the Coastal Zone there is no 30-day "grace" period, and a Late Filing Fee is always charged.
- Copies of the Notice of Violation will be sent to applicable Federal, State and local policing, licensing and taxing agencies alerting them to the conditions on your property.
- An Administrative Nuisance Abatement hearing may be set before an independent hearing officer. If the Hearing Officer finds that violations exist, he can order abatement of the violations, payment to the County for all the costs incurred in seeking abatement of the violations, payment of the hearing officer costs (currently exceeds \$120/hour), payment of fines and penalties, among other orders. A tax lien can also be placed on the property if the costs are not paid in the required time. The rulings from the Hearing Officer usually result in costs and charges to violators of several thousands of dollars.
- The forfeiture of penal sureties will be sought if such sureties are on deposit with the County.
- Criminal charges may be filed against you. If you are convicted of a misdemeanor violation, it would result in a criminal record, probation, fines, and Court penalties equal to 220% of total fines charged, e.g. a \$100 fine becomes a \$320 fine.
- As part of a criminal prosecution the County's attorneys may seek and the Court may place the property in "receivership". The Court-appointed receiver would be ordered to correct the violations and be allowed to sell the property to recover the costs of abating the violations if the property owner does not pay for the work and the receiver's costs.
- CUP No. LU06-0011 can be modified or revoked by the Planning Commission or the Board of Supervisors.
- In cases where violations repeatedly occur and then are corrected, the Planning staff may take the permit to the Planning Commission or the Board of

Notice of Violation  
SCWW Facility  
Planning Violation No. PV15-0020  
August 10, 2015

Page 7 of 7

Supervisors for modification, suspension or revocation at the permittee's expense.

- Unpaid bills, fines and penalties will be pursued through Small Claims Court or as tax liens on the property.

We want to work with you to avoid the consequences listed above. I urge you to contact the case planner, Franca Rosengren, for this case, at (805) 654-2045 so she can discuss with you how this issue can be resolved. If you wish to discuss this matter in person, please call for an appointment to be sure she is available. Please reference the "Case No." identified at the top of this letter in all inquiries or replies.

**NOTE: It is your responsibility to inform the case planner when your violation(s) has been corrected. Until she hears from you that the violation(s) is corrected and this can be confirmed to her satisfaction, the violations are presumed to remain and enforcement actions against you will continue.**

Sincerely,

  
40 Brian R. Baca, Manager  
Commercial and Industrial Land Use Permits Section  
County of Ventura Planning Division

Attachments: Billing Fact Sheet  
Condition Compliance Civil Administrative Penalties Brochure

C: Sespe Consulting, Inc., Attn: Rob Dal Farra, Vice President, 374 Poli Street, Suite 200,  
Ventura, CA 93001  
City of Oxnard Utilities Department, Attn: Daniel Rydberg, 305 W. Third Street, 3<sup>rd</sup> Floor,  
Oxnard, CA 93030

**RECORDED AT THE REQUEST OF AND  
RETURN TO:**

**COUNTY OF VENTURA  
RMA-PLANNING DIVISION L-1740  
800 S. Victoria Avenue  
Ventura, CA 93009**

**"NO FEE REQUIRED"**  
**(GOVT. CODE SEC. 6103 & 27383)**  
Recorded for the benefit of the  
County of Ventura



**Authorized Signature**

**Space above this line for  
Recorder's Use**

---

**RESOURCE MANAGEMENT AGENCY  
COUNTY OF VENTURA**

800 South Victoria Avenue, L#1740, Ventura, CA 93009 (805) 654-2481 FAX (805) 654-2509

**PLANNING DIVISION  
KIM L. PRILLHART  
DIRECTOR**

---

**NOTICE OF NONCOMPLIANCE**

March 29, 2017

**Violation Case Number:** PV15-0020

**Permit Number:** LU06-0011 (Modification of Conditional Use Permit No. 960)

**Property Address:** 815 Mission Rock Road, Santa Paula

**Assessor's Parcel Numbers:** 099-0-060-165, 099-0-060-495, 099-0-060-045, 099-0-060-515

**Current Record Owner of the Property:** Santa Clara Waste Water Company, a  
California Corporation

Property owner as recorded in Document Number 20150917-00139623-0, of the Official  
Records of the County of Ventura as of September 17, 2015.

The following violations of the Ventura County Non-Coastal Zoning Ordinance (NCZO)  
and the conditions of approval of Conditional Use Permit (CUP) LU06-0011 have been  
identified in connection with the above described property and continue to exist.

1) **Expansion of the Santa Clara Waste Water Treatment Facility (SCWW) beyond the approved boundaries set forth in CUP No. LU06-0011.**

**Section 8101-3.1 of the Non-Coastal Zoning Ordinance (NCZO) [in part]:**

*No structure shall be moved onto a site, erected, reconstructed, added to, enlarged, advertised on, structurally altered or maintained, and no structure or land shall be used or maintained for any purpose, except as specifically provided and allowed this Chapter[...].*

**Condition No.4 of LU06-0011(CUP Modification) [in part]:**

*Prior to undertaking any operational or construction-related activity which is not expressly described in these conditions or applicable exhibits, the permittee must contact the Planning Director to determine if the activity requires a modification of this CUP. The Planning Director may, at the Planning Director's discretion, require that the permittee file a written and/or mapped description of the proposed activity prior to rendering a decision on whether a CUP modification is required. [...]*

The SCWW facility is authorized to operate only within the area encompassed by the CUP boundary line delineated on the approved project plans. The authorized permit area coincides with the limits of Assessor's Parcel No. (APN) 099-0-060-165.

At the July 29, 2015 site inspection, Planning staff observed that the facility has expanded beyond the approved CUP boundary line onto approximately 1.67 acres of adjacent land on the adjoining parcels (APNs: 099-0-060-495, -515 and -045). The expansion includes the storage of facility equipment, above-ground piping, and installation of new impervious surfaces (i.e. concrete). A concrete truck loading area has been constructed in a manner that requires the use of the adjoining property located outside of the permit area. According to the Planning Division's records, the expansion of the facility has occurred without the required County permits.

**Abatement can be achieved by:** The permittee shall remove all equipment and structures associated with the operation of the SCWW facility from the unpermitted expansion area; or obtain approval from the appropriate decision-making body to authorize the modification of LU06-0011 to expand of the permit boundaries of the SCWW facility.

The owner of record was notified in writing on August 10, 2015, of the County's intention to record a Notice of Noncompliance if the violations were not abated.

Pursuant to Section 8114-3.6 of the Non-coastal Zoning Ordinance Code, the Planning Director shall cause a release of Notice of Noncompliance to be recorded with the County Recorder when it is determined that the above noted violations, and any others that might exist, have been abated to the satisfaction of the Condition Compliance Officer; the

Notice of Noncompliance  
PV15-0020  
Santa Clara Waste Water Company

current fee for recordation of the Release of Notice of Noncompliance has been paid; and the County's costs incurred in the abatement of violations on the site (including interest and late charges) have been paid.

COUNTY OF VENTURA  
By Kim L. Prillhart, Director  
Planning Division

By:



Brian R. Baca, Manager  
Commercial and Industrial Land Use Permits Section  
County of Ventura Planning Division

cc: Condition Compliance File  
Rob Dal Farra, Vice President, Sespe Consulting, Inc., 374 Poli Street, Suite 200,  
Ventura, CA 93001  
Paul Kromwyk, C.F.O., Patriot Environmental Services, 508 East E Street, Unit A,  
Wilmington, CA 90744  
Bill Mitzel, Santa Clara Waste Water Company, 2775 North Ventura Road, Suite  
209, Oxnard, CA 93036

**VENTURA COUNTY CLERK AND RECORDER**

Hall of Administration, Main Plaza

800 South Victoria Avenue

Ventura, CA 93009

805-654-2295 <http://recorder.countyofventura.org>**MARK A. LUNN****CLERK AND RECORDER****Receipt for Services**

<b>Cashier</b>	CORRALE	<b>Batch #</b>	1182954
<b>Customer</b>	VENTURA COUNTY PLANNING DIVISION	<b>Date:</b>	03/29/2017
		<b>Time:</b>	03:33:28PM

Doc. Type	Instrument No	GF Number	Rec Fees	PCOR	Survey Fees	Taxes	Total
NOTI	20170329-00042693-0		0.00	0.00	0.00	0.00	0.00
<b>Total Fee:</b>							<b>0.00</b>

# **RISK MANAGEMENT ANALYSIS REPORT**

**RI-NU ENVIRONMENTAL SERVICES  
WASTE TREATMENT FACILITY  
815 MISSION ROCK ROAD  
SANTA PAULA, CALIFORNIA**

EnSafe Project Number  
0888824008

Prepared for:

**RI-NU Environmental Services, LLC  
15218 Summit Avenue  
Suite 300 #601  
Fontana, California 92336**

January 3, 2019

5724 Summer Trees Drive  
Memphis, Tennessee 38134  
901-372-7962 | 800-588-7962  
www.ensafe.com

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County of Ventura  
Initial Study  
PL15-0106

**Attachment 7 – January 2019 Risk  
Management Analysis**

# RISK MANAGEMENT ANALYSIS REPORT

RI-NU ENVIRONMENTAL SERVICES  
WASTE TREATMENT FACILITY  
815 MISSION ROCK ROAD  
SANTA PAULA, CALIFORNIA

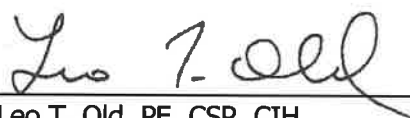
EnSafe Project Number  
0888824008

Prepared for:

RI-NU Environmental Services, LLC  
15218 Summit Avenue  
Suite 300 #601  
Fontana, California 92336

January 3, 2019

**Prepared by:**

  
Leo T. Old, PE, CSP, CIH

**Reviewed by:**

  
Charles Caudill, CIH, CSP

5724 Summer Trees Drive  
Memphis, Tennessee 38134  
901-372-7962 | 800-588-7962  
[www.ensafe.com](http://www.ensafe.com)

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4.0 PROCESS HAZARD ANALYSIS METHODOLOGY.....	3
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## ATTACHMENTS

Attachment A	Process Flow Diagrams
Attachment B	Attendance Sign-In Sheet
Attachment C	Process Safety Information Checklist
Attachment D	Risk Ranking Matrix
Attachment E	Process Hazard Analysis Worksheets
Attachment F	Summary of Controls and Safeguards
Attachment G	Summary of Recommendations

## EXECUTIVE SUMMARY

EnSafe Inc. facilitated a risk management analysis of the RI-NU Environmental Services (RI-NU) proposed waste treatment facility located at 815 Mission Rock Road, Santa Paula, California. The risk management analysis was conducted utilizing the process hazard analysis methodology. The process hazard analysis included review of the proposed waste treatment processes and ancillary processes (including unloading, storage, and onsite chemical transport) at the facility.

The RI-NU waste treatment plant will operate as a centralized waste treatment facility, and will receive wastes from numerous industries and activities. As received, these wastes may contain pollutants, including metals, oils, suspended solids, and organics, which require treatment and/or removal prior to discharge into the conveyance line connected to the Oxnard municipal sewer system.

The hazard analysis method used for the process hazard analysis was a combination What-If and Hazard and Operability study. This method was selected due to the complexity and nature of the processes evaluated. The process hazard analysis methodology included determination of multiple hazard scenarios. For each hazard scenario, the process hazard analysis team identified potential causes, consequences, safeguards and controls. The process hazard analysis team utilized a risk ranking tool to determine the potential likelihood of an adverse incident, the potential severity of the incident, and overall risk rank.

If the PHA team felt that existing safeguards were not adequate to control the hazards or that additional safeguards could further reduce risk, recommendations were documented. Recommendations were typically designed to reduce the likelihood of an adverse incident, reduce the severity of an incident, and/or improve safety at the site. The PHA team identified nine recommendations for consideration. The recommendations addressed the following issues:

- Use of double-walled tubing for chemical transfers
- Design optimization of chemical feed areas to minimize opportunities for vehicle collisions
- Establishment of designated paths to the hazardous material storage building for delivery trucks
- Design and construction of a hazardous material storage building that is compliant with local/state chemical storage and fire protection standards

- Establishment of policies that (1) prohibit receipt of wastes in totes or drums and (2) prohibit pumping of drums or totes into any vacuum truck
- Implementation of a New Chemical introduction/procurement policy
- Establishment of a program to familiarize local emergency responders with site operations and hazards
- Posting of appropriate hazard warning signage at the hazardous materials storage building
- Posting of appropriate informational signage at the truck unloading area to identify unloading valves/piping



## **1.0 INTRODUCTION**

EnSafe Inc. facilitated a risk management analysis of the RI-NU Environmental Services (RI-NU) proposed waste treatment facility located at 815 Mission Rock Road, Santa Paula, California. The risk management analysis was conducted utilizing the process hazard analysis (PHA) methodology. The PHA included review of the proposed waste treatment processes and ancillary processes (including unloading, storage, and onsite chemical transport) at the facility.

The risk management analysis was facilitated by Leo Old, PE, CSP, CIH, Associate Principal of EnSafe, and Glen Bianchi, Senior Project Manager of EnSafe. Mr. Rob Dal Farra, PE, Vice President of SESPE Consulting, Inc., arranged and coordinated the PHA.

## **2.0 PROCESS DESCRIPTION**

The RI-NU waste treatment plant, located in Santa Paula, California, will operate as a centralized waste treatment facility, and will receive wastes from numerous industries and activities. As received, these wastes may contain pollutants, including metals, oils, suspended solids, and organics, which require treatment and/or removal prior to discharge into the conveyance line connected to the Oxnard municipal sewer system. The facility will receive the following wastes:

- Industrial Wastewater Containing Metals (40 Code of Federal Regulations [CFR] Part 437 Subcategory A wastes) — This includes wastes such as neutralized acid wastewater, boiler blowdown brine, and metal finish wastewater.
- Oily Wastewater (40 CFR Part 437 Subcategory B wastes) — This includes wastes such as materials from oilfield wastewater, oil spills, oil-water emulsions, contaminated groundwater from petroleum sources, bilge water, and aqueous and oil mixtures from parts-cleaning operations.
- Industrial Wastewater Containing Organics (40 CFR Part 437 Subcategory C wastes) — This includes wastes such as solvent-bearing wastes, contaminated groundwater clean-up from non-petroleum sources, landfill leachate, floral wastewater, and tank clean-out fluids from organic non-petroleum sources.
- Domestic Wastes — This includes septic tank wastes, portable restroom waste, and secondary sewage.

- Oilfield Sludge Wastes — This category includes oilfield drilling muds and tank bottoms. The drilling muds and cuttings are generated during the drilling of oil and gas wells. The tank bottoms include solids removed from the bottom of storage tanks used in the production of crude oil.

Wastes are delivered by truck to the site. Process flow diagrams referenced during the PHA are included as Attachment A.

### **3.0 PREVIOUS INCIDENT REVIEW**

EnSafe reviewed with the PHA team the Root Cause Investigatory Report provided by The Law Office of Michael D. Bradbury (February 27, 2015). On November 18, 2014, an explosion occurred at the Santa Clara Waste Water Company (SCWW; former name of the RI-NU waste treatment facility). The explosion was the result of an undesirable chemical reaction between sodium chlorite (active ingredient in Headline 3875, Miles Chemical) and non-hazardous domestic wastes in a vacuum truck. An SCWW employee inadvertently pumped the contents of a tote of Headline 3875 into a vacuum truck that contained domestic wastes. Pressure within the truck's tank increased to a level causing a rupture of the vacuum truck's tank. The Root Cause Investigatory Report recommended at least two policy changes:

- *The facility will no longer accept any wastewater contained in totes. The only totes allowed to be present on the premises will contain clearly-marked and labeled chemical treatment processes.*
- *Additional and targeted safety training will reinforce the new policy that all liquid materials in totes are to be considered "product" and shall never be handled or processed as wastewater, along with posted detailed protocols and reminders, as well as listed potential sanctions for any violations.*

The PHA team considered the events associated with the November 18, 2014, incident. RI-NU personnel indicated their intent to implement the recommendations from the Root Cause Investigatory Report.

#### **4.0 PROCESS HAZARD ANALYSIS METHODOLOGY**

The hazard analysis method used for the PHA was a combination What-If and Hazard and Operability study. This method was selected due to the complexity and nature of the processes evaluated. The PHA included the following:

- Participation by SESPE Consulting engineering and RI-NU management personnel (the attendance sheet is included as Attachment B)
- Site tour with representatives from the County of Ventura, RI-NU, and SESPE Consulting
- Review of process safety information (process safety information checklist is included as Attachment C)
- Review of the facility's incident history
- Documentation of safety-related controls
- Development of recommendations based on PHA team discussions

The PHA methodology included determination of multiple hazard scenarios. For each hazard scenario, the PHA team identified potential causes, consequences, safeguards, and controls. The PHA team utilized a risk ranking tool to determine the potential likelihood of an adverse incident, the potential severity of the incident, and overall risk rank. A copy of the risk ranking matrix is included as Attachment D. The PHA also included an assessment of facility siting and human factor concerns.

The hazard scenarios with causes, consequences, safeguards, and controls are documented in the PHA worksheets (Attachment E). A separate worksheet was developed for each of the following nodes:

- Node 1 — Tank Bottoms
- Node 2 — Drilling Mud
- Node 3 — Production Water
- Node 4 — Subcategory A Industrial-Metals
- Node 5 — Subcategory C Organics
- Node 6 — Domestic Wastewater
- Node 7 — Utilities

- Node 8 — Hazardous Materials Storage
- Node 9 — Facility Siting and Human Factors

For each hazard scenario, the PHA team identified safeguards and engineering controls that were directly related to the scenario. In addition to listing in the PHA worksheets, a list of all identified safeguards and controls is included in Attachment F.

## **5.0 RECOMMENDATIONS**

If the PHA team felt that existing safeguards were not adequate to control the hazards or that additional safeguards could further reduce risk, recommendations were documented. Recommendations were typically designed to reduce the likelihood of an adverse incident, reduce the severity of an incident, and/or improve safety at the site. The numbering of the recommendations are related to the location within the PHA worksheets, to facilitate reference if further information is needed for a specific recommendation. The PHA team identified nine recommendations for consideration, which address the following:

- Use of double-walled tubing for chemical transfers
- Design optimization of chemical feed areas to minimize opportunity for vehicle collisions
- Establishment of designated paths to the hazardous material storage building for delivery trucks
- Design and construction of a hazardous material storage building that is compliant with local/state chemical storage and fire protection standards
- Establishment of policies that (1) prohibit receipt of wastes in totes or drums and (2) prohibit pumping of drums or totes into any vacuum truck
- Implementation of a New Chemical introduction/procurement policy
- Establishment of program to familiarize local emergency responders with site operations and hazards
- Posting of appropriate hazard warning signage at hazardous materials storage building



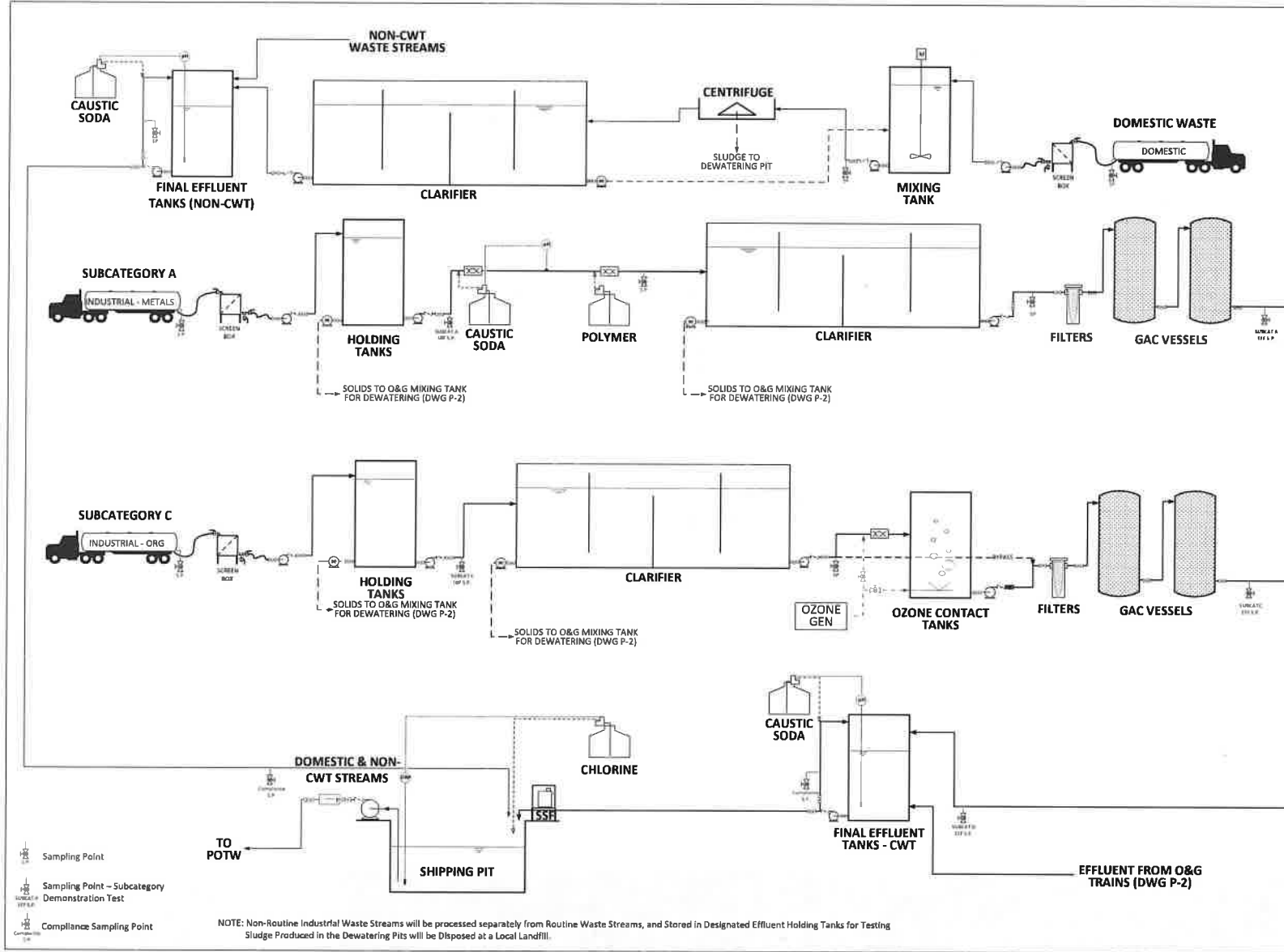
- Posting of appropriate informational signage at truck unloading area to identify unloading valves/piping
- ^ A compilation of recommendations is included in Attachment G.

## **6.0 DISCLAIMER**

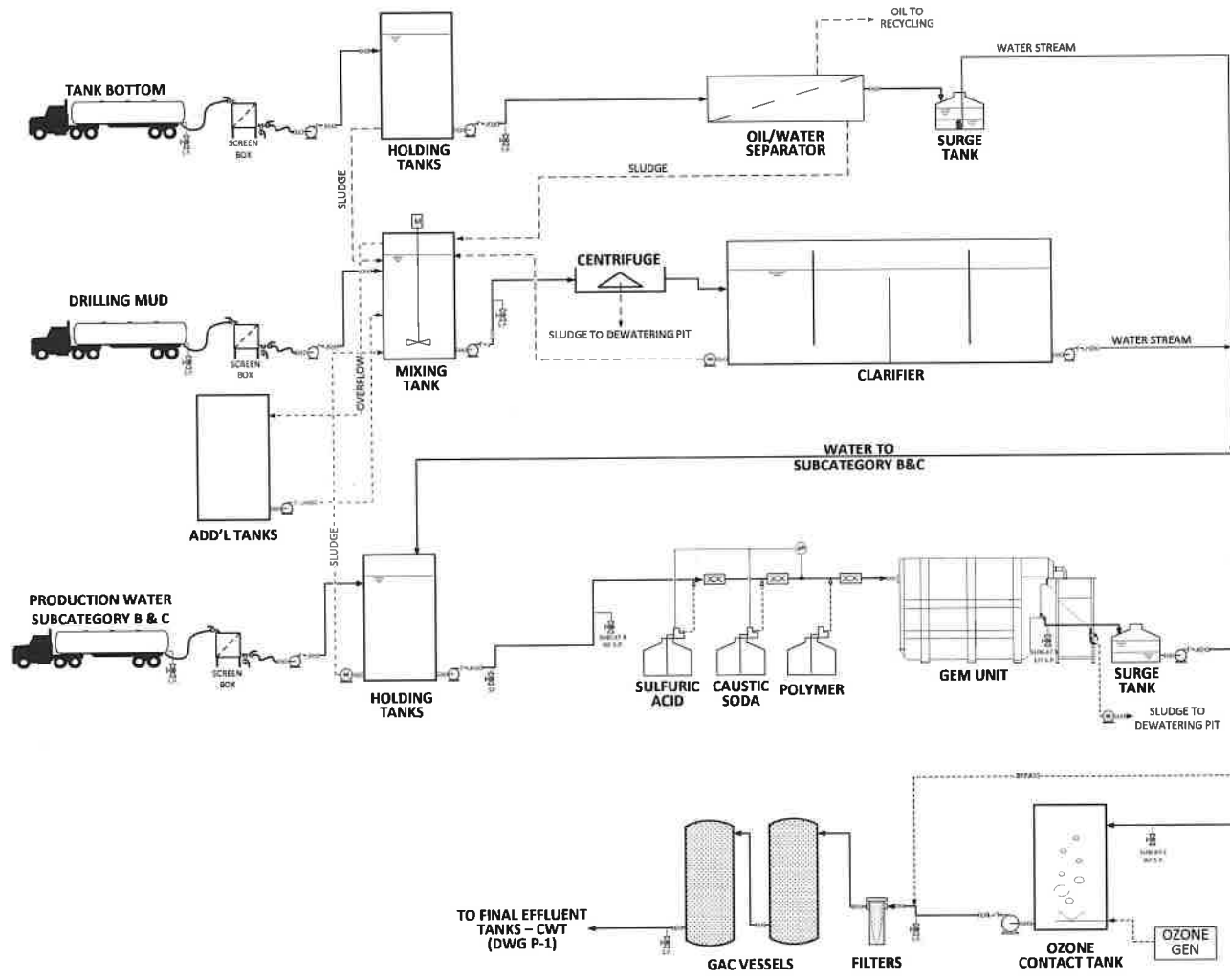
This report is for the sole use of RI-NU Environmental Services. Use of this report by any other party will be at such party's sole risk, and EnSafe disclaims liability for any such use or reliance by third parties. The results presented in this report are indicative of conditions at the time of the PHA. This study does not purport to include every safety or health hazard at this location, and only those areas specifically mentioned were evaluated. EnSafe prepared this report based upon the direction and information provided by RI-NU Environmental Services, and shall not assume responsibility for misinformation that EnSafe could not reasonably determine was incorrect at the time of the performance of work.



**Attachment A**  
**Process Flow Diagrams**



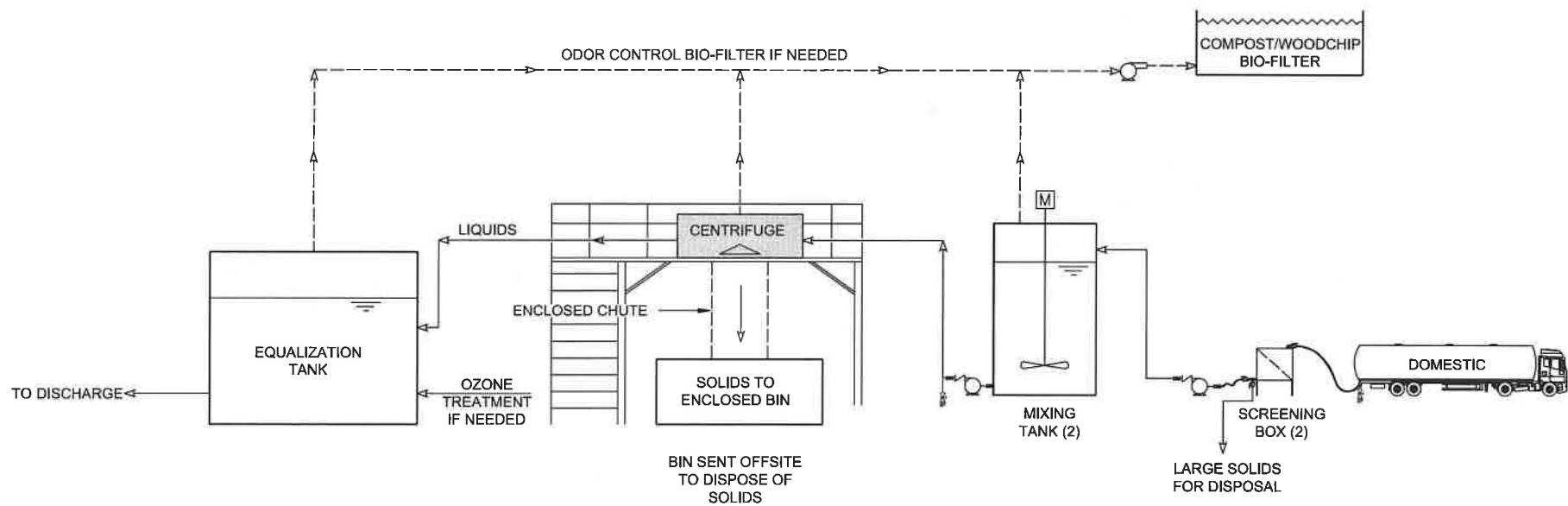
INVIROTREAT INC. INNOVATIVE TREATMENT		1725 RICH AVE HOUSTON, TEXAS 77054 (713) 794-4100	
TITLE		CWT & DOMESTIC WASTE TREATMENT FACILITY	
DESCRIPTION		PIPING & INSTRUMENTATION DIAGRAM INDUSTRIAL & DOMESTIC WASTE TREATMENT TRAINS	
SCALE		NONE	
DESIGNED BY		AL	DATE
DRAWN BY		AL	4/5/18
CHECKED BY		AL	
APPROVED BY		AL	
PROJECT NO.		P-1	



- Sampling Point
- Sampling Point - Subcategory Demonstration Test
- Compliance Sampling Point

NOTE: SLUDGE PRODUCED IN THE DEWATERING PITS WILL BE DISPOSED AT A LOCAL LANDFILL

DRAWING NO.	CWT & DOMESTIC WASTE TREATMENT FACILITY			
	PIPING & INSTRUMENTATION DIAGRAM			
	OIL & GAS TREATMENT TRAIN			
	SCALE	DATE	REVISION	DATE
	NONE	AL	AL	4/29/18
<div> <div>INVIOTREAT INC.</div> <div>INNOVATIVE TREATMENT</div> </div>				
P-2				



<b>SESPE</b> CONSULTING, INC. <small>374 Poli Street, Ste.200 • Ventura, CA 93001          (805) 275-1515 www.sespeconsulting.com</small>	RI-NU WASTE WATER TREATMENT FACILITY PROPOSED DOMESTIC WASTE PROCESS FLOW	
	<small>SCALE: 1"=10'-0"</small> <small>DATE: 10/11/2018</small> <small>BY: JGC</small> <small>CHECKED: ADP</small>	<small>FIGURE NUMBER</small> <b>1-1</b> <small>DATE: 10/11/2018</small>



**Attachment B**  
**Attendance Sign-In Sheet**

## Process Hazard Analysis Daily Sign-In Sheet

**Ri-Nu**

**Date:** November 27-28, 2018

**Process:** R1 Nu Waste Water Treatment Facility

[illegible]



**Attachment C**  
**Process Safety Information Checklist**

**Process Hazard Analysis**  
**Availability of Documents**

	Process Safety Information (PSI)	Yes	No	N/A
<b>Hazardous Chemical Information</b>				
Safety data sheets		X		
Toxicity information		X		
Permissible exposure limits		X		
Physical data		X		
Corrosivity data		X		
Thermal and chemical stability data		X		
Hazardous effects of inadvertent mixing of different materials that could foreseeably occur			X	
<b>Process Technology Information</b>				
Process chemistry		X		
Maximum intended inventory		X		
Theory of operation		X		
Block flow diagram and/or process flow diagram		X		
Safe upper and lower limits for items such as temperatures, pressures, flows, or compositions			X	
Consequences of deviation regarding safe operating limits			X	
<b>Process Equipment Information</b>				
Piping and instrument diagrams		X		
Electrical classification drawings				X
Materials of construction			X	
Relief system design and design basis				X
Ventilation system design				X
Design codes and standards employed			X	
Safety systems (e.g., interlocks, detection systems, and suppression systems)		X		
Material and energy balances		X		



**Attachment D**  
**Risk Ranking Matrix**

## Process Hazard Analysis Risk Ranking Matrix

### Likelihood

Category	Description
5	Multiple occurrences per year
4	Once per year
3	Once every 1-10 years
2	Once every 10-50 years
1	Unlikely during life of process

### Severity

Category	Description
5	Fatality or permanent disability Release with major environmental impact
4	Lost-time or restricted-work injury/illness Release with community environmental impact
3	OSHA recordable injury/illness Release with facility-wide environmental impact
2	First aid injury Release with local environmental impact
1	No injury/illness Minor release with minimal environmental impact

### Risk (Likelihood x Severity)

Severity	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
		Likelihood				

### Action

Score	Controls
10-25	Unacceptable risk - controls required
5-9	Tolerable risk - controls optional
1-4	Minimal risk - no controls necessary



**Attachment E**  
**Process Hazard Analysis Worksheets**

**Process Hazard Analysis**  
**Waste Stream: Tank Bottoms**

**Ri-Nu**  
**27-Nov-18**

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Truck arrives on site - off-specification from profile (pH, or Flashpoint) - pumped into system	Failure to follow procedure	(pH) No consequence (Flashpoint) Fire at unloading station	Waste acceptance procedure Static control and discharge devices (grounding truck at unloading) Ventilation - active vapor control to GAC	1	2	2		
Pumping to waste water holding tank designated for tank bottoms via overhead piping - release from piping	Valve failure	Spill	Secondary containment	1	3	3		
	Equipment failure (piping)							
Pumping tank bottoms to holding tanks designated for other waste streams	Operator error	Undesirable reaction with no adverse consequence		1	3	3		
Overflow from holding tank	Operator error	Spill	Secondary containment Operator/mechanic training	1	3	3		
Surge tank, after oil/water separator, overflows (salt water)	Equipment failure (pump or level control)	Vessel overflow	Level indicators Secondary containment	1	3	3		

Process Hazard Analysis  
Waste Stream: Drilling Mud

Ri-Nu  
27-Nov-18

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Truck arrives on site - off-specification from profile (pH) - pumped into system	Failure to follow procedure	Undesirable reaction with no adverse consequence	Waste acceptance procedure	1	2	2		
Pumping to mixing tank and centrifuge via overhead piping - release from piping	Valve failure	Spill	Overflow line from mixing tank to alternate mixing tank	1	3	3		
	Equipment failure (piping)		Secondary containment					
Release of (mixed) drilling mud from centrifuge or clarifier	Valve failure	Spill	Secondary containment	1	3	3		
	Equipment failure (piping)							

Process Hazard Analysis

Waste Stream: Production Water

Ri-Nu

27-Nov-18

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Truck arrives on site with off-specification water from profile pumped into system	Failure to follow procedure	No consequence	Waste acceptance procedure	1	2	2		
Pumping to holding tank via overhead piping - release from piping	Valve failure	Spill	Overflow line from mixing tank to another mixing tank	1	3	3		
	Equipment failure (piping)		Secondary containment					
Pumping production water to holding tanks designated for other waste streams	Operator error	No consequence		1	3	3		
Production waste water to GEM Unit with in-line chemical addition for pH adjustment (H2SO4, NaOH) and via .25" polyethylene line. Excess chemical addition	Equipment failure (flow meter)	Other - pH too high or too low - GEM unit process disruption	Preventive maintenance/inspection program (per shift calibration of pH and flow meters)	1	2	2		
	Equipment failure (pH meter)		Critical spare parts inventory					
	Equipment failure (PLC)							
220-330 gal. totes of H2SO4, NaOH totes feed via .25" polyethylene line. Leak from tote, pump or piping	Valve failure	Spill	Secondary containment (segregated) for totes	1	3	3	N3-1	Consider use of double-walled tubing for acid and other chemical transfers.
	Equipment failure (structural)	Process disruption	Secondary containment (area) for feed lines					
	Other - polyethylene tubing failure	Employee exposure	Respiratory protection/PPE					
			Emergency eyewash and shower equipment					
Transfer/replace 220-330 gal. totes of H2SO4, NaOH, polymer and FeClO3 via fork truck. Damage to tote resulting in release of some or all of the tote contents.	Operator error	Spill	Secondary containment for most of the area	2	2	4	N3-2	Consider most optimal design of chemical feed areas to promote easy access by fork trucks and minimize opportunities for collisions with process equipment and chemical totes.
	Inattentive/distracted operator		Operator/mechanic training (forklift certified)					
			Respiratory protection/PPE					
			Emergency eyewash and shower equipment					
230 -330 gal. totes of polymer and FeClO3 feed via .25" polyethylene line. Leak from tote, pump or piping	Valve failure	Spill	Secondary containment (segregated) for totes	1	3	3	N3-3	(same as N3-1)
	Equipment failure (structural)	Process disruption	Secondary containment (area) for feed lines					
	Other - polyethylene tubing failure	Employee exposure	Respiratory protection/PPE					
			Emergency eyewash and shower equipment					
Process flow from GEM unit, to surge tank to Ozone Unit to final effluent tanks.	Valve failure	Spill	Secondary containment (partial)	1	2	3		
	Equipment failure (structural)	Process disruption						

Process Hazard Analysis

Waste Stream: Subcategory A Industrial - Metals

Ri-Nu  
27-Nov-18

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Truck arrives on site - off-specification from profile --- pumped into system	Failure to follow procedure	No consequence	Waste acceptance procedure	1	2	2		
Pumping to holding tank via overhead piping - release from piping	Valve failure	Spill	Overflow line from mixing tank to another mixing tank	1	3	3		
	Equipment failure (piping)		Secondary containment					
Pumping Subcat. A water to holding tanks designated for other waste streams	Operator error	Undesirable reaction with no adverse consequence		1	3	3		
Subcat. A waste water to Clarifier with in-line chemical addition for pH adjustment (NaOH) and via .25" polyethylene line. Excess chemical addition	Equipment failure (flow meter)	Other pH too high, flocculation process disruption	Preventive maintenance/inspection program (per shift calibration of pH and flow meters)	1	2	2		
	Equipment failure (pH meter)		Critical spare parts inventory					
	Equipment failure (PLC)							
220-330 gal. totes of NaOH, polymer tote feed via .25" polyethylene line. Leak from tote, pump or piping	Valve failure	Spill	Secondary containment (segregated) for tote	1	3	3		
	Equipment failure (structural)	Process disruption	Secondary containment (area) for feed lines					
			Respiratory protection/PPE					
			Emergency eyewash and shower equipment					
Transfer/replace 220-330 gal. totes of NaOH, polymer and via fork truck. Damage to tote resulting in release of some or all of the tote contents.	Operator error	Spill	Secondary containment for most of the area	2	2	4	N4-1	(Same as N3-2)
	Inattentive/distracted operator		Operator/mechanic training (forklift certified)					
			Respiratory protection/PPE					
			Emergency eyewash and shower equipment					
Process flow from Clarifier unit, through filters and GAC to final effluent tanks.	Valve failure	Spill	DOT specification totes	1	2	2		
	Equipment failure (structural)	Process disruption	Secondary containment (partial)					

Process Hazard Analysis  
Waste Stream: Subcategory C - Organics

Ri-Nu  
27-Nov-18

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Truck arrives on site - off-specification from profile --- pumped into system	Failure to follow procedure	No consequence	Waste acceptance procedure	1	2	2		
Pumping to holding tank via overhead piping - release from piping	Valve failure	Spill	Overflow line from mixing tank to another mixing tank	1	3	3		
	Equipment failure (piping)		Secondary containment					
Pumping Subcat. C water to holding tanks designated for other waste streams	Operator error	Undesirable reaction with no adverse consequence		1	3	3		
Subcat. C waste water to Clarifier - excessive flow	Equipment failure (flow meter)	Other - pH too high, flocculation process disruption	Preventive maintenance/inspection program (per shift calibration of pH and flow meters)	1	2	2		
	Equipment failure (PLC)		Critical spare parts inventory					
Process flow from Clarifier unit, through Oxone unit, filters and GAC to final effluent tanks - release from piping or equipment	Valve failure	Spill	Secondary containment (partial)	1	2	2		
	Equipment failure (structural)	Process disruption						
Final effluent storage tanks with in-line chemical addition for pH adjustment (NaOH) via .25" polyethylene line. Excess chemical addition	Equipment failure (flow meter)	Other pH too high or too low - Compliance with permit	Preventive maintenance/inspection program (per shift calibration of pH and flow meters)	1	2	2		
	Equipment failure (pH meter)		Critical spare parts inventory					
	Equipment failure (PLC)							
Shipping Pit - Insufficient NaHClO3 injection	Equipment failure (ORP meter)	Other - ORP too high (Compliance)	Preventive maintenance/inspection program (per shift calibration of ORP meters)	1	2	2		
			Critical spare parts inventory					
			Preventive maintenance/inspection program- weekly inspection of					

**Process Hazard Analysis**  
**Waste Stream: Domestic Waste Water**

**Ri-Nu**  
**27-Nov-18**

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Pumping to mixing tank and centrifuge via overhead piping - release from piping	Valve failure	Spill	Overflow line from mixing tank to another mixing tank	1	3	3		
	Equipment failure (piping)		Secondary containment					
Pumping domestic waste water to equalization tanks designated for domestic waste streams - release from piping	Valve failure	Spill	Secondary containment	1	3	3		
	Equipment failure (piping)							
Water pumped from equalization tank to shipping pit - release from piping	Valve failure	Spill	Secondary containment	1	3	3		
	Equipment failure (piping)							

Process Hazard Analysis  
Node: Utilities

Ri-Nu  
27-Nov-18

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Loss of HVAC	Not applicable							
Loss of electrical	Natural (weather, earthquake)	Process disruption (all flows stop)		1	3	3		
Loss of heating	Not applicable							
Loss of cooling	Not applicable							
Loss of lighting	Natural (weather, earthquake) (Loss of	Process disruption		1	3	3		
Loss of instrument air	Not applicable							
Loss of nitrogen	Not applicable							
Loss of fire suppress.	Other - City control	No consequence						
Loss of potable water	Other - City control	Process disruption (loss of plumbed emergency eyewash/showers)	Portable eyewash/shower units available for rental	1	2	2		

Process Hazard Analysis

Waste Stream: Hazardous Materials Storage

Ri-Nu  
27-Nov-18

Deviation/Hazard Scenario	Causes	Consequences	Safeguards	S	L	R	ID #	Recommendations
Truck unloading of 220-330 gal. totes of H2SO4, NaOH, FeClO3, polymer and NaHClO3 to storage area. Spill during unloading with forklift	Operator error	Spill	Secondary containment	2	2	4	N8-1	Establish designated path for trucks to deliver totes to hazardous material storage locker/building. Design should minimize amount of handling necessary to unload/store totes.
	Inattentive/distracted operator		Operator/mechanic training (Certified forklift operators)					
			Accessible spill kit					
			Emergency eyewash and shower equipment					
			Operator/mechanic training (HAZWOPER-trained spill responders)					
Storage of 220-330 gal. totes of H2SO4, NaOH, FeClO3, polymer and NaHClO3, in the storage locker/building. Spill within the storage locker/building		Spill	DOT Specification totes	1	2	3	N8-2	Hazardous material storage locker/building shall meet local/state chemical storage and fire protection safety requirements.
	Valve failure		Secondary containment (segregated)					
	Equipment failure		Accessible spill kit					
			Emergency eyewash and shower equipment					
			Operator/mechanic training (HAZWOPER-trained spill responders)					
Inadvertent pumping of hazardous chemical (e.g., H2SO4, NaOH, NaHClO3, NaClO2, H2O2) into a vac truck containing waste water		Explosion	DOT Specification totes	4	1	4	N8-3	Verify O&M Manual clearly describes policies regarding (1) wastes in drums or totes will not be accepted and (2) prohibition of pumping drums or totes into a vacuum truck.
	Operator error		Operating policy/procedures - waste material in totes or drums are not accepted					
	Failure to follow procedure	Undesirable reaction	Operating policy/procedures - prohibition of pumping drums or totes into any vac truck				N8-4	Implement a "New Chemical" policy to address pre-approval process, purchasing, use, storage, training, and other appropriate safety precautions.
		Spill	Operator/mechanic training					

Process Hazard Analysis  
Facility Siting and Human Factors

Ri-Nu  
27-Nov-18

Issue		Y/N/NA	Existing Safeguards	S	L	R	ID#	Recommendations
<b>Facility Siting</b>								
<b>Hazards Caused by the Location of the Process</b>								
S01	Are adjacent non-process areas protected from process hazards and/or releases/spills?	Y	Office area is located as far from the process area as physically possible. Site grading contains releases to localized areas					
S02	Are unauthorized employees, visitors and contractors prevented from entering process areas?	Y	Fenced gated property, sign in log, <u>documented safety orientation for drivers</u>					
S03	Can emergency escape be accomplished without encountering significant process hazards?	Y	3 exit points on 2 sides of the property, all <u>processes outdoors</u>					
S04	Are control rooms located to minimize exposure to process hazards for its occupants?	NA						
S05	Are pressure relief and blowdown vents designed to discharge away from occupied areas?	NA						
S06	Have potential risks associated with exposures to explosion hazards been determined and addressed?	Y	No anticipated process related explosion hazards. Prior incident reviewed and preventive measures implemented.					
S07	Are outdoor air intakes to occupied areas properly located to minimize uptake of hazardous gases/vapors?	NA						
S08	Has a process been established to identify safe locations for contractor staging, fabrication, and storage areas (especially during process outages/shutdowns)?	Y	Construction during operation not expected; however, contractor work area would be designated.					
<b>Locations of Emergency Response Equipment and Detectors</b>								
S09	Are process controls and indicators accessible under normal, upset, and emergency conditions?	NA	Only process controls are pH, flow and ORP; <u>none are critical</u>					
S10	Are gas/vapor detectors located in the most appropriate locations?	Y	Personal H2S monitors					
S11	Are fire/smoke detectors located in the most appropriate locations?	NA	All operations are outdoors. Not required for <u>lab or offices based on size/occupancy</u> .					
S12	Is fire-fighting equipment, including fire extinguishers and suppressions systems, in the most <u>appropriate locations</u> ?	Y	Fire extinguishers (number and placement) <u>to be specified by Fire Marshal</u>					
S13	If required, is accessibility to emergency escape respirators provided?	NA						
<b>Severe Weather and Natural Disasters</b>								
S14	Does process equipment and structural components meet current seismic codes?	NA	Tank, process equipment, and portable building installations are not subject to seismic codes. Will be reviewed during permitting.					
S15	Are process equipment and controls protected from damage and/or release during severe <u>weather or natural disasters</u> ?	NA	No critical process controls. Will be reviewed <u>during permitting</u> .					
S16	Does the process have adequate lightning protection?	NA	Requirement not currently anticipated. Will <u>be reviewed during permitting</u> .					
<b>Release from Adjacent Facilities</b>								
S17	Is the covered process isolated from neighboring facilities to prevent damage that could result in a release of hazardous materials?	NA	Adjacent facilities do not have highly hazardous operations.					
<b>Security</b>								
S18	Is the covered process adequately secured to prevent unauthorized access? (e.g., gates, locked doors, security cameras, fencing, and security guards)	Y	Fenced gated access, security cameras.					
<b>Other</b>								
S19	Are local Emergency Response personnel familiar with site operations and hazards?	N		4	2	8	N9-1	Establish program to familiarize local responders with site operations and hazards. Program should include periodic site visits by responders and joint participation in emergency drills.

Human Factors

Issue		Y/N/NA	Existing Safeguards	S	L	R	ID#	Recommendations
<b>General Work Environment</b>								
H01	Are adequate hazard warning signs posted in appropriate areas and legible?	Y	No tanks contain hazardous materials requiring signage. NFPA hazard rating diamonds and other signage will be posted at entry gates				N9-2	Provide appropriate hazard warning signage at entrances to hazardous materials storage building/locker.
H02	Are alarms loud enough to be heard?	NA						
H03	Is the lighting sufficient for safe operation of the covered process?	Y	Lighting plan will be reviewed/approved by County.					
H04	Are emergency exit signs placed in appropriate locations?	Y						
<b>Accessibility and Availability of Equipment</b>								
H05	Is personal protective equipment readily available and are employees aware of their locations?	Y	Documented PPE hazard assessments. PPE training					
H06	Is portable or fixed communications equipment available for personnel working in process areas?	NA	Cellphones available to contact emergency responders, if needed.					
H07	Would others know that a worker is incapacitated in a process area in a timely manner?	Y	No employees working alone during shift					
H08	Is process equipment designed and positioned to allow maintenance and servicing?	Y						
<b>Component Labeling</b>								
H09	Is process equipment (e.g., containers, pipes, valves, instruments, controls) clearly labeled or otherwise readily identifiable?	Y	Equipment labeling to be implemented with facility construction				N9-3	Provide appropriate signage/stenciling to clearly identify waste unloading valves/piping in truck unloading area.
H10	Are process instruments and controls clearly labeled and accurate?	Y	Only process controls are pH, flow and ORP. To be implemented with facility construction.					
<b>Controls and Displays</b>								
H11	Is adequate information about normal and upset process conditions displayed?	Y	Only process controls are pH, flow and ORP. Process upsets do not result in adverse incidents.					
H12	Are the controls and displays arranged logically in ways that operators can understand?	Y						
H13	Are critical alarms separate and distinguishable from control alarms?	NA	No critical or control alarms					
H14	Have operators been trained to understand the meaning of critical and control alarms?	NA						
H15	Are alarms uniformly distinguishable (e.g., toxic gas alarms have same audible and/or visible cues)?	NA						
H16	Is there a procedure in place to prevent unauthorized changes to critical process parameters?	NA	No critical process controls.					
H17	Are dedicated emergency shutdown devices for critical process equipment located appropriately?	NA						
H18	For upset conditions, does the operator have adequate time to act as necessary to control the situation?	NA	No critical upset conditions anticipated					
<b>Workload and Stress Factors</b>								
H19	Is the duration of a normal operating shift appropriate based on alertness and fatigue concerns?	Y	8 hour shifts					
H20	Is there a procedure in place to ensure adequate staffing at process controls (e.g., provision for operator(s) at controls at all times)?	NA	No critical process controls.					
H21	Are policies in place to prevent an operator from working excessive hours if their relief fails to arrive?	Y						
<b>Operating Procedures and Training</b>								
H22	Do adequate standard operating procedures, job safety assessments, and/or work instructions exist to guide operators to run the process safely under normal, temporary, and emergency conditions?	Y	Job descriptions and training exist for all positions. Key documents include Employee Safety Manual, O&M Manual, Waste Analysis Plan.					
H23	Have operators received adequate training (classroom and hands-on) and demonstrated proficiency to operate the process safely under normal, temporary, and emergency conditions?	Y	Training program for all operators, addressing operations, safety, emergency response.				N9-4	Review existing job descriptions and hiring process. Revise as necessary to ensure that qualified employees with appropriate experience, knowledge, and physical capabilities are hired in order to maintain safety standards.

Issue		Y/N/NA	Existing Safeguards	S	L	R	ID#	Recommendations
<b>Mechanical Integrity</b>								
H24	Is a reliable system in place for PSM-related work orders, preventative maintenance tasks, emergency repairs, etc. for mechanics to adequately maintain/repair process equipment and controls?	Y	Some PM processes are not documented. Process monitoring /calibration is documented.					
H25	Have mechanics received adequate training (classroom and hands-on) and demonstrated proficiency to perform preventive and repair maintenance of process equipment and controls?	Y	Training program for all operators, addressing operations, safety, emergency response.					



**Attachment F**  
**Summary of Controls and Safeguards**

**Process Hazard Analysis  
Summary of Controls and Safeguards**

**Ri-Nu  
27-Nov-18**

#	Node	Engineering Controls or Other Safeguard
1	N1 - Tank Bottoms	Waste acceptance procedure
2	N1 - Tank Bottoms	Static control and discharge devices (grounding truck at unloading)
3	N1 - Tank Bottoms	Ventilation - active vapor control to GAC
4	N1 - Tank Bottoms	Secondary containment (unloading area, tank farm, surge tank)
5	N1 - Tank Bottoms	Operator/mechanic training regarding operating procedures
6	N1 - Tank Bottoms	Surge tank level indicators
7	N2 - Drilling Mud	Waste acceptance procedure
8	N2 - Drilling Mud	Overflow line from mixing tank to alternate mixing tank
9	N2 - Drilling Mud	Secondary containment (mixing tank, centrifuge, clarifier)
10	N3 - Production Water	Waste acceptance procedure
11	N3 - Production Water	Overflow line from mixing tank to alternate mixing tank
12	N3 - Production Water	Secondary containment (unloading area, holding tanks, chemical totes, chemical feed lines, GEM unit, surge tank, ozone tank, GAC vessels, final effluent tanks)
13	N3 - Production Water	Preventive maintenance (calibration) program for pH and flow meters
14	N3 - Production Water	Critical spare parts inventory
15	N3 - Production Water	Segregated chemical tote storage area
16	N3 - Production Water	Respirators and protective clothing for chemical tote handling
17	N3 - Production Water	Emergency eyewash and shower equipment
18	N3 - Production Water	Fork truck driver certification program
19	N3 - Production Water	DOT specification totes for chemicals
20	N4 - Subcategory A	Waste acceptance procedure
21	N4 - Subcategory A	Overflow line from mixing tank to alternate mixing tank
22	N4 - Subcategory A	Secondary containment (unloading area, holding tank, chemical totes, chemical feed lines, GEM unit, surge tank, final effluent tanks)
23	N4 - Subcategory A	Preventive maintenance (calibration) program for pH and flow meters
24	N4 - Subcategory A	Critical spare parts inventory
25	N4 - Subcategory A	Segregated chemical tote storage area
26	N4 - Subcategory A	Respirators and protective clothing for chemical tote handling
27	N4 - Subcategory A	Emergency eyewash and shower equipment
28	N4 - Subcategory A	Fork truck driver certification program
29	N4 - Subcategory A	DOT specification totes for chemicals
30	N5 - Subcategory C	Waste acceptance procedure
31	N5 - Subcategory C	Overflow line from mixing tank to alternate mixing tank
32	N5 - Subcategory C	Secondary containment (unloading area, holding tank, clarifier unit, ozone tank, GAC vessels, final effluent tanks)
33	N5 - Subcategory C	Preventive maintenance (calibration) program for pH, flow, and ORP meters
34	N5 - Subcategory C	Critical spare parts inventory
35	N6 - Domestic Waste Water	Overflow line from mixing tank to alternate mixing tank
36	N6 - Domestic Waste Water	Secondary containment (unloading area, mixing tank, equalization tank)
37	N7 - Utilities	Portable eyewash/shower units available for rental
38	N8 - Hazardous Material Storage	Secondary containment (hazardous material storage building)
39	N8 - Hazardous Material Storage	Fork truck driver certification program
40	N8 - Hazardous Material Storage	Accessible spill kit
41	N8 - Hazardous Material Storage	Emergency eyewash and shower equipment
42	N8 - Hazardous Material Storage	HAZWOPER-trained hazardous material spill responders
43	N8 - Hazardous Material Storage	DOT specification totes for chemicals
44	N8 - Hazardous Material Storage	Segregated chemical storage areas designated in building
45	N8 - Hazardous Material Storage	Procedure prohibiting acceptance of waste material in totes or drums
46	N8 - Hazardous Material Storage	Procedure prohibiting of pumping drums or totes into any vacuum truck
47	N8 - Hazardous Material Storage	Operator training regarding procedures
48	N9 - Human Factors and Facility Siting	Fenced, gated property
49	N9 - Human Factors and Facility Siting	Sign-in procedure for truck drivers
50	N9 - Human Factors and Facility Siting	Truck driver safety orientation program
51	N9 - Human Factors and Facility Siting	Multiple property exits
52	N9 - Human Factors and Facility Siting	Personal hydrogen sulfide gas detectors carried by employees
53	N9 - Human Factors and Facility Siting	Fire extinguishers throughout property (as specified by Fire Marshal)
54	N9 - Human Factors and Facility Siting	Security cameras on site

**Process Hazard Analysis**  
**Summary of Controls and Safeguards**

**Ri-Nu**  
**27-Nov-18**

#	Node	Engineering Controls or Other Safeguard
55	N9 - Human Factors and Facility Siting	NFPA hazard rating signage at entrance gates
56	N9 - Human Factors and Facility Siting	Documented personal protective equipment hazard assessments
57	N9 - Human Factors and Facility Siting	Personal protective equipment training for employees
58	N9 - Human Factors and Facility Siting	Working alone prohibited
59	N9 - Human Factors and Facility Siting	Employee Safety Manual
60	N9 - Human Factors and Facility Siting	Operations and Maintenance Manual
61	N9 - Human Factors and Facility Siting	Waste Analysis Plan
62	N9 - Human Factors and Facility Siting	Training program for all operators, addressing operations, safety, emergency response

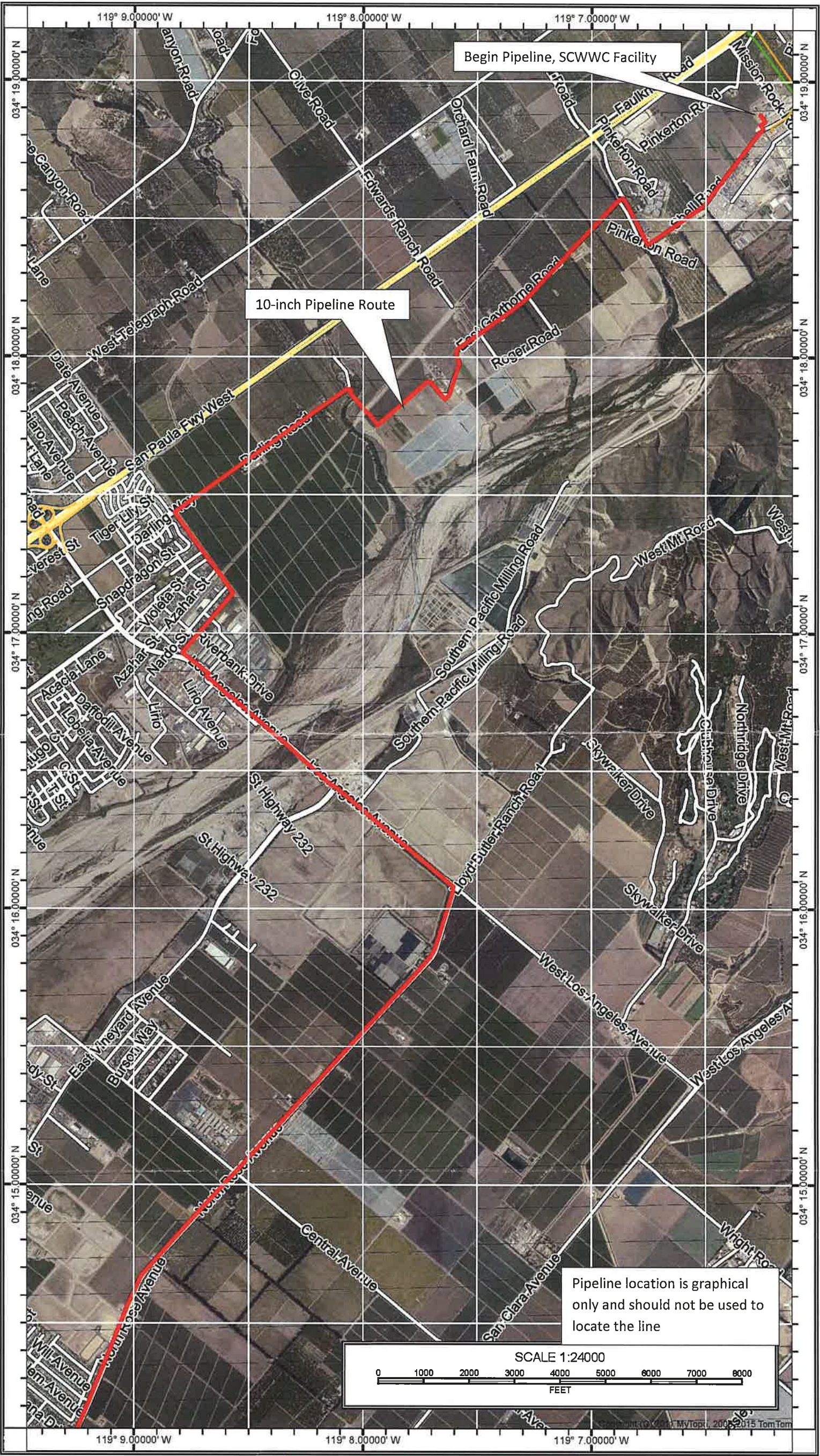


**Attachment G**  
**Summary of Recommendations**

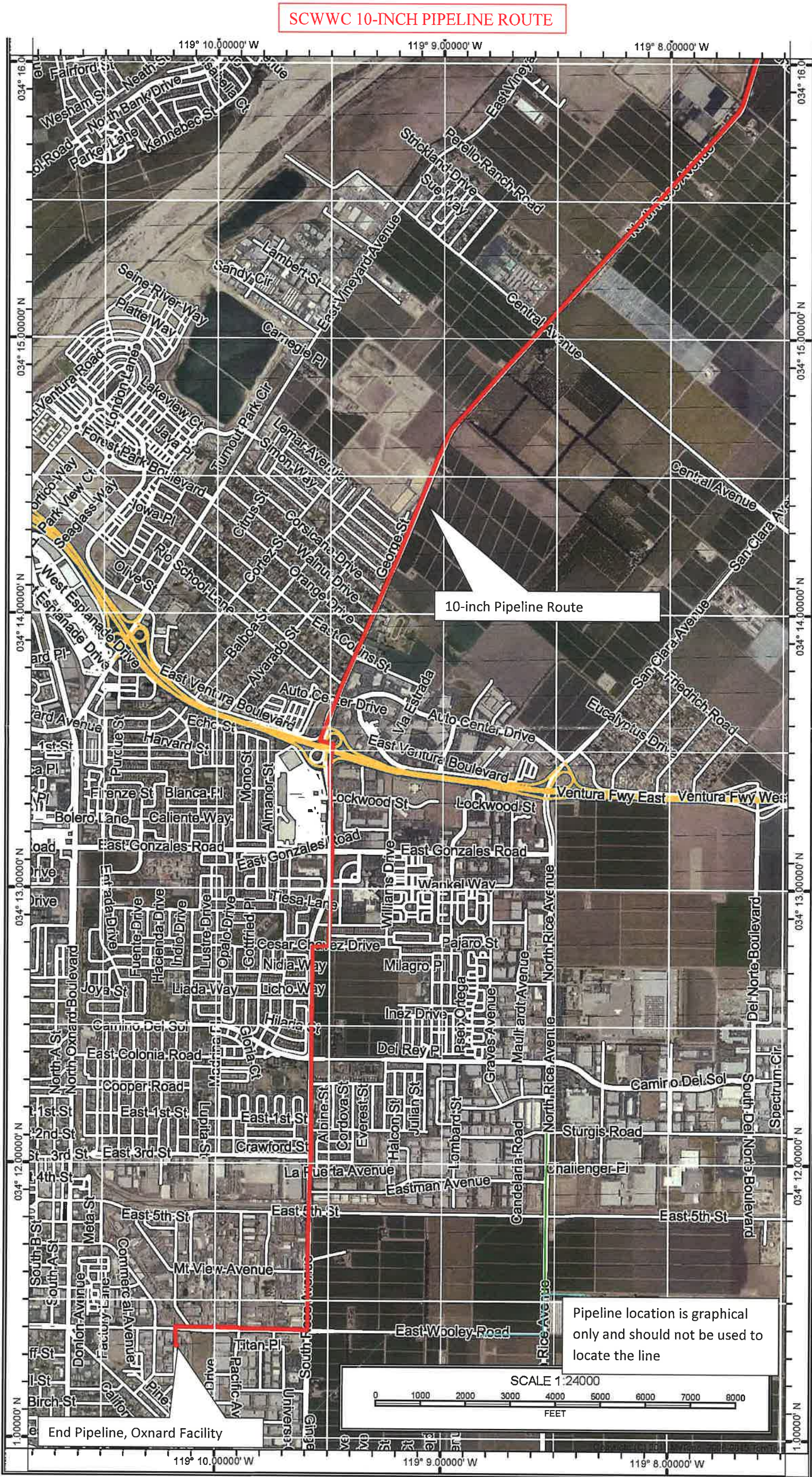
**Process Hazard Analysis**  
**Summary of Recommendations**

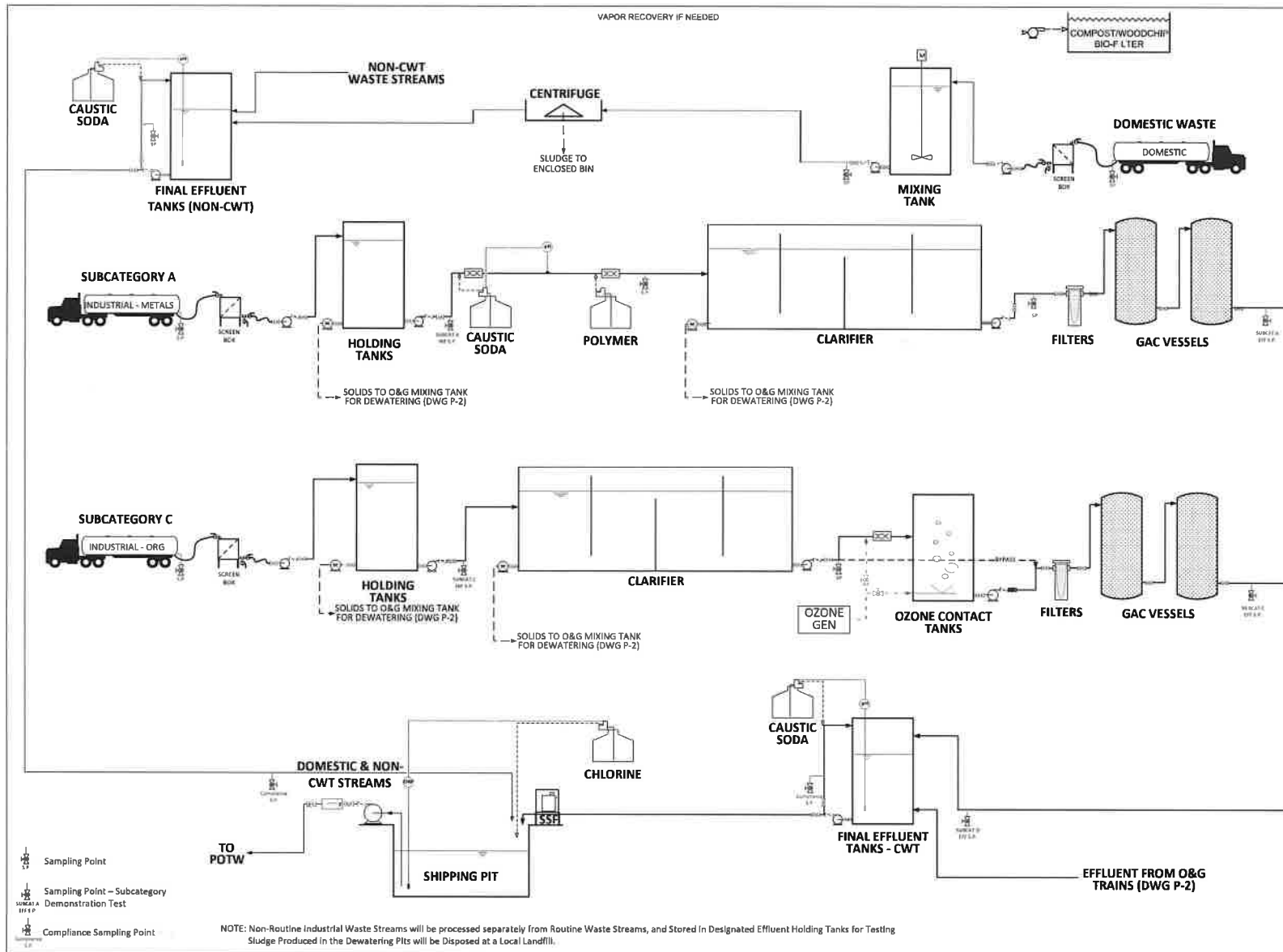
**Ri-Nu**  
**27-Nov-18**

ID#	Recommendation	Responsible Person	Estimated Completion Date	Actual Completion Date	Final Resolution	Risk Re-Ranking		
						S	L	R
N3-1	Consider use of double-walled tubing for acid and other chemical transfers.							
N3-2	Consider most optimal design of chemical feed areas to promote easy access by fork trucks and minimize opportunities for collisions with process equipment and chemical totes.							
N8-1	Establish designated path for trucks to deliver totes to hazardous material storage locker/building. Design should minimize amount of handling necessary to unload/store totes.							
N8-2	Hazardous material storage locker/building shall meet local/state chemical storage and fire protection safety requirements.							
N8-3	Verify O&M Manual clearly describes policies regarding (1) wastes in drums or totes will not be accepted and (2) prohibition of pumping drums or totes into a vacuum truck.							
N8-4	Implement a "New Chemical" policy to address pre-approval process, purchasing, use, storage, training, and other appropriate safety precautions.							
N9-1	Establish program to familiarize local responders with site operations and hazards. Program should include periodic site visits by responders and joint participation in emergency drills.							
N9-2	Provide appropriate hazard warning signage at entrances to hazardous materials storage building/locker.							
N9-3	Provide appropriate signage/stenciling to clearly identify waste unloading valves/piping in truck unloading area.							



**SCWWC 10-INCH PIPELINE ROUTE**

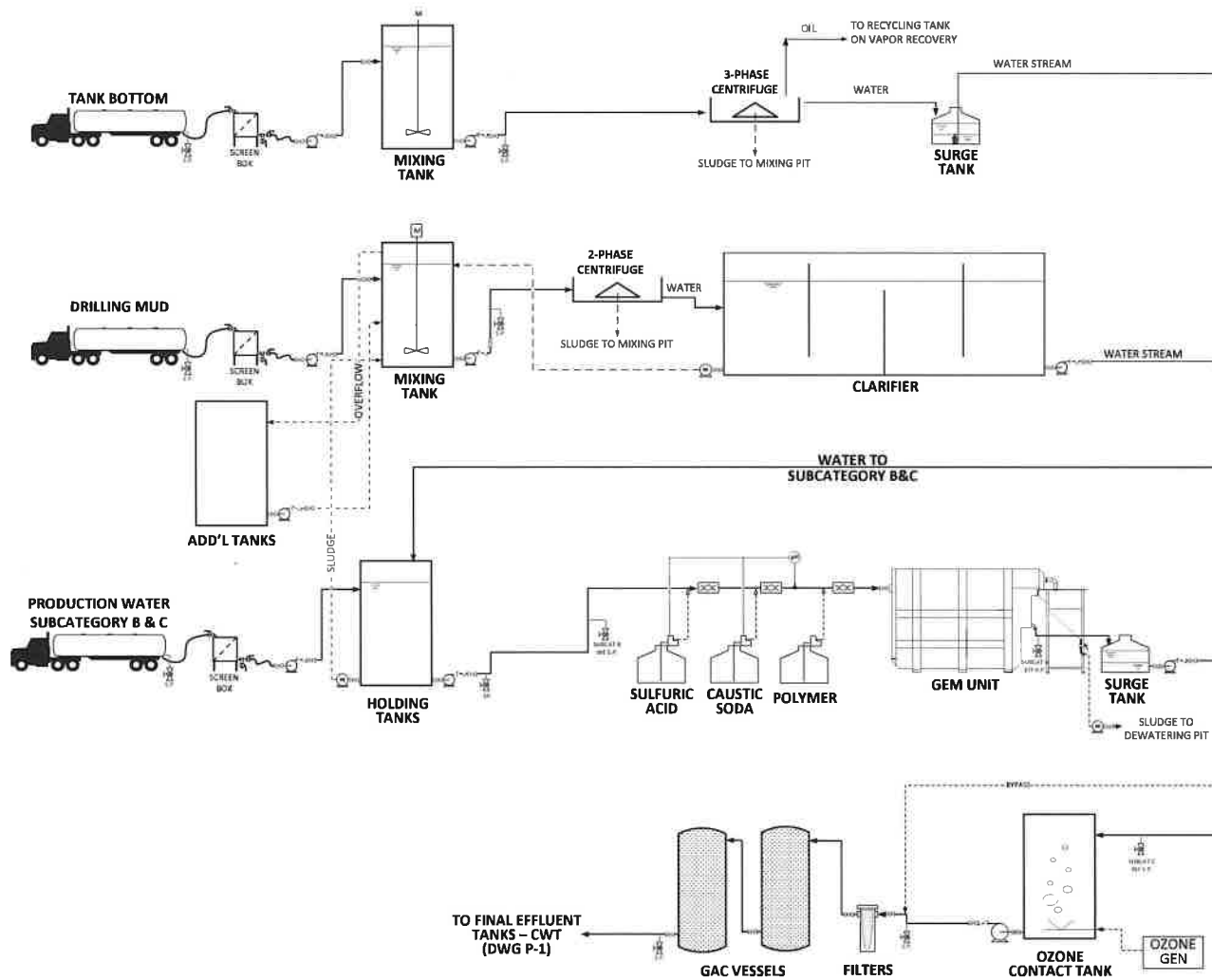




DRAWING NO.	P-1				
	TITLE				
	CWT & DOMESTIC WASTE TREATMENT FACILITY				
	PIPING & INSTRUMENTATION DIAGRAM				
SCALE	INDUSTRIAL & DOMESTIC WASTE TREATMENT FACILITY				
	NONE				
	APPROVED BY				
	DATE				

County of Ventura  
Initial Study  
PL15-0106  
Attachment 9 – Process Flow  
Diagrams

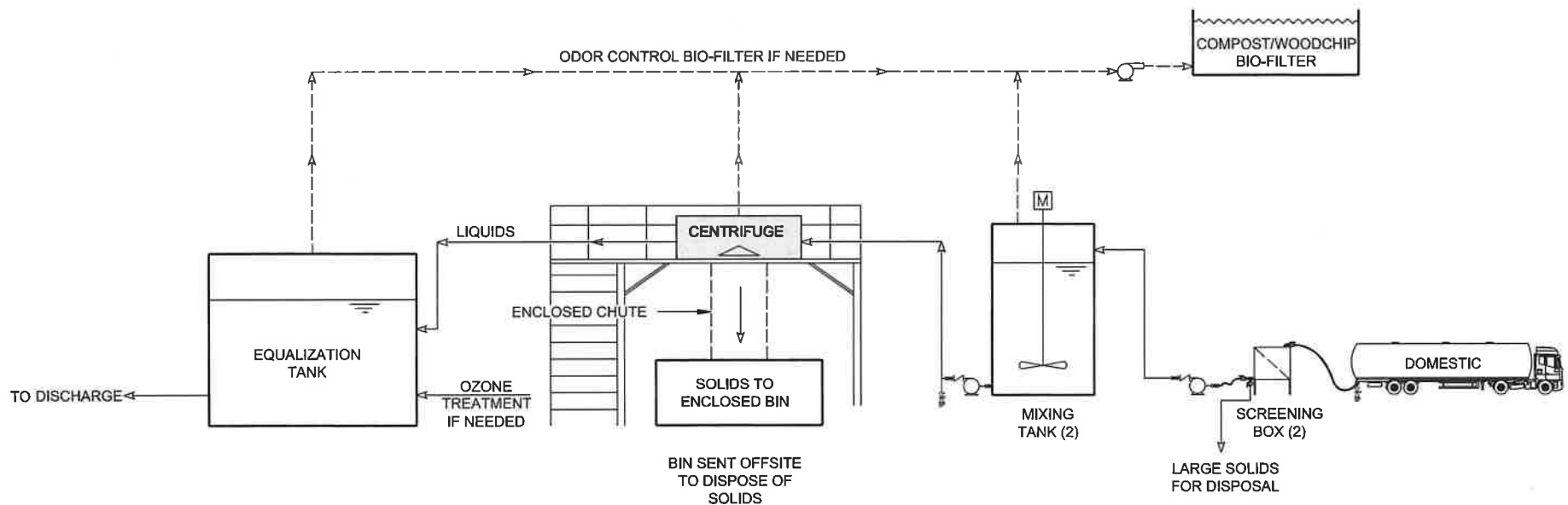
INVIOTREAT INC.  
INNOVATIVE TREATMENT  
P.O. BOX 1000  
VENTURA, CA 93008  
(805) 644-1000



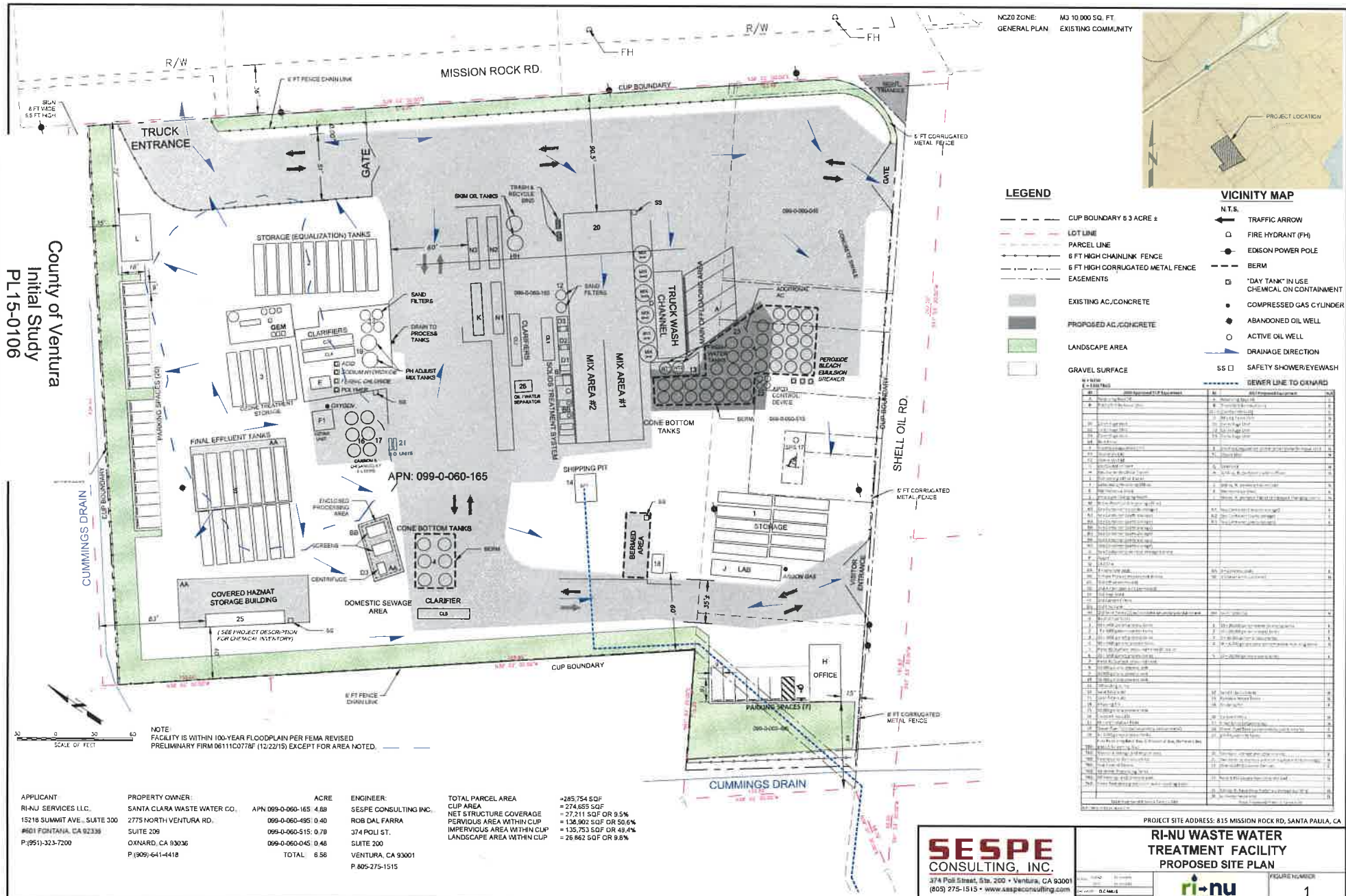
- Sampling Point
- Sampling Point - Subcategory Demonstration Test
- Compliance Sampling Point

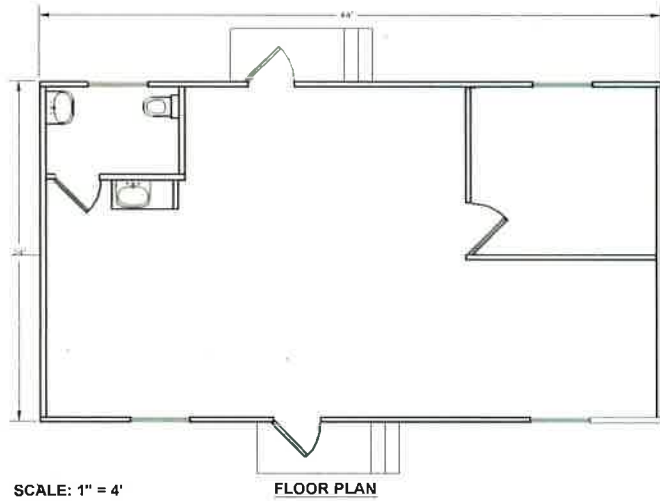
NOTE: SLUDGE PRODUCED IN THE DEWATERING PITS WILL BE DISPOSED AT A LOCAL LANDFILL

<b>INVIROTREAT INC.</b> INNOVATIVE TREATMENT <small>PO BOX 1000          HICKORY, NC 28544          704-744-1111</small>			
TITLE: CWT & DOMESTIC WASTE TREATMENT FACILITY DESCRIPTION: PIPING & INSTRUMENTATION DIAGRAM OIL & GAS TREATMENT TRAIN SCALE: NONE DRAWN BY: AL CHECKED BY: AL DATE: 4/29/18			
DRAWING NO. <b>P-2</b>			



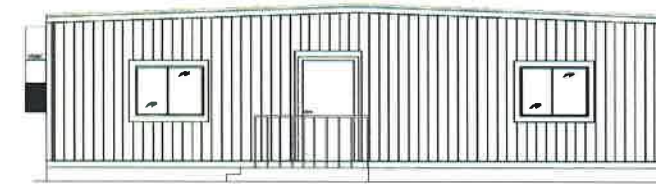
<b>SESPE</b> CONSULTING, INC. 374 Poli Street, Ste.200 • Ventura, CA 93001 (805) 275-1515 www.sespeconsulting.com	RI-NU WASTE WATER TREATMENT FACILITY PROPOSED DOMESTIC WASTE PROCESS FLOW	
	FIGURE NUMBER	1-1
	DATE	2018 OCT 11
	BY	GJC





SCALE: 1" = 4'

FLOOR PLAN



SCALE: 1" = 4'

EAST

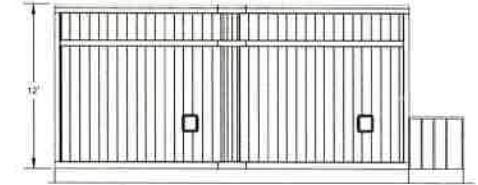


SCALE: 1" = 4'

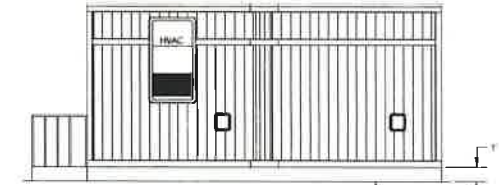
WEST



SCALE OF FEET



NORTH



SOUTH

PROPOSED GRADE/BITE  
8450.194



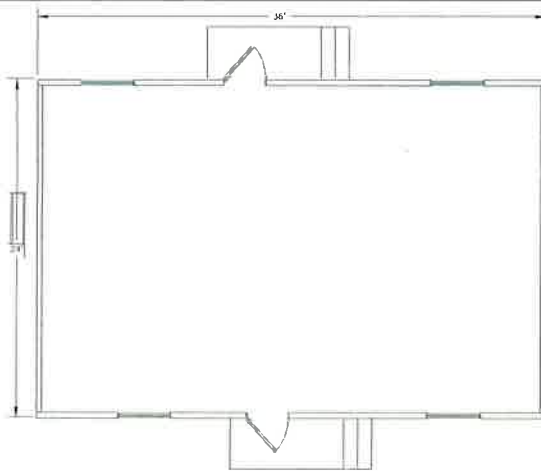
PROJECT SITE ADDRESS: 825 MISSION ROCK RD, SANTA PAULA, CA

**RI-NU WASTE WATER  
OFFICE**

DATE: 04/15/2016  
BY: [Signature]  
CHECKED: [Signature]  
DATE: 04/15/2016



FIGURE NUMBER  
**1**



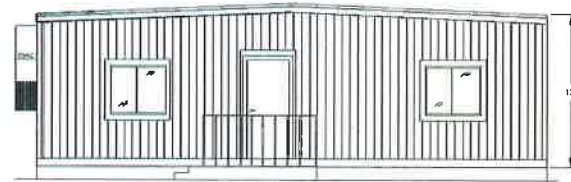
SCALE: 1" = 4'

FLOOR PLAN

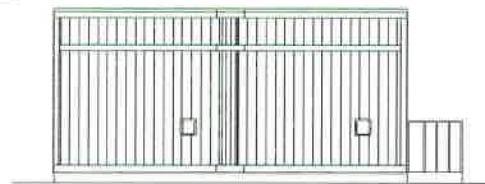


SCALE: 1" = 4'

WEST

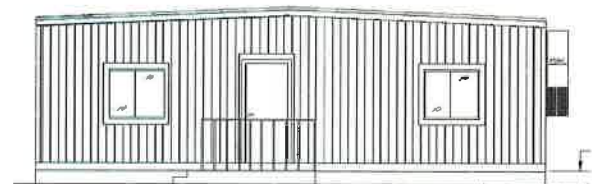


SOUTH



SCALE: 1" = 4'

EAST



NORTH

PROPOSED GRADE/BFE  
ELEV 100



SCALE OF FEET



PROJECT SITE ADDRESS: 815 MISSION ROCK RD, SANTA PAULA, CA

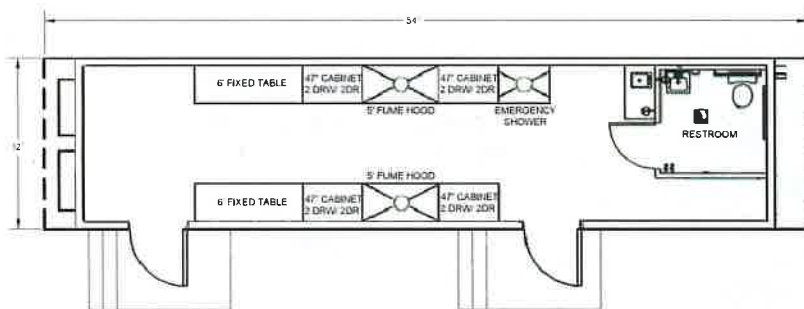
# RI-NU WASTE WATER EMPLOYEE CHANGING ROOM

DATE: 05/11/2018  
BY: J. L. GARCIA  
CHECKED: J. L. GARCIA  
APPROVED: J. L. GARCIA



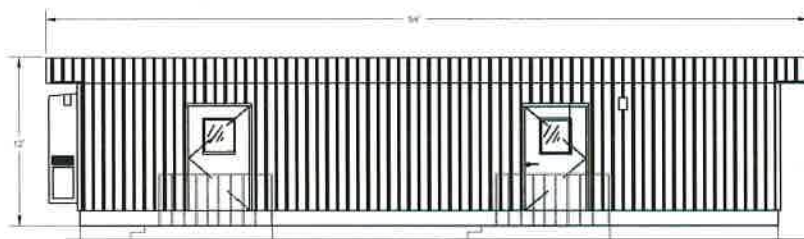
FIGURE NUMBER

1



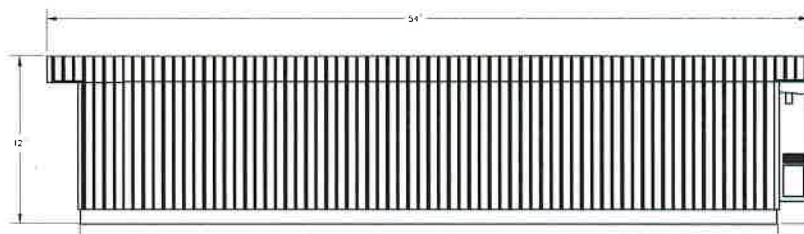
SCALE: 1" = 4'

FLOOR PLAN



SCALE: 1" = 4'

WEST



SCALE: 1" = 4'

EAST



#### KEYNOTES INTERIOR FINISHES AND ACCESSORIES

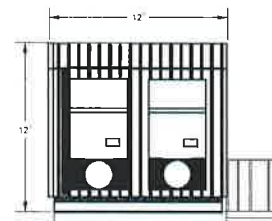
- 1.1 FLOOR SHEET 3030, 1/2\"/>

#### KEYNOTES EXTERIOR FINISHES AND ACCESSORIES

- 1.1 26 GA. RIBBED METAL SIDING OVER 1/2\"/>



SOUTH



NORTH



PROJECT SITE ADDRESS: 835 MISSION ROCK RD, SANTA PAULA, CA

#### RI-NU WASTE WATER LAB

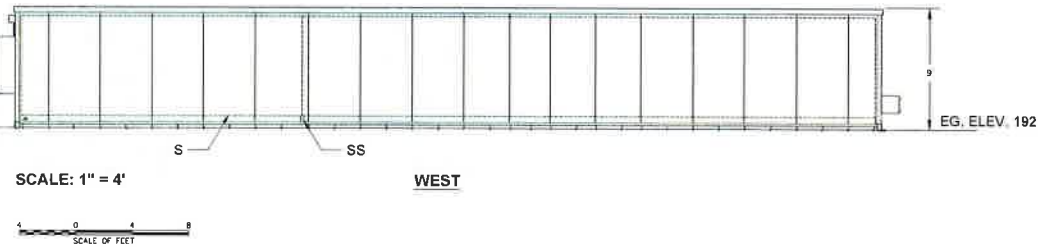
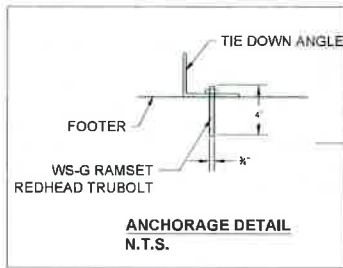
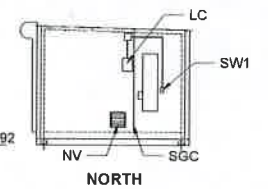
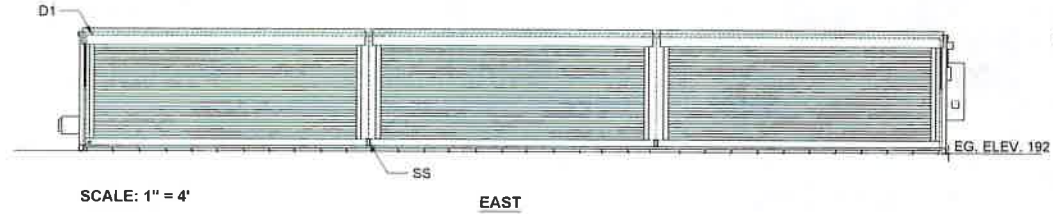
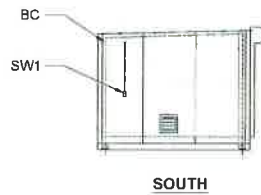
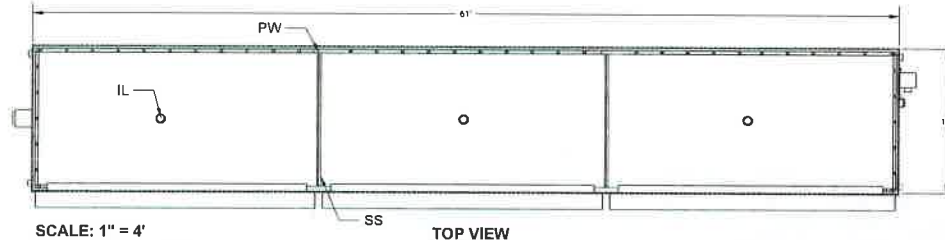
DATE: 01/18/2018  
DRAWN BY: J. B. BROWN  
CHECKED BY: J. B. BROWN  
DATE: 01/18/2018



FIGURE NUMBER  
1

**LEGEND:**

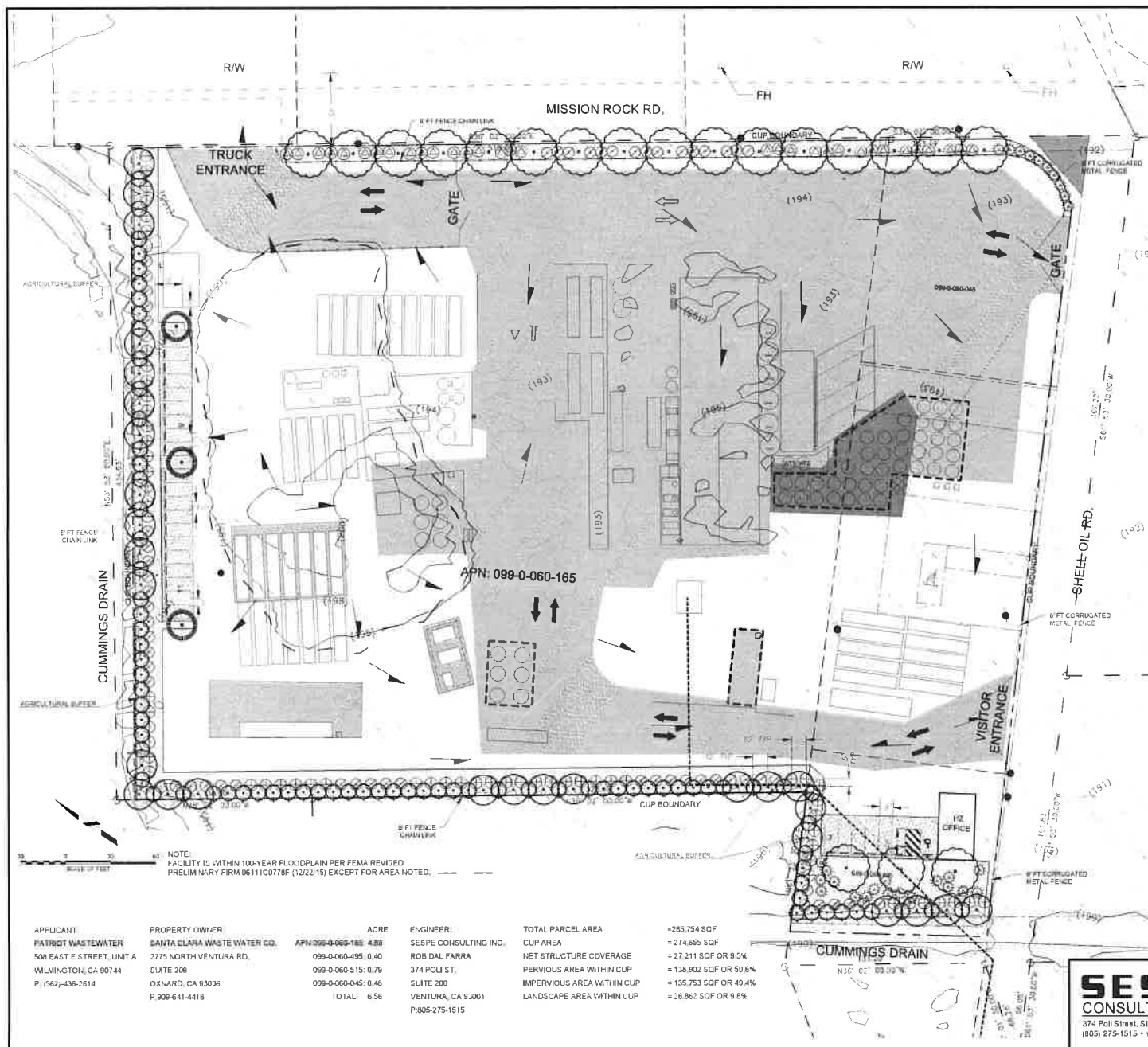
- S - SUMP
- SGC - STATIC GROUND CONNECTOR
- BC - BUILDING COLOR - BLEACHED BONE
- NV - NATURAL VENTILATION WITH RAIN LOUVRE
- SS - SUMP SEPARATOR
- PW - PARTITION WALL
- LC - LOAD CENTER
- IL - INTERIOR LIGHTNING (3)
- SW1 - LIGHT SWITCH
- D1 - ROLLUP DOOR



PROJECT SITE ADDRESS: 815 MISSION ROCK RD, SANTA PAULA, CA

**PATRIOT WASTE WATER  
HAZARD MATERIAL STORAGE**

DATE: 05/08/2018	ri+nu Sustainable Solutions	FIGURE NUMBER 1
DESIGNED BY: G. S. S. S.		
CHECKED BY: G. S. S. S.		
DATE: MAY 2018		



# PLANT LEGEND

SIZE	QUANTITY	SYMBOL	BOTANICAL NAME COMMON NAME
24" DIA.	18	(Symbol)	EUCALYPTUS GLOBULIFLORUS RED BORN BARK
24" DIA.	3	(Symbol)	PHILUS ELSTONIA AFRICAN PINE
24" DIA.	20	(Symbol)	FRSIANA CONFERTA DRISBANE SOIL
15 GAL.	80	(Symbol)	CELEBRITY FLYING ALTRAMAY WILLOW
8 GAL.	28	(Symbol)	CELEBRITY FLYING SNOW FLYING
5 GAL.	32	(Symbol)	CELEBRITY FLYING SNOW FLYING
15 GAL.	64	(Symbol)	CELEBRITY FLYING SNOW FLYING
15 GAL.	38	(Symbol)	CELEBRITY FLYING SNOW FLYING
			BANK WALK 5' ON WEED FARM

# LEGEND

(Symbol)	CUP BOUNDARY 6.3 ACRE ±
(Symbol)	UGT LINE
(Symbol)	PARCEL LINE
(Symbol)	6 FT HIGH CHAINLINK FENCE
(Symbol)	6 FT HIGH CORRUGATED METAL FENCE
(Symbol)	EASEMENTS
(Symbol)	EXISTING AC/CONCRETE
(Symbol)	PROPOSED AC/CONCRETE
(Symbol)	LANDSCAPE AREA
(Symbol)	GRAVEL SURFACE
(Symbol)	TRAFFIC ARROW
(Symbol)	FIRE HYDRANT (FH)
(Symbol)	EDISON POWER POLE
(Symbol)	BERM
(Symbol)	"DAY TANK" IN USE
(Symbol)	CHEMICAL OIL CONTAINMENT
(Symbol)	COMPRESSED GAS CYLINDER
(Symbol)	ABANDONED OIL WELL
(Symbol)	SAFETY SHOWER/EYE WASH
(Symbol)	SEWER LINE TO OAKLAND

NOTE:  
FACILITY IS WITHIN 100-YEAR FLOODPLAIN PER FEMA REVISED  
PRELIMINARY FIRM 061110078F (12/22/15) EXCEPT FOR AREA NOTED.

APPLICANT  
PATRIOT WASTEWATER  
508 EAST E STREET, UNIT A  
WILMINGTON, CA 90744  
P: (562) 436-2614

PROPERTY OWNER  
SANTA CLARA WASTE WATER CO.  
2775 NORTH VENTURA RD.  
SUITE 206  
OAKLAND, CA 94606  
P: 908-641-4418

ACRE  
APN 099-0-060-165 4.89  
099-0-060-495 0.40  
099-0-060-515 0.79  
099-0-060-045 0.48  
TOTAL: 6.56

ENGINEER:  
SESPE CONSULTING INC.  
ROB DAL FARRA  
374 POLI ST.  
SUITE 200  
VENTURA, CA 93001  
P: 805-275-1515

TOTAL PARCEL AREA  
CUP AREA  
NET STRUCTURE COVERAGE  
PERVIOUS AREA WITHIN CUP  
IMPERVIOUS AREA WITHIN CUP  
LANDSCAPE AREA WITHIN CUP

= 285,754 SQ  
= 274,655 SQ  
= 27,211 SQ OR 9.5%  
= 136,902 SQ OR 50.6%  
= 135,753 SQ OR 49.4%  
= 26,862 SQ OR 9.8%

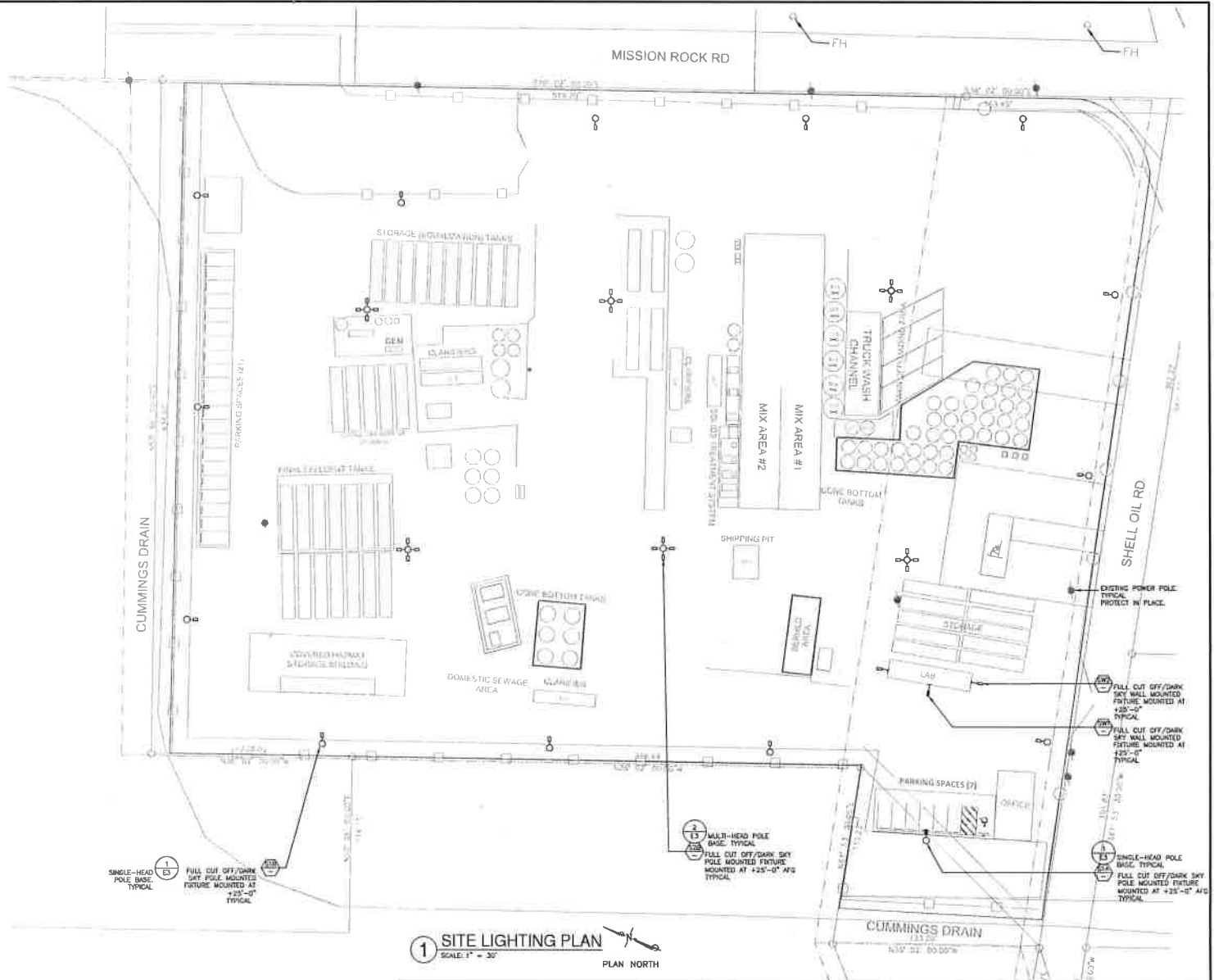
**SESPE**  
CONSULTING, INC.  
374 Poli Street, Ste. 200 • Ventura, CA 93001  
(805) 275-1515 • www.sespeconsulting.com

**RI - NU WASTE WATER  
TREATMENT FACILITY  
PROPOSED SITE PLAN**

**JORDAN, GILBERT & BAIN**  
LANDSCAPE ARCHITECTS, INC.  
458 NORTH VENTURA AVE., VENTURA, CA 93001  
(805) 642-3641 FAX (805) 653-7874  
JORDAN, GILBERT & BAIN, Landscape Architects, Inc. © 2016

PROJECT SITE ADDRESS: 815 MISSION ROCK RD, SANTA PAULA, CA

County of Ventura  
Initial Study  
PL15-0106  
Attachment 12 – Conceptual  
Landscape Plans



**C. HOOD ASSOCIATES, INC.**  
CONSULTING ELECTRICAL ENGINEERS  
850 East Front Street Phone: (805) 641-4013  
Ventura, California 93001 Fax: (805) 641-0450  
www.choodassociates.com  
Copyright © 2017

**RASMUSSEN & ASSOCIATES**  
Architects - Planning - Interiors  
81 & California Street  
Fourth Floor  
Ventura, California 93001  
CRO 646-1894

**W-NU WASTE WATER  
TREATMENT FACILITY  
PROPOSED SITE PLAN**

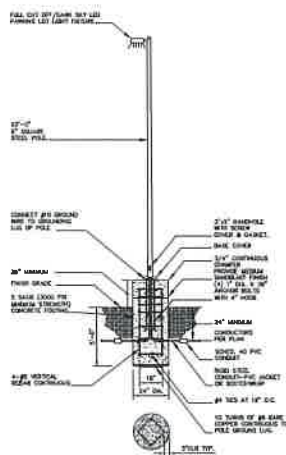
**ri-nu**

SITE LIGHTING PLAN  
**E1**



# DETAIL NOTES:

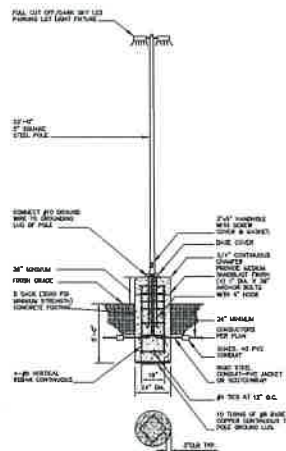
USE COMPRESSOR LUGS TO TERMINATE CONDUCTORS TO LIGHT FIXTURES



**SINGLE HEAD  
TYPICAL PARKING LOT LIGHTING  
24\"/>**

# DETAIL NOTES:

USE COMPRESSOR LUGS TO TERMINATE CONDUCTORS TO LIGHT FIXTURES



**MULTI-HEAD  
TYPICAL PARKING LOT LIGHTING  
24\"/>**

# OUTDOOR LIGHTING FIXTURE SCHEDULE

TAG	SYMBOL	QUANTITY	DESCRIPTION	LAMP - TYPE AND QUANTITY	LOCATION	MANUFACTURER AND MODEL NUMBER	REMARKS
128	128	128	LED SINGLE HEAD PARKING LOT LIGHT FIXTURE	LED 4000K	POLE MOUNT	UTRONA 300T-LED-400-1800-40K-T34-0VOLT	MOUNTED 25'-0\"/>
128	128	128	LED SINGLE HEAD PARKING LOT LIGHT FIXTURE	LED 4000K	POLE MOUNT	UTRONA 300T-LED-400-1800-40K-T34-0VOLT	MOUNTED 25'-0\"/>
128	128	128	LED SINGLE HEAD PARKING LOT LIGHT FIXTURE	LED 4000K	POLE MOUNT	UTRONA 300T-LED-400-1800-40K-T34-0VOLT	MOUNTED 25'-0\"/>
457	457	457	EXTENDED LED SINGLE HEAD WALL MOUNT LIGHT FIXTURE	LED 4000K	WALL MOUNT	UTRONA 300T-LED-400-1800-40K-T34-0VOLT	MOUNTED 25' AFF ON BUILDING WALL
457	457	457	EXTENDED LED SINGLE HEAD WALL MOUNT LIGHT FIXTURE	LED 4000K	WALL MOUNT	UTRONA 300T-LED-400-1800-40K-T34-0VOLT	MOUNTED 25' AFF ON BUILDING WALL

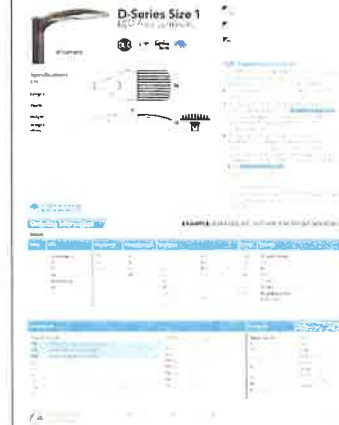
# OUTDOOR LIGHTING SCHEDULE NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PROPER TYPES OF PERMITS FOR ALL REQUIRED FIXTURES TO FIT THE CEILING HEIGHT.
- FIXTURE TYPE IN CONTACT WITH INSULATION SHALL HAVE ALL LISTED TYPICAL BARNES.
- CONTRACTOR SHALL VERIFY THE TYPE OF CEILING BEFORE ORDERING NEW FIXTURES. CONTRACTOR IS FULLY RESPONSIBLE TO PROVIDE ALL NECESSARY BRACKETS TO FIT CEILING CONDITIONS AT NO EXTRA CHARGE TO THE OWNER.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES.
- SEE ARCHITECTURAL PLANS FOR EXACT DIMENSIONAL CEILING CONFIGURATION AND LIGHTING PLACEMENT.
- QUANTITY (CHECK AND NUMBER QUANTITY IN LISTED FIXTURE TYPE IS TYPICAL FOR EXISTING AREA)

SW1 SW2



51A 51B 52B



**C. Wood & Associates, Inc.**  
CONSULTING ELECTRICAL ENGINEERS  
858 East Front Street Phone (805) 641-4013  
Ventura, California 93001 Fax (805) 641-0450  
www.woodandassociates.com  
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**RASMUSSEN & ASSOCIATES**  
Architects - Planning - Interiors  
81 & Gallieria Street  
Fourth Floor  
Ventura, California 93001  
(805) 848-1884

RI-NU WHITE WATER  
TREATMENT FACILITY

PROPOSED SITE PLAN



LIGHTING FIXTURE  
SCHEDULE AND ELECTRICAL  
DETAILS  
E3



374 Poli Street, Suite 200 • Ventura, CA 93001  
Office (805) 275-1515 • Fax (805) 667-8104

## **Sign Plan Summary**

Ri-Nu Services, LLC  
815 Mission Rock Road  
Santa Paula, CA 93060

**March 2018**



Source: Google Earth 2016  
 Approximate Site Boundaries  
 1 - Main Facility Sign  
 2 - Northeast Corner of Site  
 3 - Facility Entrance Gate



**SESPE**  
 CONSULTING, INC.

**SIGN  
 PLAN**

**Ri-Nu Services, LLC**  
 815 Mission Rock Road  
 Santa Paula, CA 93060

PROJECT #:		DATE:	3/1/18
SCALE:	as shown	DRAWN BY:	KCP

**Map Reference #1: Main Facility Sign**



Photo taken 1/13/2017.

Note: Sign shown above is a mock-up created in Photoshop. Current sign shows "Green Compass".

**Dimensions:** 3' x 8'

**Height Above Ground:** 2' 3"

**Materials:** Plastic sign with wooden 6" diameter posts

**Description:** This sign is facing north adjacent to the main facility entrance along Mission Rock Road (Map Reference #1). The sign currently reads "Green Compass" but will be changed to "Ri-Nu Services, LLC" following project approval.

**Map Reference #2: Northeast Corner of Site**



Photo taken 1/13/2017.

<b>Dimensions:</b>	1'6" x 2'
<b>Materials:</b>	Metal
<b>Description:</b>	Three (3) identical versions of this sign are posted at the facility, specifically at the main facility entrance (shown above), the back gate, and the front gate. The sign shown above is facing east adjacent to the main facility entrance along Mission Rock Road (Map Reference #2).

**Map Reference #2: Northeast Corner of Site**



Photo taken 1/13/2017.

<b>Dimensions:</b>	10" x 7"
<b>Materials:</b>	Plastic
<b>Description:</b>	Three (3) identical versions of this sign are posted at the facility, specifically at the main facility entrance (shown above), the back gate, and the front gate. The sign shown above is facing east adjacent to the main facility entrance along Mission Rock Road (Map Reference #2).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 2' x 1'6"

**Materials:** Metal

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 10" x 1'2"

**Materials:** Metal

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3). Please note, the sign currently reads "SCWW" but will be changed to "Ri-Nu" following project approval.

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 11" x 8 ½"

**Materials:** Metal

**Description:** Four (4) identical versions of this sign are posted in various places around the perimeter of the facility. The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017. \*

**Dimensions:** 10" x 1'2"

**Materials:** Metal

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 9 ¼" x 1'2"

**Materials:** Metal

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 3' x 12 ¾"

**Materials:** Plastic

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 2' x 2'

**Materials:** Plastic

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 2' x 2'

**Materials:** Metal

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 1' x 2'6"

**Materials:** Plastic

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 1' x 2'6"

**Materials:** Plastic

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).

**Map Reference #3: Facility Entrance Gate**



Photo taken 1/13/2017.

**Dimensions:** 1' x 8'

**Materials:** Plastic

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3). Please note, the sign currently reads "SCWW" but will be changed to "Ri-Nu" following project approval.

**Map Reference #3: Facility Entrance Gate**

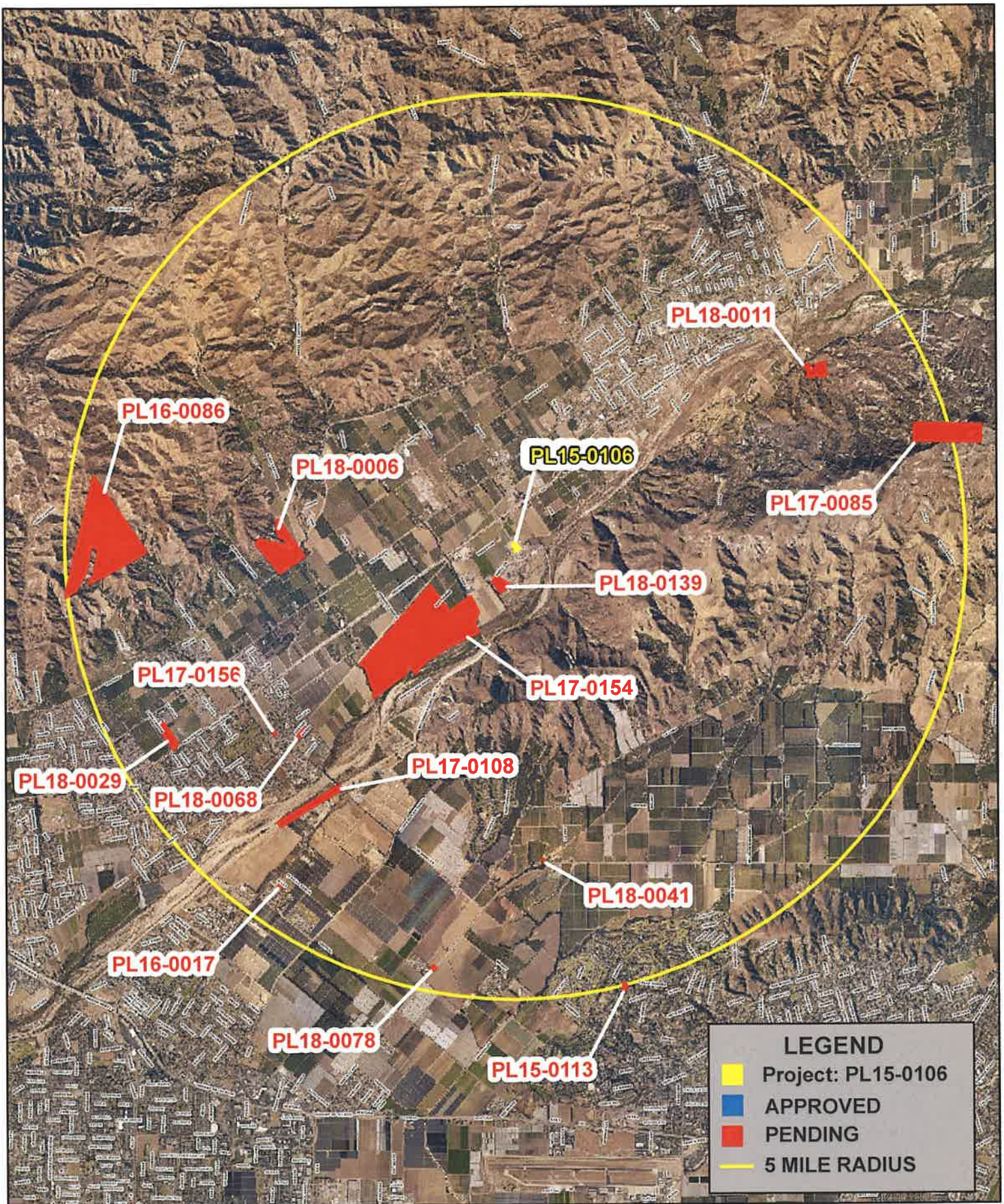


Photo taken 1/13/2017.

**Dimensions:** 10" x 1'2"

**Materials:** Plastic

**Description:** The sign shown above is posted on the facility entrance gate, off Mission Rock Road (Map Reference #3).



Ventura County, California  
Resource Management Agency  
GIS Development & Mapping Services  
Map Created on 02-19-2019  
This aerial imagery is under the  
copyrights of Pictometry  
Source: Pictometry, Jan.2017



County of Ventura  
Initial Study  
PL15-0106  
**Attachment 15 – Map Used in the  
Cumulative Impacts Analysis**

0 0.75 1.5 Miles

Disclaimer: This Map was created by the Ventura County Resource Management Agency Mapping Services - GIS which is designed and operated solely for the convenience of the County and related public agencies. This County does not warrant the accuracy of this map or any decision involving a risk of economic loss or physical injury should be made in reliance thereon.





**Santa Paula City Planning Department Significant Projects List**

#	Development Type	Status	Project #	Project Name	Applicant	Agent	Summary	Address
1	Large-Scale Development	Active	06-CDP-02	East Area 1 "Harvest"	Limonaria-Lewis	Tim Lewis	Massive expansion to East Santa Paula.	EA1
2	Large-Scale Development	Proposed	08-ANX-02	East Area 2 "Gateway"	Limonaria-Lewis	Tim Lewis	Site preparation involving surface grading, boulder extraction, and on-site rock crushing.	SE of intersection at State Route 126 & Hallock Drive
3	Large-Scale Development	Construction	13-MM-01	EA1 Rock Remediation	Limonaria-Lewis	Tim Lewis	Site preparation involving surface grading, boulder extraction, and on-site rock crushing.	EA1
4	Residential	Pending	14-CDP-02	Williams Homes / Hardison House	Williams Homes	Scott Smith	VTM 5928 for 39 lots for 36-SFR's (on 10-ac), including 1 Remainder Parcel for the Hardison House and relocation of accessory buildings	1226 Ojai Road
5	Residential	Completed	13-CDP-02	Trinity Lane Homes	Habitat for Humanity	Steve Dweyer	Eight new SFR's via Habitat for Humanity.	Trinity Lane
6	Residential	In Review	16-MISC-13	Sparkuhl Ranch - TTM 5308	Ty Santa Paula 12 Acres, LLC	Ruth Mansi	Finalize Tract Map for 19-home subdivision in Oaks neighborhood.	NE of intersection at Forrest & Cliff Drives
7	Residential / Specific Plan	Withdrawn	17-CR-03	Hagaman Homes	Del Fund #9 - Hagaman	Keith Hagaman	Proposal for 53-SFR's on hillside, with extensive grading and soil export.	N of intersection at Foothill & Peck Roads.
8	Development / Specific Plan	Approved	13-CDP-09	Airpark Specific Plan	Three Fliers, LLC	Stephen Wolpin	Twelve new buildings comprising 37 units hosting a blend of airport residential and/or aviation-related businesses.	1170 Montebello St.
9	Development / Specific Plan	EIR Approved	13-CDP-04	SP Business Park West	Bender Farms & McGaelic Group	Ilan Bender	New Light Industrial / R&D Park on west side.	SW of intersection at Telegraph & Beckwith
10	Industrial Park	Pending	12-CDP-05	Santa Maria Industrial Park	CA Rassmussen Trust	Ron Gallagher	Proposed Industrial Park.	324 W. Santa Maria St.
11	Industrial	In Review	16-CUP-06	BESS (5MW)	Z Global / Western Grid Development	Jaime Nagel	New 5-MW battery storage facility, solar charged, ties into SCE grid.	132 N. 13th St.
12	Industrial	In Review	17-CDP-08	BendPack Warehouse	BendPak	James McKnight	New 40K-sf warehouse and distribution facility for BendPak/Ranger automotive-related components.	1645 Lemonwood Drive
13	Commercial	Approved	16-CDP-02	Collector Car Vault	18201 E. Telegraph LLC	Adam Drazier	Adaptive reuse of former fruit packing warehouse into high-end vehicle storage.	18201 E. Telegraph Rd.
14	Industrial	Completed	13-CDP-05	CalPipe II	Bender Farms	Ilan Bender	A 45,000-sf factory for speciality pipe manufacturing.	957 Calpipe Road
15	Industrial	Construction	15-CDP-06	O'Kote Pipe Factory	Bender Farms	Ilan Bender	New 52,000-sf factory for speciality pipe manufacturing.	630 Todd Lane
16	Commercial	Pending	16-CDP-07	La Terraza Event Center	Adan Sandoval	same		1000-1008 E. Main Street
17	Commercial	Completed	16-CUP-05	Palazzio Event Center	Jose Melgar	Jose Melgar	Adaptive reuse of vacant Downtown building for multi-purpose venue.	814 E. Main Street
18	Institutional	In Review	16-DR-06	SPUSD Parking Lot at Palm Court	Santa Paula Unified School	Douglas Henning	New 22-space parking lot to serve Santa Paula High School.	41-42 Palm Court
19	Institutional / Civic	Pending	CIP 9314	CoSP Corporation Yard (joint facility for: Public Works, Water, and Buildings & Grounds)	City of Santa Paula	N.D. Doberneck	New joint-use facility (Corporation Yard) with offices, mechanics, workshops, storage, and vehicle parking.	unaddressed (lat/long: 34°19'57.94"N, -119°04'51.82"W)



# City of Santa Paula - Significant Projects

## Legend

-  Significant Projects
-  City Boundary

County of Ventura  
Initial Study  
PL15-0106  
Attachment 17 – Map Used in the  
Cumulative Impacts Analysis – City  
of Santa Paula



## **ODOR MINIMIZATION PLAN For Centralized Waste Treatment Facility**

**RI-NU Services, LLC**  
815 Mission Rock Road  
Santa Paula, CA 93060

Revised January 2019

**Prepared for:**  
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**ODOR MINIMIZATION PLAN  
For Centralized Waste Treatment Facility**

**Ri-Nu Services, LLC  
Santa Paula, California**

**January 2019**

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2. Odor Complaint Log

## PROPOSED ODOR MINIMIZATION PLAN

RI-NU Services, LLC  
Santa Paula, CA

January 2019

### 1.0 INTRODUCTION AND SUMMARY

**Facility Name:** RI-NU Services, LLC

**Facility Address:** 815 Mission Rock Road  
Santa Paula, California 93060

**Site Contact:** Timothy J. Koziol, (915) 323-7200

**Type of Material Processed:** Non-Hazardous Centralized Waste Treatment Facility

**Scale of Operation:** Approximately 6.6 acres

This Odor Minimization Plan (OMP) is intended to provide guidance to on-site personnel to properly monitor, assess, and mitigate odor impacts resulting from the handling, storage, and transport of waste fluids at the RI-NU Services, LLC Facility. In general, this handbook should be used to accomplish the following objectives:

1. Monitor site conditions and resulting odor emissions using accepted techniques.
2. Minimize origins of odor from the Facility, to the extent feasible.
3. Implement corrective actions as required to mitigate odor impacts resulting from Facility operations.

This OMP will be maintained on-site and revised as necessary to reflect any changes in the design or operations of this site. This OMP should be reviewed annually to determine if any revisions are necessary.

#### 1.1 Site Operations

The operations at the RI-NU Services, LLC (RI-NU) Facility (Facility) include: accepting, treating, and off-site disposal of various types of non-hazardous waste streams. Trucks from waste producing operations transport non-hazardous waste to the Facility. The Facility accepts non-hazardous wastes which include domestic wastes, industrial wastewater, oily wastewater, and oilfield sludge wastes. The Facility pumps waste from incoming trucks into enclosed tanks for temporary storage before treatment. Wastes which contain oil are pumped into enclosed tanks with vapor recovery systems which are routed to an emission control system (e.g. carbon drums). The Facility treats waste with equipment such as shakers, centrifuges, clarifiers, and screens. Solids that are extracted from the treatment process for non-domestic industrial wastes are moved to a mixing area where sawdust is incorporated for solidification. The mixed materials and treated fluids are transported off-site for disposal. The domestic waste treatment system will be enclosed and designed to minimize odorous emissions. Solids will be dropped

from the centrifuge through an enclosed chute into a closed top bin. Liquids will be sent to closed tanks and eventually into the existing sewer line connected to the City of Oxnard. Closed bins of solids generated from domestic waste treatment will be sent off-site for disposal. Primary potential sources of odor generation include incidental spills from transferring waste streams, the domestic waste treatment operation and the solids mixing operation.

## **1.2 Meteorological Conditions**

The Facility is located within the Mediterranean or subtropical dry summer climate zone, experiencing mild winters and warm, dry summers. Onshore breezes from the west are typical at the Facility. Strong, dry Santa Ana winds can also originate from the east, typically during the fall and winter months. The annual average temperature in the area is 61.2°F. The annual average minimum temperature is 47.5°F and the annual average maximum temperature is 75.0°F. Summer daytime temperatures often exceed 100°F. The average annual precipitation is 17.93 inches, and the primary months of precipitation are November through March. (*Western Regional Climate Center, 2016*)

Compiling historical wind data from nearby Santa Paula Airport from 2012 to 2018, average wind speeds in the area are estimated at 4.9 mph and generally blow from the west/southwest (onshore). As such, sensitive receptors to the east of the Project site have a greater potential to be impacted by odors originating from the Facility.

Overall, climatic conditions in Ventura County are not expected to significantly affect the waste treatment operation.

## **1.3 Proximity of Potential Odor Receptors**

The Facility is located in unincorporated Ventura County in an M3 industrial zone, and is surrounded by industrial and agricultural land uses. To the East and South of the Facility, the area is zoned as M3 and includes industrial facilities like Western Oil Spreaders, an overflow car park, and a vehicle scrap yard. To the West and North of the Facility, the area is zoned as AE-40 ac/MRP and includes agricultural operations. A residence exists immediately adjacent to the southwest corner of the Facility within the agricultural exclusive zone. Less than 6 residential properties are scattered within a 0.5-mile radius of the Facility, in both the agricultural and industrial zones.

## **1.4 Historical Complaints**

The Ventura County Air Pollution Control District (VCAPCD) is the primary agency that receives odor complaints. A record of complaints was obtained from the VCAPCD which spans from 1996 to 2015. During this time period, 24 odor complaints or approximately one odor complaint per year were received.

Many of the historic odor complaints may be accounted for by former lined open pit operations that historically were conducted onsite. The open pit operations were used for waste processing (dewatering/drying of solids) and are evident in aerial photos up to 2014. The open pit operations may have created excessive odors. Open pit treatment of wastes has ceased and will not be conducted in proposed future operations at this Facility.

## 2.0 POTENTIAL SOURCES OF ODOR

The potential sources of odor at the Facility include:

- Waste spillage at the main offloading area (labeled A on the site plan),
- Vapor produced from enclosed industrial and domestic waste receiving tanks (labeled 4 on the site plan),
- Solid materials stored in mixing area #1 and #2 (labeled Mix Area #1 and Mix Area #2 the site plan),
- The transportation and storage of domestic sewage waste in enclosed waste receiving tanks (labeled 4 on the site plan in the domestic sewage area).
- The domestic waste treatment operation.

Incoming industrial waste enters the Facility through the truck entrance and it is taken directly to the main offloading area. Facility personnel then transfer influent waste into the waste receiving tanks. Facility personnel are adequately trained to transfer influent waste without resulting in a spill. However, the transfer process may result in incidental waste spills that may produce offensive odors.

The waste receiving tanks, adjacent to the main offloading area, will store all incoming, non-domestic wastes, including non-hazardous oilfield waste, for processing. The waste in the receiving tanks may generate vapors that could cause offensive odors; however, the non-domestic waste receiving tanks are fitted with a vapor recovery system which remove and recover produced vapors. The recovered vapors are then transferred through an enclosed pipeline to a vapor control device (e.g. carbon drums). The vapor control device is not expected to produce significant odors. Therefore, the storage of non-domestic waste in the waste receiving tanks is not expected to produce significant odors.

As the waste stream is moved through the industrial waste treatment process, solids are removed from the waste solution. The extracted solids tend to be wet so they are immediately mixed with additives, typically sawdust or mulch, to form a physically stable material. The mixing process occurs in Mixing Area #2 which is an uncovered, sub-grade, contained area. Mixing is conducted with a front-end loader.

Solids in Mixing Area #2 are continuously mixed with additives until sufficiently solidified. After mixing, the solids are moved to Mixing Area #1 for temporary storage. Mixed solids will normally be transported off site within one hour of being mixed. If mixed solids are left for longer periods or overnight they will be covered to minimize emissions. No unmixed solids will be left overnight. Mixing Area #1 and #2 may produce offensive odors; however, proper housekeeping and storage of mixed material will significantly limit the release of offensive odors.

Incoming domestic waste enters the Facility through the truck entrance and it is taken directly to the domestic waste receiving tanks (labeled "Cone Bottom Tanks" on the site plan in the domestic sewage area). Facility personnel then transfer influent domestic sewage into enclosed holding tanks. Facility personnel are adequately trained to transfer influent waste without resulting in a spill. However, the transfer process may result in incidental domestic sewage spills that may produce offensive odors. The treatment process itself will be conducted in an enclosed system:

- Domestic waste will be pumped from the trucks through a basket screen or screen box to remove larger solids and then to closed top mixing tanks.
- From these tanks the waste stream will be pumped through an enclosed centrifuge where solids

- and liquids will be separated.
- Liquids will be sent to closed tanks and eventually to the pipeline for disposal at the Oxnard wastewater plant.
- Solids will be dropped from the centrifuge through an enclosed chute into a closed top bin. Once full, the bin will be shipped offsite to dispose of the solids.
- The practice of mixing domestic waste solids with other solids in the mixing pit will not be conducted.

The goal is to minimize open tanks and process equipment in the domestic treatment system. We expect that this will result in reduction of odor to acceptable levels. All of the tanks and centrifuge will be set up with vapor recovery fittings in case additional odor control is needed. Recovered vapor could be sent to a compost/wood chip biofilter for additional odor control if needed.

### 3.0 ODOR CONTROL MEASURES

#### 3.1 Design Considerations

- **Facility Siting:** The siting of the waste treatment operations in agricultural/industrial Ventura County away from many sensitive receptors is an acceptable site to reduce the potential for odor complaints. The Facility is located in an M3 industrial zone. The Facility is bordered to the East and South by industrial uses, and to the West and North by agricultural uses and less than 6 residences.
- **Equipment Design:** Non-hazardous oilfield waste materials are stored in enclosed waste receiving tanks (labeled as 4 on the site plan) with vapor recovery systems. Vapor recovery systems remove and recover produced vapors from the storage tanks. The recovered vapors are then transferred through an enclosed pipeline to a vapor control device. The enclosed vapor recovery systems and control device are expected to eliminate offensive odors produced by influent waste storage.

Domestic waste will be stored in closed tanks and processed through an enclosed system. If needed the system can be fitted with vapor recovery with vapors routed a compost/wood chip biofilter for additional odor control.

- **Equipment Reliability:** A comprehensive preventive maintenance program will be implemented to ensure the reliability of all equipment and vehicles, and to maintain equipment in good working order. Stationary equipment will be maintained on-site on a regular basis.

#### 3.2 Operational Considerations

The primary potential sources of odor from this Facility include incidental waste spills and storage of processed solids. Odor emissions from the transport, transfer, and storage of waste materials will be minimized through best management practices (BMPs). The Facility has implemented the following BMPs to minimize odors:

- Open pit treatment of wastes will not be conducted in proposed future operations at this Facility.
- The main offloading areas (industrial and domestic) will be washed down as needed to remove incidental spilled wastes that may generate offensive odors. The washdown water will be

recovered and pumped into the waste treatment system.

- Mixing Area #2 will only be used for the mixing of the solids generated by the industrial waste treatment operations with a solidification agent (typically sawdust). The solids will not be located in the mixing area more than four hours in duration before being mixed and transferred to Mixing Area #1. Mixing Area #2 will be cleaned out after each use. (These are conditions from the facility's former VCAPCD permit #00171 and are expected to be required in a future permit).
- The mixed solids in Mixing Area #1 will be covered except when solids are being placed into or taken out of the area. During trucking hours (7AM to 7PM), mixed solids will normally be transported off site within one hour of being mixed. If circumstances require mixed solids to be left for longer periods, such as after trucking hours, mixed solids that cannot be shipped off-site for disposal will be covered. The covering will consist of continuous heavy-duty plastic sheeting (4 mil or greater) or other covering to minimize odorous emissions to the atmosphere. The covering will be in good condition, overlapped at the seams, and securely anchored. (These are conditions from the facility's former VCAPD permit #00171 and are expected to be required in a future permit).
- If other BMPs do not effectively reduce odor emissions a chemical deodorizer may be employed.
- Facility personnel will be trained in the contents of this OMP.

#### 4.0 ODOR IDENTIFICATION RESPONSE

##### 4.1 Self-Inspections

The primary objective of self-inspection is to identify and minimize odors from the Facility before it affects the surrounding communities. This is accomplished through the use of routine self-inspections by Facility personnel.

- **Routine Daily Odor Monitoring:** Facility personnel will be trained to continually monitor the facility work areas for offensive odors. When Facility personnel detect an elevated odor of sufficient intensity that could lead to detection off-site, they will report the elevated odor to their supervisor. The supervisor then investigates the source. The investigator will inform the proper staff so that the problem area can be addressed by operations personnel.
- **Weekly Facility Perimeter Odor Monitoring:** At least weekly Facility personnel will walk the perimeter of the facility during the morning to check for potential odor issues. The morning event will typically be completed within two hours of sunrise. This is because as the day progresses, rising temperatures create erratic wind shifts and increased wind velocity. The early morning monitoring creates a worst-case bias. Winds are relatively calm and the heavier chemical constituents have settled to the ground causing the highest potential for odor detection.

##### 4.2 Complaint Response Protocol

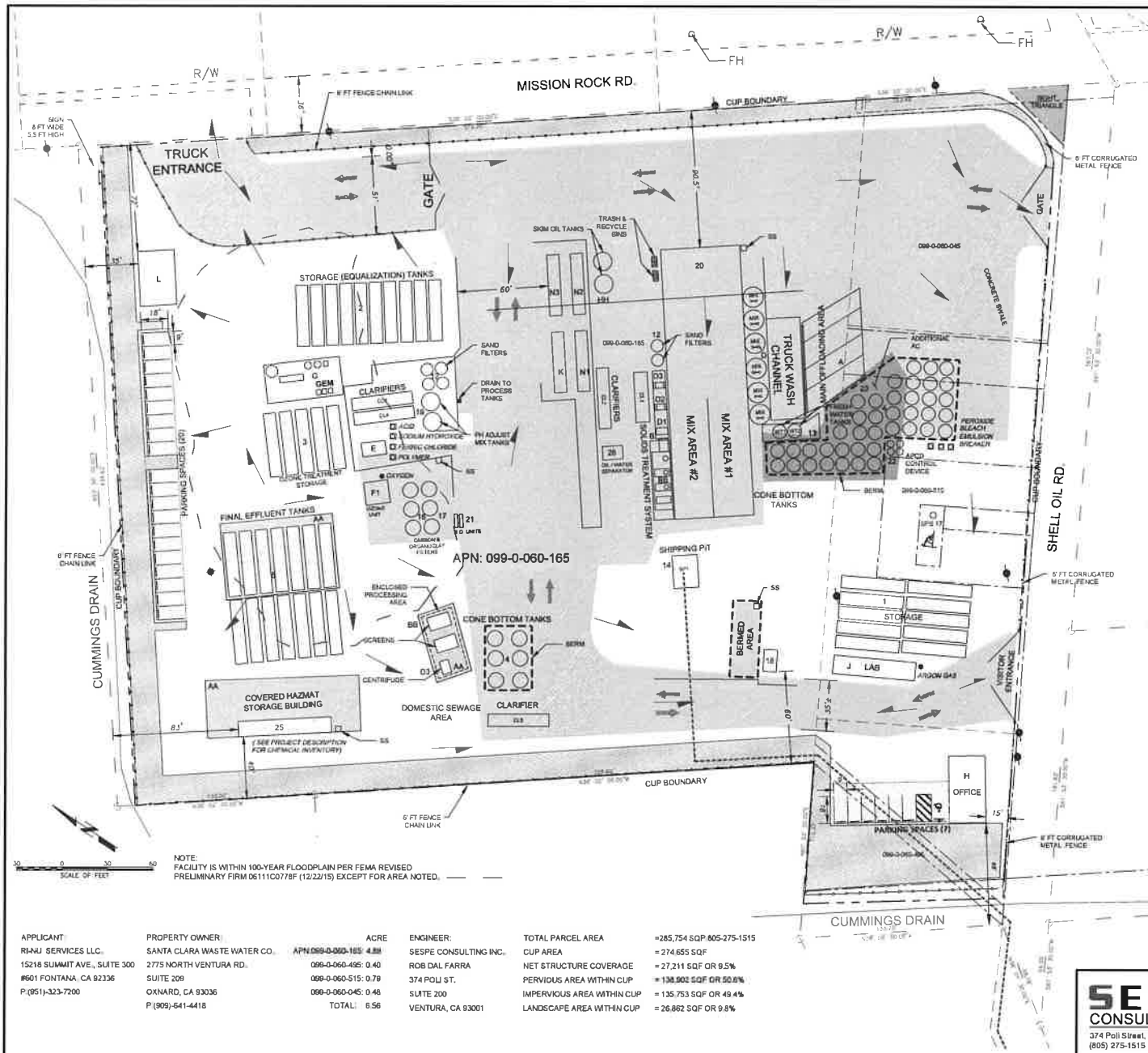
Complaints may be received by either the Facility, the VCAPCD or other local government agency. The Facility operator will document odor complaints using the Odor Complaint Log found in Appendix 2. The

following protocol will be followed to ensure odor complaints are received, investigated and addressed in a timely manner.

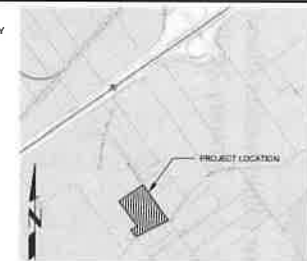
- The operator receives and reviews the complaint. The operator documents complaints in the site operations log and on the attached odor complaint form.
- The operator will go to the location of the complaint to assess if the Facility may be responsible for the odor.
- If the facility operations are responsible for the odor issues, the operator will implement appropriate measure to mitigate the odor source (e.g. cover piles, wash down areas, etc.).
- The operator and complainant (if known and choosing to participate) shall meet within a reasonable period to assess the original problem and results from implementing the odor mitigation measures.
- Actions and results will be documented in the Odor Complaint Log which serves as the operation's permanent record.

## **APPENDIX 1**

### **Figures**



NCZO ZONE: M3 10,000 SQ. FT.  
GENERAL PLAN: EXISTING COMMUNITY



<b>APPLICANT</b> RHNU SERVICES LLC. 15216 SUMMIT AVE., SUITE 300 #601 FONTANA, CA 92336 P:(951)-323-7200	<b>PROPERTY OWNER</b> SANTA CLARA WASTE WATER CO. 2775 NORTH VENTURA RD. SUITE 209 OXNARD, CA 93036 P:(909)-641-4418	<b>ACRE</b> APN 099-0-060-165: 4.88 099-0-060-045: 0.40 099-0-060-015: 0.79 099-0-060-045: 0.46 <b>TOTAL: 6.56</b>	<b>ENGINEER:</b> SESPE CONSULTING INC. ROB DAL FARRA 374 POLI ST. SUITE 200 VENTURA, CA 93001	<b>TOTAL PARCEL AREA</b> CUP AREA NET STRUCTURE COVERAGE PERVIOUS AREA WITHIN CUP IMPERVIOUS AREA WITHIN CUP LANDSCAPE AREA WITHIN CUP = 285,754 SQ. MGS-275-1515 = 274,655 SQF = 27,211 SQF OR 9.5% = 138,902 SQF OR 50.6% = 135,753 SQF OR 49.4% = 26,862 SQF OR 9.8%
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**SESPE**  
CONSULTING, INC.  
374 Poli Street, Ste. 200 • Ventura, CA 93001  
(805) 275-1515 • www.sespeconsulting.com

PROJECT SITE ADDRESS: 815 MISSION ROCK RD, SANTA PAULA, CA

**RI-NU WASTE WATER  
TREATMENT FACILITY  
PROPOSED SITE PLAN**

DATE: 10/1/2018	FIGURE NUMBER: 1
BY: [Signature]	
CHECKED BY: [Signature]	
DATE: 10/1/2018	

## **APPENDIX 2**

### **ODOR COMPLAINT LOG**

**ODOR COMPLAINT LOG**

Received by: \_\_\_\_\_

Date Received: \_\_\_\_\_

COMPLAINANT	
<b>Name:</b>	
<b>Address:</b>	
<b>Contact Phone #:</b>	

ODOR DESCRIPTION					
<b>Date:</b>		<b>Time:</b>		<b>Odor duration:</b>	
<b>Location:</b>	<input type="checkbox"/> Verified as coming from Facility?				
<b>Odor Intensity:</b>	<input type="checkbox"/> Very faint <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Very strong				
<b>Description of Alleged Odor(s):</b>					

INSPECTION RESOLUTION/RESULTS	
<b>Actions taken by Operator:</b>	
<b>Follow-Up with Complainant (phone call, visit, etc.)</b>	

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# **OPERATIONS AND MAINTENANCE MANUAL**

**INDUSTRIAL WASTEWATER TREATMENT PLANT  
RI-NU Services LLC  
815 MISSION ROCK ROAD  
SANTA PAULA, CALIFORNIA 93060**

**EnSafe Project Number  
0888819300**

**Prepared by:**



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[www.ensafe.com](http://www.ensafe.com)**

**January 2017**

**County of Ventura  
Initial Study  
PL15-0106**

**Attachment 19 – January 2017 Ri-Nu  
Operations and Maintenance Manual**

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Appendix B	City of Oxnard Sewer Use Ordinance (Chapter 19 of the Oxnard City Code)
Appendix C	Process Flow Diagram
Appendix D	Facility Layout
Appendix E	Safety Data Sheets
Appendix F	Sample Daily Shift Log
Appendix G	Additional Forms



## **1.1 INTRODUCTION**

### **1.2 Manual User Guide**

This Operations and Maintenance Manual (O&M Manual) is intended to meet, in part, regulatory requirements promulgated by the United States Environmental Protection Agency at Title 40 Code of Federal Regulations (CFR) 437 for The Centralized Waste Treatment Point Source Category, Subpart D — Multiple Wastestream, for RI-NU Services LLC's (RI-NU) industrial wastewater pretreatment system located at 815 Mission Rock Road in Santa Paula, California. Specifically, this document is developed and must be maintained onsite to meet the requirements for Onsite Compliance Paperwork as defined at 40CFR437.41(b), in support of initial and periodic certification statements for pretreatment. This O&M manual has thus been prepared to describe and document the procedures to be followed to ensure that the pretreatment systems are well operated and maintained, and where applicable why these adopted procedures ensure compliance.

Successful facility operation also implies compliance with the conditions of a permit for discharge granted by the City of Oxnard Department of Public Works, Water Resources Division Wastewater Section, attached as Appendix A.

This O&M Manual is intended to provide guidance for wastewater technicians operating the pretreatment system and to be a training tool for all employees at the facility. This O&M Manual is a dynamic document, which will be updated as necessary to reflect any future changes to the system layout, operations, or other changes at the facility. This O&M manual includes a process description, general guidelines for process operations, sampling and testing, personnel responsibilities, record keeping, system maintenance, and emergency operation.

The information contained in this manual is intended to provide an overview of O&M. Where equipment-specific data or information is required for specific operational or maintenance tasks, the technician or maintenance personal should refer to specific procedures and the equipment manufacturer's literature. These manuals, when used in conjunction with recommended maintenance schedules, can form the basis of a preventive maintenance program, which can result in reduced plant down time.

In preparing this manual, it is impractical to describe every potential operating condition, maintenance requirement, or problem which may occur within the facility. Operators and maintenance personal are encouraged to use this manual as a guide in tandem with sound judgment, experience, and testing to assure that treated effluent that is in compliance with the terms and conditions of the Oxnard Department of Public Works Discharge Permit and the Oxnard Municipal Sewer Use Ordinance.

### **1.3 General Description**

The RI-NU industrial wastewater treatment plant, located in Santa Paula, California, operates as a centralized waste treatment (CWT) facility, and receives wastes from numerous industries and activities. As received, these wastewaters may contain pollutants, in particular metals, oils, suspended solids, and organics, which require treatment and removal prior to discharge into the conveyance line connected to the Oxnard municipal sewer system. Wastewater sources potentially treated at this facility include (but are not limited to) coolants or metal working fluids, oil field production water, boiler blowdown water, equipment wash waters, landfill leachates, and industrial rinse waters.

RI-NU is not a direct wastewater discharger (i.e., it does not discharge to a public waterway), but is considered to be an indirect discharger, or pre-treater, which discharges treated wastewater to the City of Oxnard's Municipal Wastewater System. The City of Oxnard manages the local sewer system and treatment plant designed to collect and treat domestic, commercial, and certain industrial wastewater within its service area.

A process and instrumentation diagram for the system is provided in Appendix C, with a facility diagram showing equipment layout provided in Appendix D. These figures will be updated accordingly as modifications are made to the facility.

### **1.4 Discharge Standards**

Oxnard Department of Public Works (ODPW) is the local control authority and enforces the discharge regulations applicable to the RI-NU facility. The discharge from the RI-NU facility is regulated by ODPW at the point where RI-NU discharges the treated wastewater into a dedicated conveyance line connected to the sanitary sewer system. As a CWT facility, RI-NU is subject to national categorical standards (40 CFR 437, which apply to RI-NU's Subpart D (multiple waste subcategory) permit. In addition, ODPW establishes local limits to control discharges from industrial users. The limits are established to protect the sewage conveyance system, water quality of the POTW's receiving stream, the quality of the bio-solids or reusable sludge produced by the POTW, and the operation of the municipal treatment plant. In RI-NU's permit, the more stringent of the local or categorical limits applies for each regulated parameter.

RI-NU has one point where process wastewater is discharged to the sanitary sewer system. ODPW requires that the terms and conditions of the Permit be met at this discharge point, which is a storage area below ground surface designated as the "shipping pit." Before reaching the shipping pit, there is a sample port that the operator or chemist can access to test for compliance or visually inspect the treated effluent.



In addition to these numerical limits, the Permit states types of discharges that are strictly prohibited from introduction into the sanitary sewer, due to the possible interference or inability to be treated at the POTW. Please refer to the Permit in Appendix A for further discussion of these prohibited discharges. The operator should be familiar with the prohibited discharges.

### **1.5 Industrial Wastewater Treatment System**

The industrial wastewater treatment system at the RI-NU facility consists of a chemical precipitation system designed to treat metal-bearing wastewaters, an organics removal system, and an oily water and solids separation system.

The system consists of typical unit processes: wastewater segregation, wastewater storage, solids separation (including a shaker, centrifuge, and clarifiers), metal precipitation (including coagulation, flocculation, settling, and sand filtration), emulsion breaking, oil-water separation, chemical oxidation, advanced dissolved air flotation (via a gas-energy mixing [GEM] system), bag filtration, organo-clay adsorption, and granular activated carbon adsorption. Solids removed from the wastewater process are dewatered via a centrifuge, and the sludge is bulked and solidified as needed before shipping offsite for disposal at a licensed facility. Characterization of wastes sent offsite for disposal is conducted in accordance with the facility's Waste Analysis Plan (WAP).

In a physical/chemical treatment plant, the removal of contaminants requires the addition of various treatment chemicals that perform different functions within the individual treatment processes. The primary treatment chemicals added to the system include the following:

- Sulfuric acid
- Sodium hydroxide solution
- Ferric chloride
- Aluminum sulfate
- Pure-Flo 829 (flocculant polymer)
- GFT 4963 (oil treatment polymer)
- Hydrogen peroxide (chemical oxidizing agent)
- Sodium hypochlorite
- Ozone

The liquid chemicals are stored in drums or totes on spill containment pallets within the hazardous materials storage building for the purposes of chemical segregation and spill containment. Chemical tanks that are actively being used as part of the treatment system are re-filled as needed by



transferring material from the storage building's drums/totes to the active tank(s) using appropriate pumps/hosing. Once transferring is complete, all drums/totes that were removed from the storage building are transferred back into the storage building. The polymers may be obtained in the solid form, in which case dilute solutions are prepared onsite, and then stored in the respective storage tank or container. Polymer delivered in the liquid form will be stored in its provided container. Ozone is generated on-site using an ozone generator. The ozone is then injected into the treatment system. Safety data sheets for these chemicals are presented in Appendix E.



## **2.1 INFLUENT WASTEWATER EVALUATION AND ACCEPTANCE**

### **2.2 Wastewater Sources**

The treatment system receives flows from various industrial clients which vary from day to day. During the profile development process, clients are required to provide information regarding the wastewater, including laboratory analytical test results, to determine whether or not the wastewater can be accepted by the facility. Wastewater must not contain chemicals prohibited from discharge, or properties that categorize the wastewater as Resource Conservation and Recovery Act (RCRA) or non-RCRA hazardous waste (California hazardous). While the facility maintains a Waste Analysis Plan (WAP) that covers acceptance criteria and characterization of waste generated on site, a summary of waste acceptance procedures is provided below.

California hazardous waste is regulated under Code of California Regulations Title 22, Division 4.5, Chapter 10 — Hazardous Waste System Management and Chapter 11 - Identification and Listing of Hazardous Waste (Title 22). The regulation provides the guidelines for determining if a waste is RCRA hazardous or California hazardous. The first step is determining if the wastewater is a RCRA-hazardous waste by the following steps:

- Determine if the wastewater exhibits one of the RCRA-hazardous waste characteristics
  - Ignitability (D001) if the flash point is  $<140^{\circ}$  Fahrenheit
  - Corrosivity (D002) if the pH is  $\leq 2$  or  $\geq 12.5$
  - Reactivity (D003)
  - Toxicity (D004 through D043) is determined by comparing the constituent concentrations in the analytical report to the regulatory levels that are presented in 22 CCR §66261.24. If the concentrations exceed the regulatory levels, the wastewater is a RCRA hazardous waste.
- Determine if the wastewater is a listed waste as defined by 22 CCR §66261.31 through §66261.33(f). Listed wastes include the following:
  - Wastewater from non-specific sources (F-Listed)
  - Wastewater from specific sources (K-Listed)
  - Discarded unused products including acutely hazardous (P-Listed) and toxic (U-Listed).

If the wastewater does not meet the definition of a RCRA-hazardous waste, then the following steps will be completed to determine if the wastewater meets the definition of a non-RCRA hazardous waste:

- Determine if the wastewater exhibits a non-RCRA corrosivity or toxicity characteristic.

- Determine if the wastewater is on the M List
- Determine if the wastewater is found on or contains substances listed in Appendix X of Title 22.

If the wastewater is determined to be a non-hazardous waste, then it is acceptable for treatment at the facility. RCRA and non-RCRA hazardous wastes will not be accepted into the facility.

Some wastewaters that violate the hazardous waste characteristics above may be exempt from being labelled as hazardous under the Title 40 Code of Federal Regulations (40 CFR). The full list of exemptions is given in 40 CFR, Section 261.4. Oilfield exploration and production (E&P) exempt wastes are discussed in detail in the facility's WAP.

The facility has developed a program to bench test all wastes prior to acceptance to determine if the waste is treatable. Prior to acceptance of wastewaters, operators request a sample of wastewater with characterization data to perform bench scale treatability tests. Once a waste has been accepted by the facility via the profiling process, it can be scheduled for delivery to the facility.

The facility will be processing wastewaters which contain industrial metal-bearing wastes, oily wastes, and organic-bearing wastes. Wastewaters are unloaded by gravity from tanker trucks into distribution pipes before being pumped to holding tanks that are connected to the treatment process.

### **2.3 Influent Characteristics and Chemistry of Treatment**

Influent wastewater characteristics vary day to day depending on client waste delivery. All wastewater streams will come with waste manifests, be inspected and tested by the operator, and evaluated on the bench to determine whether the process can successfully treat them prior to accepting and/or treating the waste.

Influent wastewater may be characteristic of one or more of three categories: metals-containing wastewater (Type A), organics-containing wastewater (Type C), oily wastewater (Type B). Wastes will be classified as one of the three CWT waste types in accordance with the CWT Small Entity Compliance Guide. It should be noted that the classification of the waste as one of the three CWT waste types does not solely dictate the treatment performed on that waste stream. For example, a Type C waste with metals concentrations above discharge limits will require metals treatment. The onsite chemist will determine the treatment needs of influent wastewater based on discharge limits. Note that some incoming wastes will have concentrations of metals, organics, and oils that are below discharge limits; however, these wastes must still be classified as one of the above waste types.

The treatment of different waste streams requires drastically different chemistries to meet the desired effluent limits. It is essential for the staff chemist to fully understand the chemistry of treatment for all waste streams to properly perform bench scale testing, so that treatment can be optimized in the full-scale system.

### **2.3.1 Treatment Chemistry for Metals-containing Wastewater**

The primary mechanism for the removal of metals is through hydroxide precipitation. In the precipitation step, the pH is raised with sodium hydroxide (caustic) to a value necessary for effective precipitation of metals in the wastewater. Precipitation is the chemical process of converting the soluble dissolved metals into an insoluble solid form as a metal hydroxide so that they can be physically removed from the wastewater. Different metals and different solutions will have different ideal pH values for the precipitation of a metal hydroxide; therefore, it is essential that the staff chemist determine this ideal pH prior to treatment.

Some metals cannot be sufficiently removed simply by application of hydroxide precipitation because of complexing or chelation. It is important for the chemist to understand the principles of metals precipitation and its limitations, and presence or absence of chemical constituents that may complicate metals removal.

For some wastewaters, coagulation is used to further enhance metals removal in addition to hydroxide precipitation. Coagulation is the process by which a coagulant is added to the wastewater to destabilize metal solids (floc) that are in suspension. This condition makes the floc more readily stick together, which increases the speed at which the solids settle out of the solution.

Regardless of the use of coagulation in conjunction to metal hydroxide precipitation, flocculation is needed to help metal particles settle. Flocculation is the process in which a flocculant polymer, forms "chains" or "strands" that adsorb to the particles, in effect "bridging" them together to grow larger, heavier particles that settle faster. The polymeric flocculant can also assist with coagulation by neutralizing the charge on the metal particles.

The polymer and wastewater are blended so that the polymer coats and binds to the small precipitated metal particles. The coated particles gently collide and agglomerate (i.e., stick together) to form larger particles. Once metals are allowed to precipitate and agglomerate, floc is allowed to settle by gravity in a clarifier. Additionally, solids can be further removed in the GEM system through use of dissolved air flotation. In the GEM system, air and flocculant chemicals are injected into a high-pressure (100-120 psi) waste stream. The dissolved air forms small bubbles on discharge to a chamber fitted

with surface skimmers that cause neutrally buoyant floc, and oils and greases if present to rise to the top and be skimmed from the water.

### **2.3.2 Treatment Chemistry for Organics-Containing Wastewater**

The primary means of organics treatment at this facility will be through the use of chemical oxidation and activated carbon adsorption. If a wastewater stream is determined to require pre-treatment prior to carbon adsorption, chemical oxidation will occur. Chemical oxidation is the process in which constituents are broken down (usually into less harmful byproducts) through chemical reactions. Chemical oxidation will be used to support the treatment of organics by activated carbon. Chemical oxidants at the RI-NU facility, which include hydrogen peroxide and ozone, will be dosed to degrade higher strength wastes or in some cases larger more recalcitrant compounds, so they are more easily removed by carbon, as needed. The chemist may also determine to dose a waste stream with an oxidant to reduce odor or color. Ozone is a strong oxidizer that is generated on site and injected into the process stream with inline mixing to provide thorough contact and effective oxidation.

Organic containing wastewaters are then treated by being pumped through bag filters to prevent fouling of downstream media, then a column of granular activated carbon (GAC). It is important for the GAC adsorption step to occur after ozonation for the purpose of destroying residual ozone, removing ozonation by-products, and preventing bacterial growth on the media. Both liquid and gas phase organic contaminants can adsorb to the activated carbon, thus trapping it in the column. This process is dictated by the properties of the carbon, the contaminants being targeted, the concentration of the contaminants, and the temperature of the water. When there is suspected oil and grease content in a wastestream, the operators can route the wastewater through the GEM and as needed, the organo-clay media as pretreatment to remove oil and grease and extend the capacity of the GAC columns for dissolved organic compounds.

In any case, care must be taken to ensure that the GAC columns are not fully saturated, or otherwise expended to the extent that contaminants are released back into the wastewater stream at concentrations approaching pretreatment standards. For this purpose, the facility is equipped with vessels that can be operated in a lead/lag configuration, with individual vessels switched as saturation is observed on the first vessel. This setup provides a safeguard to assure compliance with the sewer discharge criteria.

### **2.3.3 Treatment Chemistry for Oily Wastewater**

The primary method used to separate oil from water is by gravity separation. Absent the presence of surfactants or other dispersant chemicals, oil and water are naturally insoluble, so given time; oil will

separate from the water. In the instance that oil and water are emulsified, and prevented from separating, it is the responsibility of the staff chemist to determine a means of breaking the emulsion. The majority of emulsions expected at this facility will likely be in the form of surfactants. A surfactant has a hydrophobic end that has an affinity for oil, and a hydrophilic end that has an affinity for water, which allows for emulsions to stabilize. The treatment of emulsified oil requires the destabilization of the emulsion, usually by altering the surfactant. Surfactants may be destabilized by finding a pH in which the surfactant is denatured, or it may be possible to utilize polymer, ferric chloride, or alum to preferentially bind to surfactants.

Oily water that is not emulsified (or water that after the emulsion has been broken is drained from the tanks used for emulsion breaking) is pumped through an oil/water separator. Oil accumulates on the surface of the separator and drains to a collection tank. The aqueous phase or water is conveyed for further metals or organics treatment as needed.

Because there is the possibility for dissolved organics and or finely divided oil droplets in this treated wastewater, it can be treated further by processing through the GEM unit, and/or through bag filters to remove solids and protect downstream media, and the organo-clay media to trap any additional traces of immiscible oil, followed by granular activated carbon polishing.

## **2.4 Wastewater Evaluation**

Prior to accepting any wastewater or obtaining samples to test on the bench, the waste profile and analytical data must be evaluated to confirm the wastewater meets the requirements for acceptance to the facility. Waste acceptance criteria are discussed in detail in the facility's WAP. If the profile and analytical data indicate the wastewater is acceptable, a sample will be obtained to evaluate for treatability and necessary chemical dosing. This will ensure that the treatment process will be able to effectively remove contaminants of concern without leading to permit violations. The wastewater evaluation process is as follows:

- After profile and analytical data from a California-certified laboratory are reviewed and approved by RI-NU, sample wastewater and evaluate whether treatment is feasible based on source.
- Evaluate sample by visual inspection, scent, and physical characteristics.
- If the wastewater is deemed to be acceptable, determine whether waste needs to be treated for oils, organics, metals, or a combination of these. Evaluate initial concentrations of contaminants of concern by measuring (depending on waste type) metal concentrations on an

ICP, via supplied analytical results, via the HACH DR3900 spectrophotometer and associated test kits, or other suitable testing apparatuses. Test for flash point via flash point testing equipment, if deemed necessary. Oil and grease can be estimated by supplied analytical results and visual inspection.

- If the initial untreated concentration of the sample is below the discharge requirement, no further bench testing will be necessary; the wastewater falls below discharge requirements.
- For wastewater that requires treatment, perform bench scale treatability test as described in Section 2.4.
- Collect sample of supernatant from treatability test and confirm that treatment removed the contaminant of concern and the sample meets the Permit discharge standards. This is primarily for metals as the GAC system will not treat for dissolved metals. Water with residual oil that is not removed in the oil-water separator will be run through the organo-clay vessels to decrease oil and grease concentrations below discharge requirements and to protect the adsorption capacity of GAC media. The waste will then be run through the GAC system to remove remaining organic contaminants before discharge.
- If testing determines that the wastewater meets the Permit requirements, the operator can allow the delivery of wastewater via tanker trucks. The tanker truck is to gravity drain wastewater into the designated discharge pipe network. The discharge pipes are labelled based on the waste type (Type A, B, or C). Once discharge is complete, the wastewater will be pumped to the designated holding tank and subsequently into the treatment system.
- Following the delivery of wastewater to the facility, collect a sample of water from the truck to confirm metals concentration with onsite lab testing apparatuses. For any batches that do not appear consistent with the anticipated characteristics of the wastewater (physical characteristics, odor, metals concentration, etc.), a sample will be collected and the bench scale treatability test as described in Section 2.4 will be repeated to confirm the applicability of the treatment processes and dosing of that load.

## **2.5 Bench Scale Testing**

Bench scale tests of wastewater will allow operators to determine dosing and estimate necessary treatment steps for wastewater in the process tanks. During all tests, record all starting volumes of

wastewater, chemical dosages, contact times, and settling times. These will be utilized in the operation of batch treatment.

### 2.5.1 Metals-containing Wastewater

The following steps will be conducted for bench scale testing of metals-containing wastewater:

- In a beaker, mix sample and observe pH; depending on source water (basing on operator experience), adjust pH up or down using caustic soda or sulfuric acid. Target pH will depend on the metal being targeted for removal.
  - Different metal hydroxides precipitate at different pH values. See Table 1 for a list of approximate target pH values for metal removal by precipitation. Use the table to set target precipitation points.
  - The operator will need to select the necessary treatment pH based on metals needing treatment in wastewater sample.
- Dose a coagulant (ferric chloride or aluminum sulfate) until visible solids form, coagulant will be selected based on chemist and operator expertise. Allow sample to mix. If addition of ferric chloride or aluminum sulfate drops the pH below the ideal precipitation pH, adjust the pH accordingly.
- Dose the polymer blend to grow floc.
- Terminate mixing to allow solids to settle.
- Evaluate the supernatant.

<b>Table 1 Approximate pH Values for Metals Precipitation</b>	
<b>Metal</b>	<b>pH for precipitation</b>
Cadmium	11.5
Chromium (III)	9
Copper	10.5
Lead	10
Nickel	10.5
Zinc	9.5

## **2.5.2 Organics-containing Wastewater**

Prior to bench testing or treating any organics-containing wastewater, the chemist must determine whether or not the organics-containing wastewater requires any chemical treatment in addition to granular activated carbon. Wastewaters that need chemical treatment are any organic bearing water that may contain metals, or organics that more rapidly exhaust carbon. Chemist experience will be necessary to determine which wastewaters will require treatment.

### **2.5.2.1 Organics Requiring Chemical Treatment**

In a beaker, mix sample and test pH level; depending on source water (basing on operator experience), adjust pH up or down using caustic soda or sulfuric acid. Target pH will depend on the treatment goal of the wastewater. Once the target pH level has been reached conduct the following:

- For wastewater that contains metals refer to section 2.4.1 and follow the metals precipitation guidelines to remove the metal(s) of concern.
- For wastewater that contains compounds known to rapidly exhaust carbon, or are difficult to remove by carbon, it may be prudent to chemically oxidize the wastewater.

Based on the chemist's discretion, add the chemical oxidant at the desired treatment dose. Allow the wastewater to mix and react for 15-30 minutes, or longer for particularly recalcitrant compounds.

### **2.5.2.2 Organics Treatment**

In a beaker, mix sample and test pH level. Depending on source water (based on operator experience), adjust pH up or down using caustic soda or sulfuric acid to neutral ranges. Once the target pH level has been reached conduct the following:

- Once pH is at neutral range, mix in a small volume of activated carbon, and allow the sample to mix for a few minutes.
- Allow the carbon to settle after mixing and once settled, place a sample of the supernatant into three, 40 mL volatile organic analysis (VOA) glass tubes. Send the sample to a certified lab for analysis of volatile organic compounds or additional organic tests depending on the organic contaminants of concern. Additionally, if the chemist determines that the on-site organics treatment, which includes chemical oxidation and GAC adsorption, is known to remove the contaminants of concern, bench scale testing of the organics treatment may be waived in favor of using the known removal efficiency of the GAC system for specific chemicals to determine suitable treatment.

- If the organic constituent concentrations have been decreased by acceptable amounts as determined by the certified lab analysis and chemist, the wastewater will be deemed treatable. If the organic constituent concentrations are still too high, treat the wastewater sample as described in 3.2.1.1 until a combination of oxidation and carbon treatment is found that is successful.

### **2.5.3 Oily Wastewater**

In a small container, invert the oily wastewater sample a few times and allow the sample to sit for a few minutes. Visually assess the sample for a visible separation of oil and water and then conduct the following steps:

- If there is clear separation of the oil from the water, and there is no reason to suspect emulsions, or the need to remove metals or other contaminants from the sample, the oily sample is acceptable.
- If there is no separation, or poor/slow separation, it can be assumed that there are emulsions keeping the oil suspended and the following steps will be conducted:
  - Take a sample of the oily wastewater and add it to a beaker. To attempt to break the emulsion there are multiple options the chemist can attempt:
    - Adjust the pH; depending on the emulsion pH may need to be adjusted up or down. This can destabilize the emulsion and help achieve better separation.
    - The addition of the appropriate polymer can act to agglomerate oil particles, allowing them to separate out from the water.
    - Attempt addition of other available water treatment chemicals to preferentially sorb to surfactants that may be stabilizing the emulsion.
  - Once a method is found to separate oil from the water, the wastewater can be deemed acceptable for treatment.
- If the oily wastewater is known to contain metals as well as oil, and requires additional treatment, once separation is achieved, remove the top layer of oil and proceed to the bench testing procedure described for metals in 2.4.1.

**2.5.4 Wastewater Meeting Effluent Limits**

For wastewaters that arrive at the facility that fall under the classification of a wastewater for a centralized waste facility, but are also received below the effluent guidelines for the facility, the wastewater will be further evaluated upon arrival at the facility. Wastewaters are nevertheless screened for organics content, metals, and visually for oils before deciding on appropriate treatment, if any.

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### **3.1 DESCRIPTION AND GENERAL OPERATION OF TREATMENT SYSTEM**

The following discussion is intended to provide the operator functional information regarding the unit processes within the treatment system. Once a wastewater stream has been accepted, categorized, and tested for treatability by the chemist, refer to the section or sections that apply to treatment of that wastewater stream.

### **3.2 Common Treatment Procedures**

Certain system processes and equipment will be operated the same regardless of the wastewater stream being processed. These processes are described in the following sections.

#### **3.2.1 Pre-Startup Activities**

Startup of the system and equipment should only occur after preliminary inspections have been conducted, followed by pre-startup procedures:

- The operator will verify that chemical storage tanks and totes contain adequate volumes of the required chemicals, and that polymer solutions are available.
- The operator will review records from the last operational shift to determine the status of the system and any operational issues.
- The operator or chemist will verify the calibration of the pH probes or other lab equipment prior to any bench-scale or batch treatments processes begin.

#### **3.2.2 Chemical Feed**

Process chemicals will be dosed directly from separate chemical day tanks, and may need preparation before they can be fed into process tanks. These processes are described below.

##### **3.2.2.1 Chemical Preparation**

Chemical preparation at the facility is minimal, as acid and base are dosed as received from the supplier, and treatment chemicals will be diluted in storage tanks to the desired concentration. Each day, during pre-startup inspections, the operator will evaluate that the chemical dosing tanks have an adequate volume of chemical to treat the day's wastewater.

The polymer solution may require preparation if it arrives in powder form. The technician will add the required mass of solid powder to the desired volume of water in the chemical dosing tank. The polymer solution may be a proprietary blend; see the manufacturer's specifications for the specific ratio

of water to powder. Polymer solutions should be added to the process from tanks or containers that are continually mixed with a low shear mixer to keep in condition for accurate dosing and effectiveness.

#### **3.2.2.2 Chemical Process Control**

The liquid chemical addition system onsite uses variable speed, electric metering pumps. The operator must manually turn the appropriate metering pump on at the appropriate flow rate and for the appropriate amount of time as determined by the bench-scale testing.

For chemical additions that will be determined by pH, the operator will lower a pH probe into the tank if there is no pH probe currently in the tank. The operator will then meter in sulfuric acid or sodium hydroxide until the appropriate pH is obtained as determined by discharge limits and bench-scale testing.

#### **3.2.3 Transfer Pumping**

Wastewater is gravity drained into the designated discharge pipe network and then pumped into the holding tanks via the use of a centrifugal pump. Operating sequences for the most common transfers are described in the following sections.

##### **3.2.3.1 Transfer from Unloading Tanks to Holding Tanks**

The operator will decide into which holding tank wastewater will be delivered based on the wastewater's classification type. The tanker trucks will be connected to the appropriate discharge pipe network via a cam-lock connection. The operator will align valves such that the wastewater flows to the appropriate tank without mixing waste types or dissimilar loads. Transfers should be attended continuously while pump are in operation and receiving tank levels observed to prevent overfill or running the pump dry. Multiple tanks may be filled simultaneously, also with constant operator attention.

Exterior storage tanks will be used in the designated storage area (see Appendix D) as needed and water will be transferred to the appropriate storage tanks via hosing and pumps or via vacuum trucks.

##### **3.2.3.2 Transfer of Solids from Process Tanks to Solids Storage**

Solids will be produced from four on-site treatment processes, which include a shaker unit, the GEM system, and centrifuges and clarifiers throughout the treatment system. The shaker unit removes solids through the use of a vibrating, porous conveyor belt. As solids-containing wastewater is pumped through the shaker unit, the solids are conveyed to a solids storage container. The centrifuges are operated at a frequency based on operator experience and the operations manual of the centrifuges.

The solids that separate in the centrifuge are conveyed via auger to a solids storage container, or directly transferred to the solidification pit.

Other solids-bearing wastewater will be pumped through designated clarifiers. Solids will accumulate at the bottom of the clarifier, and be removed, either by a dedicated sludge pump or an auger system within the clarifier. The sludge will be pumped to a solids storage container or processed through the shaker or centrifuge depending on solids content, at the operators' discretion.

The RI-NU facility is equipped with a solidification area. Solids from the solids storage containers can be transferred to this area. The operator will add clean soil, mulch, or another suitable absorbent material to ensure that there is no standing water in the solids pile. After the solidification process is complete, the solids can be disposed of off-site at an appropriate landfill.

#### **3.2.3.3 Transfer from Solids Separation Back to Process Tanks**

Following the dewatering of sludge, return the remaining water into the process tank for any necessary treatment prior to discharge. The process return water will be treated as an influent wastewater stream.

#### **3.2.4 Solids Separation**

Solids collected from process tanks are pumped from the bottom of the tanks into the sludge dewatering tanks. The sludge dewatering tanks are equipped with multiple drain ports along the entire length of the tank, so that as additional compaction of the sludge occurs in the tank, supernatant fluid can be drawn off at a point above the sludge to aid in dewatering.

#### **3.2.5 Neutralization**

Treated water from all waste streams that falls outside of the allowable pH discharge limits will be routed into a neutralization tank following the necessary pretreatment steps. The neutralization tank will be equipped with agitation so that pH adjustments can be made more efficiently.

#### **3.2.6 Filtration**

All wastewaters that are treated onsite, will proceed through a series of filters prior to discharge. After clarification, the water will be processed through a sand filter. After the pH of wastewater is neutralized, water is transferred through holding tanks at the GEM system (allowing for solids settling) and through bag filters to remove any fines remaining in the water, before passing through organo-clay media for oil removal (as needed), and activated carbon for organics removal.

### **3.2.7 Sample Tank to Discharge**

Wastewater will automatically flow into an accessible top sample tank after filtration that overflows to the shipping pit.

## **3.3 Unit Operations for Metals Precipitation**

For all wastewaters that have been evaluated and found to be able to be processed in the full-scale system for metals removal, the operator will follow the treatment operations as described below.

### **3.3.1 Influent Routing**

Wastewater which is characteristically only metals bearing is unloaded from trucks pumped directly to storage or process tanks for subsequent metals precipitation. If a waste is a mixture of solids or oily phase materials, pretreatment is needed as described below.

### **3.3.2 Treatment**

All wastewater is to be treated as batches, meaning that water will be pumped into a process tank and then chemicals will be dosed so that, precipitation, flocculation, and clarification can occur in the tank. The operator will dose chemicals based on scaled up dosages determined during bench scale testing.

#### **3.3.2.1 Hydroxide Precipitation**

Caustic is metered into the process to achieve the target pH provided by the chemist, as determined during bench scale testing.

For the neutralization process to be effective the pH within the tank must be measured accurately. Accurate control can only be achieved if the pH probe is calibrated properly. It is **STRONGLY RECOMMENDED** that the calibration of the pH probe in this process be verified on a **DAILY BASIS** and re-calibrated if necessary. The pH probe will be dual-point calibrated using 7.0 and 10.0 standard unit solution. Samples will be drawn off during batch treatment from the process tanks to ensure that pH is in optimal treatment ranges prior to proceeding to subsequent steps.

#### **3.3.2.2 Coagulation and Flocculation**

The coagulation and flocculation occurs in the same process tank and occurs in conjunction with metal hydroxide precipitation. Depending on operator experience and bench scale testing either ferric chloride or aluminum sulfate will be added to wastewater as a coagulant. Following the addition of coagulant, flocculant polymer is added to the process tank. The polymer is purchased in dry form. The operators prepare batches of solution polymer by mixing the dry polymer with tap water in tanks equipped with mixers. Proper control of this process requires accurate dosing of the polymer solution.

**Overdosing** causes the condition described as “pin-floc,” where the water appears hazy or cloudy and very small particles are present. During overdosing, the small, neutrally buoyant particles have essentially adsorbed too much polymer and the particles are electrically repelling each other. This will result in high metal concentrations in the settler effluent, likely above the discharge limits. Subject to confirmation by the chemist, treatment may be improved in such a batch by processing through the GEM system.

**Underdosing** results in inadequate flocculation, leading to increased turbidity in the settler effluent. Underdosing is best verified by visually observing the characteristics of the floc formed in the flocculation tank. During underdosing, the floc will not form properly and the water will appear similar in color and clarity to the water in the neutralization tank.

**Underdosing can also be caused by inadequate coagulation due to improper coagulant dosage or due to a high loading of negatively charged materials in the system (alkaline cleaner, oil and grease, etc.).** If this condition is observed, the operator should first determine if the coagulants are being added in the proper amounts prior to adjusting the polymer dosage.

Because the dosage of polymer is critical, preparation of a consistent batch of polymer solution from the concentrated emulsion and water is critical. The operators must prepare a consistent batch of flocculant polymer every time a batch is prepared.

### **3.3.2.3 Settling**

Precipitated, agglomerated, and flocculated metal solids settle out of the wastewater in this process by gravity. The settled solids are collected in the cone at the bottom of the process tank, or through separation via a clarifier. The waste metal solids concentrated at the bottom of the tank or clarifier (termed “sludge”) are to be pumped to the centrifuge for solids separation. Clarified, treated wastewater effluent that should contain a minimal quantity of residual metal solids remains in the tank for subsequent discharge.

Sludge removal from a process tank is controlled by operator observation; the operator must visually monitor the characteristics of material that is being removed from the batch tank. For example, if a significant amount of the liquid appears to be clear water, the operator should discontinue pumping sludge. The operator should attempt to balance the pumping such that the sludge is removed during each process, while removing the minimal amount of treated effluent.

The settled effluent should be routinely monitored by the operator for clarity during their shift.

### **3.2.3 Batch Discharge**

Following treatment of the metals wastewater and solids are separated from the treated water, the treated water will be sent through the remaining treatment processes (Sections 3.1.5, 3.1.6, and 3.1.7). Water will travel through filtration and carbon before ultimately traveling through the sampling tank and into the shipping pit.

Compliance forms maintained at the facility will be used during treatment and batch discharge and will record, at a minimum, the treatment tanks/processes utilized, the type of CWT waste being treated, identification of the source (name of generator and origin process of waste), profile number, manifest number(s), expected pollutants and concentrations requiring treatment, the treated pollutants with pre- and post-concentrations, the treatment methodologies utilized, date and time of discharge, volume of wastewater treated and discharged, pH of discharged wastewater, and treatment/discharging operator(s).

## **3.3 Unit Operations for Organics Treatment**

For all wastewaters that have been evaluated and found to be able to be processed in the full-scale system for organics removal, the operator will follow the treatment operations as described below.

### **3.3.1 Influent Routing**

Wastewater is first unloaded from trucks and pumped to appropriate storage or process tanks. Dissimilar batches must be kept separate for treatment through the process. If an organic waste stream also is high solids content such as oil field produced water, the receiving tank is mixed and the batch is first processed through the shaker/centrifuge system. If there is an oily phase the liquid (or liquid fraction) is first pumped through the oil/water separator before further processing.

### **3.3.2 Chemical Oxidation**

Wastewater with greater organic compound loading, or with compounds that are inefficiently treated by carbon will undergo chemical oxidation to adjust the treatment of organics. Chemical oxidant will be dosed as determined by the staff chemist for ideal removal performance. Oxidants will be fed by chemical feed pumps. Following the addition of chemical oxidants, the tank will be allowed to mix for an appropriate length of time to treat the organics as determined by the staff chemist.

### **3.3.3 Sorption**

Following chemical oxidation, water will be pumped into an unloading sump where it will be pH adjusted as necessary before undergoing filtration and treatment via activated carbon. Refer to Section 3.2 for wastewater that also contains metals and treat the wastewater as described, after performing

oxidation of organics.

### **3.3.4 Batch Discharge**

Following treatment by chemical oxidation, or any secondary treatment, wastewater will be sent through the remaining treatment processes of filtration and carbon for the last stages of organics treatment (Sections 3.1.5, 3.1.6, and 3.1.7). Wastewater will ultimately travel through the sampling tank and surge tank and into the sewer. Compliance forms maintained at the facility will be used during treatment and batch discharge and will record, at a minimum, the treatment tanks/processes utilized, the type of CWT waste being treated, identification of the source (name of generator and origin process of waste), profile number, manifest number(s), expected pollutants and concentrations requiring treatment, the treated pollutants with pre- and post-concentrations, the treatment methodologies utilized, date and time of discharge, volume of wastewater treated and discharged, pH of discharged wastewater, and treatment/discharging operator(s).

## **3.4 Unit Operations for Oily Wastewater**

For all wastewater that has been evaluated and found to be able to be processed in the full-scale system for oils removal, the operator will follow the treatment operations as described below.

### **3.4.1 Influent**

Wastewater is unloaded from trucks holding tanks. Prior to accepting wastewater into the treatment system, the staff chemist will need to evaluate the wastewater to determine if the oils are emulsified or not.

### **3.4.2 Treatment**

Immiscible oil/water mixtures treatment consists gravity separation, with gross separation possibly in a non-agitated tank (decanting) followed by pumping through the oil/water separator. This step applies to both oil/water mixtures as received, or emulsions treated as follows:

#### **3.4.2.1 Emulsified Oils**

In the instance that an oily wastewater is highly emulsified, and the oil will not separate out by gravity separation alone, the chemist will recommend to operators to treat the oily wastewater in the oil process tank. In this tank the operator can adjust pH as needed, or feed a variety of polymers or possibly salts, to break the emulsion and achieve phase separation. Any solids from the process can be removed from the bottom of the tank and pumped into sludge holding. Treated oily wastewater, once the emulsion is broken, will then proceed through separation and further processing.

#### **3.4.2.2 Non-emulsified Oils**

Wastewaters arriving onsite without emulsions, or wastewaters that have been treated to break emulsions are processed through the oil/water separator. Following the oil separation, wastewater will undergo filtration (clarification and sand filtration), and further processing as needed.

#### **3.4.3 Batch Discharge**

Following oil separation, wastewater will be sent through the remaining treatment processes of neutralization, filtration, and carbon (Sections 3.1.5, 3.1.6, and 3.1.7). After all the treatment steps, wastewater will ultimately travel through the sampling tank and into the shipping pit.

Compliance forms maintained at the facility will be used during treatment and batch discharge and will record, at a minimum, the treatment tanks/processes utilized, the type of CWT waste being treated, identification of the source (name of generator and origin process of waste), profile number, manifest number(s), expected pollutants and concentrations requiring treatment, the treated pollutants with pre- and post-concentrations, the treatment methodologies utilized, date and time of discharge, volume of wastewater treated and discharged, pH of discharged wastewater, and treatment/discharging operator(s).

### **3.5 Wastewaters Meeting Effluent Guidelines**

For all wastewaters that have been evaluated and found to be able to be processed in the full-scale system for metals removal, the operator will follow the treatment operations as described below.

#### **3.5.1 Influent**

Once wastewater is accepted to the facility (see Section 2.3), wastewater is unloaded from trucks to tanks dedicated to wastestreams not requiring treatment.

#### **3.5.2 Batch Evaluation and Discharge**

Upon receiving wastewater that is suspected of meeting effluent requirements, it will be for the chemist to confirm that wastewater matches its profile through screening analysis, as needed. Once wastewater is found to be acceptable, it can be pumped separately to the sample tank and shipping pit.

Compliance forms maintained at the facility will be used during treatment and batch discharge and will record, at a minimum, the treatment tanks/processes utilized, the type of CWT waste being treated, identification of the source (name of generator and origin process of waste), profile number, manifest number(s), expected pollutants and concentrations requiring treatment, the treated pollutants with pre-

and post-concentrations, the treatment methodologies utilized, date and time of discharge, volume of wastewater treated and discharged, pH of discharged wastewater, and treatment/discharging operator(s).

### **3.6 Operation of Bag Filters, Treated Oil Media Filter, and Activated Carbon.**

Standard operation of all filtration media requires that influent and effluent valves to the media be open to allow flow to travel through the system. Operators will check housing of all media daily, and observe pressure drop over the media to determine when change outs are necessary. Descriptions of change-out criteria and procedures are included below. All waste types requiring treatment will be run through the bag filters, treated oil media filters, and activated carbon. This will ensure removal of any residual solids, residual oil, and residual organics prior to discharge.

#### **3.6.1 Bag Filter Change-out Procedure**

Bag filters will need to be changed-out whenever the pressure drop across the filter begins to exceed 15 psig, or the appropriate pressure drop set at the control panel. The process flow will normally be shut off for a few minutes to shift valves from primary to secondary vessels and allow the full/spent bags to be replaced. The process for changing bag filters is generally described below:

- Confirm the influent and effluent valves to the filters are closed, and no process flows are being directed to the filters.
- Slowly open the drain valve to relieve pressure in the filters, and allow filter housing to drain.
- Remove the cover to access filter basket housing, and remove the filter bag to dispose.
- Clean out filter housing of any debris, and confirm sealing surfaces and o-rings are intact.
- Install a clean filter basket and filter bag and replace the cover.
- Slowly open the influent and effluent valves to reintroduce flow to bag filters.

#### **3.6.2 Carbon and Oil Filter Change-out Procedure**

Carbon vessels will need to be operated in a lead and lag configuration to obtain optimal removal efficiency of organics. This configuration also allows for monitoring of organics removal efficiency, while minimizing risk of releasing organics. TOC will be monitored in effluent from the leading carbon vessel, once breakthrough is 70% of influent TOC, the carbon in the lead vessel will need to be replaced. TOC will be analyzed either by an offsite certified laboratory that can accommodate a rapid turnaround, or via the onsite HACH DR3900 spectrophotometer and associated test kits. After replacing

the carbon, the previous lag vessel will become the lead, and the vessel with fresh carbon will become the lag vessel. The criteria for determining when organo-clay media needs to be replaced will be when pressure drop alarms signify loss of pressure through the media, alarms will be set at manufacturer recommended values.

The process for changing the media is as described below:

- Confirm the influent and effluent valves to the carbon cartridges are closed, and no process flows are being directed to the carbon.
- Drain any liquids in the lead vessel, remove any spent carbon, and place into a container that can also prevent any seepage.
- Rinse the unit and close any valves leaving the lead unit.
- Add water to a level above the screen in the carbon unit to cushion the addition of carbon into the unit, add fresh carbon to the lead unit.
- Hydrate carbon with clean water, secure the unit by closing the lid, and let sit for 12-24 hours.
- Rearrange the valves to set the carbon unit with fresh carbon as the secondary (or lag) unit. Adjust labels on tanks to clearly indicate LEAD/LAG vessels.
- Adjust sample ports so that influent, mid, and effluent sample locations correspond to the new lead/lag configurations.
- Follow the manufacturer's instructions for conditioning and preparation of a fresh adsorption vessel. For example, fill GAC vessels with water; allow to sit overnight and prior to restart of the system, back flush to bleed off any trapped air within the carbon units.

### **3.7 Non-CWT Wastewaters**

Domestic wastewater (i.e. sewage) is received and processed batch-wise through a screening operation, a centrifuge, and a clarifier to remove excess settleable solids and discharged via a dedicated sampling tank to the shipping pit.

#### **4.1 PERSONNEL**

#### **4.2 Operational and Managerial Responsibilities**

The wastewater treatment facility for which this manual has been prepared has been designed to treat the waste load it is expected to receive.

To ensure efficient and economical wastewater treatment system operation, it is necessary to have an onsite supervisor, a chemist, and wastewater operators.

The primary responsibility of the onsite staff is to maintain at all times a quality effluent from the wastewater treatment plant that is in compliance with the permit discharge requirements.

Following is a list of several responsibilities that shall pertain to the onsite supervisor, chemist, and operators (together referred to as the "team") responsible for managing and operating the wastewater system.

- The team shall maintain a safe working environment,
- The team shall maintain a high-quality plant effluent within permitted discharge limits.
- The team shall maintain efficient plant operation and maintenance.
- The team shall maintain adequate treatment system operational and management records.
- The onsite supervisor shall define operator requirements, prepare job descriptions, develop organizational charts, and schedule personnel.
- The onsite supervisor will provide good working conditions, safety equipment, and proper tools for the operational personnel.
- Operations personnel will participate in necessary training programs.
- The onsite supervisor will motivate operators to achieve maximum efficiency of operation.
- The onsite supervisor will make operations personnel aware of importance of proper and efficient plant performance.

- Facility staff will conduct periodic inspections of the treatment system to discuss operational issues.
- The team will maintain good public relations, in particular with the ODPW representatives.
- Facility management, in conjunction with RI-NU management shall prepare budgets and necessary reports.
- The team shall plan for future facility needs.

#### **4.3 Manpower Requirements/Staff**

Good operation and maintenance in conjunction with properly working equipment is the major factor in the treatment efficiency of any facility. Without the proper operator attention, even a well-designed treatment facility will not produce the effluent limits it is designed to meet.

Please note the following discussion regarding personnel and staffing is a recommendation based on current conditions. Based on the capacity of the treatment system and the historical requirement for continuous operation, it is anticipated that between four and five full time onsite employees including the chemist, and the supervisor are required for adequate plant staffing during each shift. This staffing level is directly related to the volume of wastewater being accepted onsite. During times of maximum use, as many as three operators may be necessary during each shift to effectively monitor and operate the plant. During periods of reduced wastewater flows, the treatment system may be operated with fewer personnel, assuming that the all treatment systems components and controls are operational.

It is of utmost importance that the operators and maintenance personnel receive up-to-date training in the proper functioning of the wastewater treatment facility. The purpose is to protect the plant equipment and to improve the quality of the effluent.

#### **4.4 Job Description and Qualifications**

Listed below is a recommended job description and qualification profile for each of the suggested positions at the treatment plant. Note that a qualified Wastewater Treatment Operator is required at the facility at all times wastewater is being processed at the facility.



## **Onsite Supervisor**

The onsite supervisor serves as the day-to-day operations manager for the plant and also as the lead operator. The success of the plant depends on the ability of the onsite supervisor to recognize problems and communicate them to the project manager.

The onsite supervisor is responsible for ensuring the efficient and economic operation of the treatment plant. The onsite supervisor should provide engineering and technical support for the treatment system and to the operators. The project manager should provide the supervisor and operators with training on the proper function of the wastewater treatment facility. It is recommended that all process decisions have the approval of RI-NU management.

It is the site supervisor's role to analyze the day-to-day data collected by the operators and use this data to determine when a process is not operating efficiently and make recommendations for continuous improvement. The onsite supervisor should work closely with the operators in preparing reports, summaries, and other required written documents.

The site supervisor will, in conjunction with the operators, track the performance of the plant and work closely with the onsite supervisor in a support role.

The utmost priority of the supervisor is to ensure a safe working environment for the operators and any other personnel in the wastewater treatment area. Under no circumstance should the supervisor allow any unsafe practices and procedures to occur at the treatment plant. When dealing with hazardous materials and chemicals, **SAFETY MUST ALWAYS COME FIRST**. The main operational priorities of the onsite supervisor are as follows:

- Ensure that all treated wastewater released to the sewer system is in compliance with the permitted discharge limits. Under **NO CIRCUMSTANCE** will any treated wastewater that is out of compliance be discharged to the shipping pit. Additionally, the supervisor must also make certain that no prohibited discharges are released to the shipping pit.
- Ensure that the wastewater treatment plant is staffed with the appropriate personnel at all times, as necessary to meet the production schedule of the plant.
- Operate the treatment plant as economically and efficiently as possible.
- Maintain adequate supplies and chemicals available for the plant to operate effectively.

In addition to these priorities, the supervisor has general day-to-day duties that consist of management of the operators and the entire operation. Specific job duties can be expected to include the following:

- Control and manage the operation of the treatment plant
- Hands-on training of the operators
- Preparation of shift schedule for the operators
- Enforcement of plant rules and procedures
- Interact with the production and management personnel on a daily basis
- Work with project manager to continuously improve the plant operation
- Maintain shift log and plant operating records
- Prepare status reports
- Maintain facility records

In addition to the onsite managerial duties, the supervisor also serves as an operator and will be expected to perform typical operation functions including but not limited to:

- Operate the treatment facility to control the flow and processing of wastewater, sludge, and effluent
- Monitor gauges, meters, and control panels
- Observe variations in operating conditions and interprets readings and test results to determine treatment requirements
- Operate all wastewater treatment equipment
- Collect samples and perform internal laboratory tests and analyses
- Perform routine maintenance functions and custodial duties

#### ***Recommended Onsite Supervisor Qualifications Profile***

- Formal Education
  - Minimum of a high school graduate or equivalent training and experience.
- General Requirements
  - Knowledge of processes and equipment involved in wastewater treatment.

- Ability to maintain and evaluate records.
- Ability to perform all required duties.
- Ability to maintain working relationship with other operators and production workers.
- General Educational Development
  - Reasoning
    - Apply knowledge of wastewater treatment to solve practical problems.
    - Interpret a variety of written and oral instructions.
  - Mathematical
    - Perform ordinary arithmetical and algebraic procedures in standard, practical applications.
  - Language
    - Establish and maintain communications with superiors and co-workers.
    - Ability to comprehend oral and written instructions, record information, and request supplies and work-materials orally or in writing.
- Specific Vocational Preparation
  - Minimum of 3 to 12 months experience working at an industrial wastewater treatment plant, depending upon formal training and prior experience.
  - Preferred post-high school education in a vocational or scientific discipline.
- Temperament
  - Supervisor must adjust to a variety of situations and conditions and maintain an even temperament. The supervisor must maintain a positive attitude and exercise calm and reasonable judgment when working with the operators, production personnel, or others.
- Physical Demands
  - Anticipated medium to heavy-duty work, involving climbing, balancing, stooping, kneeling, crouching, reaching, handling, talking, hearing, visual acuity, depth perception, and color vision.
- Working Conditions
  - Operations are conducted both indoors and outdoors. Exposure to weather, fumes, odors, and dust. Potential for exposure to hazardous chemicals or toxic conditions.

### **Wastewater Treatment Plant Operator**

The wastewater treatment plant operator at the facility is expected to be a qualified and competent employee. It is necessary for the operator to also interact with production personnel and perform many functions of the supervisor, when not present. The operator may be required to perform any combination of the following tasks pertinent to controlling operation of plant or performs various tasks as directed.

- Operate treatment facilities to control flow and processing of wastewater, sludge, and effluent.
- Monitor gauges, meters, and control panels.
- Observe variations in operating conditions and interprets meter and gauge readings and test results to determine processing requirements.
- Maintain shift log and daily log and records meter and gauge readings.
- Collect samples and performs routine laboratory tests and analyses.
- Perform routine maintenance functions and custodial duties.
- Assist maintenance mechanic/laborer in any combination of the following tasks pertinent to maintenance of the plant:
  - Performs preventive maintenance and minor repairs on mechanical machinery and equipment.
  - Maintains building structures and grounds.
  - Maintenance tasks, such as, lubricate equipment and check for malfunctions; replace pumps or valves; and replace minor repair parts in motors, pumps, and other equipment. Clean out pipes and perform other minor plumbing and pipe-fitting tasks as required.
  - Assist in keeping maintenance records.
  - Perform minor maintenance and minor repair tasks on buildings, structures, and grounds.

- Collect and dispose of trash.

### **Qualifications Profile**

- Formal Education
  - B.S. degree in Chemical Engineering or Environmental Engineering; or,
  - B.S. degree in any other Engineering or Science, preferably with strong background in Chemistry, industrial wastewater treatment processes, and process control; or,
  - A.A. degree in Science with strong background in Chemistry (at least two semesters of General Chemistry) and at least two years of experience in industrial wastewater treatment; or,
  - Industrial Wastewater Treatment Operator Certificate from the California Water Environment Association (CWEA). CWEA offers certification programs for industrial waste treatment plant operators ranging from Grade I to Grade IV; a Grade I certificate is the minimum requirement.
- General Requirements
  - Ability to operate plant processes and equipment.
  - Ability to maintain and evaluate facility logs/records.
  - Ability to collect samples for laboratory analysis and interpret results.
  - Ability to maintain working relationship with other shift workers.
- General Educational Development
  - Reasoning: Apply common sense understanding to carry out written, oral, or diagrammatic instructions. Deal with problems involving concrete variables in or from standardized situations.
  - Mathematical: Perform ordinary arithmetical calculations.
  - Language: Ability to comprehend oral and written instructions, record information, and request supplies and work materials orally or in writing.
- Specific Vocational Preparation
  - On-the-job training from date of employment. Previous experience as laborer or equipment operator in wastewater treatment plant also desirable.

- Temperament
  - Operator must adjust to a variety of situations and conditions and maintain an even temperament. The operator must maintain a positive attitude and exercise calm and reasonable judgment when working with the production personnel or others.
- Working Conditions
  - Operations are conducted both indoors and outdoors. Exposure to weather, fumes, odors, and dust. Potential for exposure to hazardous chemicals or toxic conditions.

**Note that a qualified Wastewater Treatment Operator is required at the facility at all times wastewater is being processed at the facility.**

### **Facility Chemist**

The Facility Chemist is expected to be a qualified and competent employee. The chemist may be required to perform any combination of the following tasks pertinent to plant operations or performs various tasks as directed.

- Evaluate influent waste streams and manifests.
- Perform bench scale testing on influent wastes to assess treatability, and scale up chemical dosing for operators to perform full-scale treatment.
- Operation and maintenance of all analytical equipment, including, but not limited to ICP, pH probes, and flow meters.
- Maintain shift log and daily log and records meter and gauge readings.
- Collect samples and performs routine laboratory tests and analyses.
- Perform routine maintenance functions and custodial duties within onsite laboratory space.

### **Qualifications Profile**

- Formal Education
  - College education in technical field or chemistry preferred.
- General Requirements
  - Ability to learn operation of plant processes and equipment.

- Ability to learn basic treatment mechanics for metal precipitation.
- Ability to maintain and evaluate simple records.
- Ability to maintain working relationship with other shift workers.
- General Educational Development
  - Reasoning: Apply common sense understanding to carry out written, oral, or diagrammatic instructions. Deal with problems involving concrete variables in or from standardized situations. Able to apply understanding of metals precipitation to develop testing regimes to treat influent wastewaters.
  - Mathematical: Perform ordinary arithmetical calculations, and able to scale up chemical dosages based on bench tests.
  - Language: Ability to comprehend oral and written instructions, record information, and request supplies and work materials orally or in writing.
- Specific Vocational Preparation
  - On-the-job training from date of employment. Previous experience as chemist or laboratory technician in wastewater treatment plant also desirable.
  - Ability to run and maintain analytical instruments.
- Temperament
  - Chemist must adjust to a variety of situations and conditions and maintain an even temperament. The chemist must maintain a positive attitude and exercise calm and reasonable judgment when working with the production personnel or others.

## **5.1 SAFETY**

### **5.2 General**

The potential safety and health hazards associated with industrial wastewater treatment systems are many and varied. Some of the hazards to which industrial wastewater treatment operators may be exposed include the following:

- Electrical hazards
- Trip/fall hazards
- Chemical exposure
- Confined space hazards
- Explosion and Fire
- Mechanical hazards (e.g., pinch/crush)
- Miscellaneous hazards

Operations personnel should be aware of all potential hazards that exist in their workplace and should be protected — and protect themselves — from these hazards to the greatest extent possible.

The operators should be aware that **injury frequency rates** for wastewater treatment facility employees are **substantially higher** than those for workers in most other industries. Injuries create human suffering and loss of human resources. In addition, they have a deleterious impact on plant efficiency, employee morale, public relations, and profitability.

Effective management and operation of a wastewater facility requires that all aspects of the operation, including the practice of safety, be at the highest level possible. Safety is initiated by the proper attitude of management toward accident prevention. This attitude will be reflected in the supervisory force and the workers. A safety program must have continuously demonstrated interest and commitment on the part of management if employee participation and cooperation are to be obtained.

### **5.3 Electrical Safety**

Most equipment in a wastewater plant uses electricity as the power source. Working with the equipment requires exposure to electrical hazards that may result in electrocution unless safe practices are strictly followed.



The following list of general safety practices should be considered as a start in establishing complete electrical safety rules and procedures at the wastewater plant:

- Allow only qualified and authorized personnel to work on electrical equipment and wiring or to perform electrical maintenance.
- Utilize lockout/tagout procedures when servicing electrical equipment.
- Electrical equipment and lines will always be considered as energized unless they are positively proven to be de-energized and properly grounded. If it is not grounded, it is not dead.
- The use of metal ladders or metal tape measures around electrical equipment will be avoided.
- Two employees will work as a team on energized equipment.
- Approved rubber gloves will be used when working with voltages above 300 volts.
- An electrical control panel will never be opened unless the job requires it.
- Before work is performed on a line or buss that operates at 440 volts or above, it will be de-energized, locked out, and grounded in an approved manner.
- No part of the body will be used to test a circuit.
- Personnel will avoid grounding themselves in water or on pipes, drains, or metal objects when working on electrical equipment or wiring.
- No electrical safety device will be made inoperative or bypassed.
- When working in close quarters, all energized circuits will be covered with insulating blankets.
- All tools will have insulated handles.
- Metal-cased flashlights will never be used.
- Jewelry will not be worn when working with or near electric circuitry.

- All electric tools will be grounded and/or double insulated.
- Rubber mats will be used at control centers and electrical panels.
- All electric motors, switches, and control boxes will be kept clean at all times.
- Floors and working surfaces will be kept dry to the extent practicable.

Typically, wastewater treatment personnel are not qualified to — and thus should not — perform electrical work. However, it is the responsibility of wastewater operations personnel to ensure that safety rules and practices are adhered to by personnel conducting electrical work in the wastewater treatment area, and to report any apparent unsafe situation or practice to the appropriate RI-NU personnel and the facility manager.

In the event of an electrical accident, the employee(s) discovering the accident will assess the situation and develop a course of action. The course of action should include the following steps/considerations:

- Do not rush up to and touch the victim. This may result in electrocution of the rescuer if the victim is still in contact with the electrical source.
- Determine the cause (an electric tool, power line, or piece of equipment) of shock, that is, the source of electricity:
  - If the cause is a tool or piece of equipment with a switch or circuit breaker, turn the switch or breaker to the off position.
  - If the cause has no switch or circuit breaker, try to remove the cause from the victim by using a non-conductor such as a wooden stick or a rope.
  - If the cause cannot be switched off or too large to be moved, try to move the victim away from the cause. Remember not to touch the victim directly. Again, use a non-conductor such as wood, rope, or plastic to push, pull, or lift the victim from the source of electricity.

If an electrical accident occurs in the wastewater treatment area, the operator (or his designate) will immediately notify the appropriate RI-NU personnel and the supervisor.

#### **5.4 Trip/Fall Hazards**

The wastewater treatment area presents potential trip/fall hazards in the form of ladders, elevated crosswalks/mezzanines, stairs and cords, hoses or other obstacles on walking surfaces.

To minimize trip/fall hazards, the following practices and procedures will be followed:

- Maintain aisles, passageways, and walkways clear of obstructions
- Clean up materials spilled onto walkways immediately
- Maintain covers and/or guarding over all pits and floor openings
- Ensure that guardrails and stair rails are adequately maintained
- Maintain all ladders in good condition, and free of grease and oil
- Do not use the top step of a ladder as a step
- Exercise particular caution when ascending or descending stairs or ladders, and/or when working on elevated surfaces

#### **5.5 Chemical Exposure**

The potential for exposure to hazardous chemicals exists when working with untreated wastewater and chemicals used for treatment. To minimize the risk of chemical exposure, the following general practices/procedures should be followed:

- Utilize safe practices and appropriate personal protective equipment when transferring or otherwise handling hazardous chemicals (e.g., acids, caustics).
- Maintain awareness of the potential hazards associated with chemicals in the wastewater treatment area — read the safety data sheets (SDSs). (SDSs for the chemicals reasonably anticipated to be encountered in the wastewater treatment area are included in Appendix E).
- Ensure that the eyewash stations in the wastewater treatment area are functional and that access to them is unobstructed.
- Maintain clear hazard labels/markings on all containers of hazardous chemicals (e.g., drums, vats, tanks).
- Do not eat, drink or smoke in the wastewater treatment area, and utilize appropriate personal hygiene (e.g., wash hands) before doing so.

- Store hazardous chemicals in closed containers when they are not in use.
- Maintain spill response/cleanup materials in a readily accessible location(s), and utilize appropriate procedures (see below) when cleaning up releases of hazardous chemicals.
- Utilize vacuuming (as opposed to sweeping or blowing) as a means of cleaning up dust whenever possible.
- Maintain descriptive labels/markings on chemical piping systems, and that these systems are maintained free of leaks or drips.
- If a chemical exposure-related accident occurs in the wastewater treatment area, the operator will immediately notify the appropriate RI-NU personnel and the supervisor. The facility is designed such that there is adequate retention on the site so a release will not occur. In the event of a spill or release of a hazardous chemical, follow the procedure outlined in the diagram. In the event of a spill:
  - Determine what has been released, and estimate how much.
  - If there appears to be a threat of fire, explosion or personal injury, evacuate the area, then dial 911 and notify facility management.
  - If there does not appear to be an immediate threat, refer to the SDS for the chemical released for information regarding the appropriate personal protective equipment to be used, spill response procedures, and waste disposal considerations.
  - Contain and clean up the released chemical in accordance with the chemical-specific recommendations from the SDS.

SDSs for each chemical used can be found in Appendix E. If the operator has a specific question regarding the chemical, please refer to the SDS. If treatment chemicals are changed or updated, adjust Appendix E as necessary.

## **5.6 Confined Space Hazards**

Confined space hazards that may be encountered in the wastewater treatment area include tanks that pose hazards associated with chemical exposure, falls, and/or engulfment (e.g., drowning). A confined space is defined by Occupational Safety and Health Administration as a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work;
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
- Is not designed for continuous employee occupancy.

**Unless properly trained and qualified, wastewater treatment plant employees are not authorized to enter into confined spaces at any time.**

If a confined space entry needs to be performed, please contact the site supervisor for assistance.

## **5.7 Explosion and Fire Hazards**

Explosion and/or fire can result from a variety of causes such as ignition (by a spark or flame) of flammable or explosive materials, ignition of materials due to oxygen enrichment, or chemical reactions that produce fire or heat. Explosions and fires can occur spontaneously, but are more often the result of some activity such as the mixing of incompatible chemicals or the inadvertent ignition of a flammable/explosive material or atmosphere.

Explosions and fires can present the following hazards: intense heat, flying debris, smoke inhalation, and/or the release of hazardous products of combustion. To minimize the potential hazards associated with fire and explosion, the following practices and procedures should be followed:

- Maintain an adequate number and type of portable fire extinguishers in readily accessible locations.
- Ensure that operators are periodically instructed in the use of extinguishers and fire protection procedures.
- Store all flammable liquids in closed containers when not in use.

- Store all combustible scrap, debris, and waste materials (e.g., oily rags) in covered metal receptacles, and remove this material from the area promptly.
- Store incompatible chemicals and materials (e.g., acids and bases, oxidizing materials), in separate, designated areas to minimize the risk of explosive reactions.
- Do not smoke in the wastewater treatment area.
- Maintain clear access to all emergency exits.
- In the event of a fire, the operator(s) discovering the fire will:

Pull the fire alarm.

- If alarms are not functional for any reason, pass the word "FIRE," give the location over the phone system and notify the appropriate RI-NU personnel.
- Locate the nearest fire extinguisher.
- If the operator has been trained to respond, and if exposure to fumes or contact with hazardous materials can be avoided, attempt to extinguish the fire. An operator will not attempt any of these measures alone and will secure help.
- Once the fire has been extinguished or it has been determined that the fire cannot be safely extinguished, proceed to the nearest exit, and then to the designated evacuation assembly area.

### **5.8 Miscellaneous Hazards**

Operators in the wastewater treatment area may also be exposed to other potential hazards, including heat/cold, blood borne pathogens, cuts and abrasions, and hazards associated with lifting, etc. To minimize these potential hazards, the following practices and procedures should be followed:

- The following general safety guides will be observed whenever working around wastewater.
  - Hands and fingers will be kept from the nose, mouth, eyes, and ears.

- Rubber gloves will be worn when cleaning pumps; handling wastewater, treatment chemicals, sludge or grit; or for other work in which an employee comes into direct contact with untreated wastewater or chemicals.
- Gloves will always be worn when hands are chapped or burned or when the skin is broken for any cause. Gloves will be worn when handling wastewater and/or treatment chemicals.
- Before eating or smoking, and after work, the hands will be washed thoroughly with soap and hot water.
- Fingernails will be kept short, and foreign material will be removed from the nails.
- Fresh work clothes will not be stored with used work clothes.
- All cuts and scratches must be reported and be given first aid treatment.
- A shower should be taken after each workday.

Improper lifting can result in injury. Use proper lifting techniques, and obtain help when necessary.

- If workplace heat becomes a problem, employ appropriate work/rest regimens, and ensure that operators drink adequate fluids.
- If temperatures drop too low, exposure to water spray can induce hypothermia. Ensure operators adequately monitor temperatures, and change out of wet clothing in cold conditions.
- Observe universal precautions in the event of exposure to blood or other potentially infectious materials.

## **5.9 Laboratory Safety**

Safety is important in the laboratory as well as in the rest of the treatment plant. Pertinent safety practices in wastewater plant laboratories are as follows:

- All chipped or cracked glassware will be discarded in a specific container marked for disposal of broken glass.

- When using volatile solvents, bases, or acids, the work will be done in a well ventilated area.
- Solvents will be stored in special explosion-proof cans.
- Acids react violently with some organic materials. When using these chemicals, care should be taken in regard to possible fire or explosion.
- Chemicals will not be handled with the bare hands.
- An emergency eyewash and shower will be located in the laboratory.
- Suction bulbs will be used on all pipettes.
- Appropriate safety equipment will be worn when working with corrosive chemicals.
- A face shield or chemical-type goggles will be used when dangerous chemicals are handled.
- All chemicals will be labeled clearly.
- Gloves will be worn when rubber-to-glass connections are to be made.
- Proper ventilation will be available to remove fumes and dust.
- Smoking and eating in the laboratory is strictly prohibited.
- Any gas cylinders will be stored properly and secured in a well-ventilated area outside the laboratory.
- Appropriate fire extinguishers will be fully charged and readily available in the laboratory.
- Personnel should thoroughly wash their hands with soap and hot water before eating or smoking.
- A container of absorbent inert material, for example, sand, will be available for use in acid or base spills.
- Remember: Always add ACID to WATER, never WATER to ACID.

### **5.10 Safety Equipment**

In addition to the above-mentioned safety equipment for specific areas of the treatment plant, it is necessary to have access to other safety equipment. These items will be located where they are readily accessible to treatment plant personnel, including:

- First aid kits
- Fire extinguishers
- Respirators with the appropriate cartridges
- Protective clothing including gloves and chemical suits
- Face shield
- 5-minute escape bottle
- Safety glasses
- Goggles

Wastewater treatment personnel should maintain familiarity with the location(s) and the proper use and limitations of this equipment.

### **5.11 Emergency Contact Numbers**

The telephone numbers of relevant health and safety personnel including the nearest hospital, police and fire departments, ambulance services, and rescue squad will be posted in the treatment system. The telephone number of the poison control will be readily available in the event of a chemical emergency. The telephone number of the relevant Orange County representatives, RI-NU facility personnel and management will also be posted. For convenience, several important numbers are also provided in this section.

Contact/Situation	Telephone Number
Fire Department/Fire, Explosion	911
Coast Guard National Response Center/Reportable Quantity	1-800-424-8802
Release of Hazardous Substance	
California Emergency Management Agency/Reportable	1-800-852-7550
Quantity Release of Hazardous Substance, Any Significant	911
Emergency Situation	
Hospital/Medical Emergency	TBD/911
Facility Supervisor	TBD
RI-NU Management	TBD
ODPW (Technical Services Program – Source Control, Jeremy Grant)	805-385-3965

## **6.1 RECORDS**

### **6.2 General Records**

Record keeping to track loads of wastewater received and processed through the facility is a vital aspect of operations. The operator record tests procedures, results, and log all processing step observation and measurements. Among other reasons, these records provide serve as a guide in regulating, adjusting, and modifying when repeat deliveries of the same and similar waste stream occur, and for continuous improvement of the plant facilities and treatment processes. Of great importance also is the establishment of a reliable continuing record of processing decisions, proof of performance, issues and corrective measures or other processing recommendations for future operations.

Operation data that is collected, analyzed, and reported will be geared to the particular needs and circumstances. The operator should be able to justify each measurement, observation, calculation, and report on the basis of expected usefulness and value. Data will be collected and tests performed that are necessary to control the treatment processes and reflect their efficiencies.

Note that the facility must maintain (obtain, generate, and keep) all documents (paper and/or electronic) related to wastewater for review during an inspection and for a **minimum of three years** in accordance with the record-keeping requirements in 40 CFR 403.12(o), and 40 CFR 437.

### **6.3 Daily Records**

Daily records are recorded in two main forms at the plant. A continuing diary, or plant log, is kept that contains a wide variety of factual information on matters such as the general status of the plant, progress of maintenance work, equipment failure and repair, unusual or unexpected conditions or analytical results, and names and affiliations of visitors, etc.

Daily shift logs are to be prepared by the operators each shift. These logs are critical to the successful operation of the treatment plant. Important operational data will be recorded on the shift logs. A copy of sample shift log is included in Appendix F.

### **6.4 Operation and Maintenance Cost Records**

RI-NU also tracks operating costs. The major categories of operating costs are labor, chemicals, supplies, and administration. Chemical inventory is performed on a regular basis and chemical usage tracked daily. Supplies include lab chemicals, cleaning materials, maintenance parts and fluids, and other expendable items. All costs will include information on unit costs, total costs, and amounts/quantities used, and waste disposal.

## **6.5 Maintenance Records**

It is necessary to have readily available the equipment and maintenance force capable of keeping equipment in (or restored to) operational condition. Records of the plant will be available for use by operating personnel and will include operations and maintenance manuals as well as design data, shop drawings, equipment history, and other similar information.

## **6.6 Reports**

### **6.6.1 Weekly (or Monthly) Operating Reports**

Weekly (or monthly) operating reports will be prepared that contain a summary of all data collected on a routine basis. These reports are prepared to provide a snap shot summary of the operation of the plant. Flows, chemical usage, and influent loadings will be presented in the reports. The report also provides status summary of maintenance activities, problems experienced and ongoing activities. Examples of a typical status report, with other beneficial logs are provided in Appendix G.

### **6.6.2 Annual Operating Reports**

The facility supervisor, with the assistance of the operators, will prepare a detailed annual operating report. The report is a summary of developments and activities that occurred during the previous fiscal year. It should enable RI-NU to readily determine the status of the facilities. This report should include a complete fiscal summary detailing chemical costs, maintenance costs, labor cost, project management, supplies, etc.

The report will describe the system and the treatment process and will contain flow data, performance data, chemical usage, and associated graphs. The graphs will reflect present conditions and conditions of past years. There will be a discussion and a table that summarizes flow data and operation efficiency during the past year. Process problems and the solutions will be outlined for future reference.

The maintenance section will briefly describe maintenance projects that were completed during the year. Major projects anticipated during the coming year will also be described along with the anticipated costs.

Improvements or capital additions to the treatment plant will be described, if applicable. The costs of recommended improvements will be included as well as the dates of completion.

An annual cost projection is also a necessary portion of an annual report. The projection should cover the previous year's cost, actual expenditures, and the ensuing year's budget. Expenditures of plant operation, administration, capital expenditures, debts service, and receipts and revenues should be presented. The major expenditures of operation and maintenance are labor and chemicals; therefore, these should be discussed in detail. Trends of these expenditures may be plotted and observed to assist in future planning.

### **6.7 Self-Monitoring Reports**

The analytical methods and frequencies for completion of self-monitoring reports (SMRs) are defined in the facility's Permit. The SMRs must be sent to ODPW at dates that satisfy the deadlines set forth in the Permit. All onsite compliance paperwork and data, including sample data, lab reports, and treatment records, are to be kept on site in an office or other central location. These records must be made available during inspections. If the operator or chemist elects to take additional samples of the system effluent to be analyzed by a state-certified lab, these results must be included in the SMR to be used for calculation of monthly average effluent concentrations.

### **6.8 Facility Plans**

The Site must provide and maintain certain facility plans as required by the permit or City of Oxnard regulations. At a minimum, these include a slug control plan and a waste analysis plan (WAP).

### **6.9 Personnel Records**

Records that reflect such things as employee training and employee turnover rate are valuable to treatment system management. A folder will be kept on file for each employee that contains such information as the date of employment, previous employment history, education, salary increases, company contacts, etc.

### **6.10 Violations and Equipment Failure**

After becoming aware of a violation as determined by sampling conducted by the operator, RI-NU must notify ODPW within a time specified in the Permit. RI-NU shall investigate the cause of the violation, take corrective actions to prevent the violation from recurring, and submit a report to ODPW within a time specified in the Permit.

Upon discovery of any equipment failure, accidental discharge of prohibited substances listed in Chapter 19 of the Oxnard City Code, or any slug loads or spills that may enter the Oxnard Municipal Wastewater System, RI-NU must immediately notify ODPW. The notification should



include the nature of the event, location of discharge, date and time of discharge, concentration and volume of pollutant, and corrective actions already taken or that will be taken.

DRAFT

## **7.1 ANALYTICAL TESTING**

### **7.2 Purpose**

The management and control of any process is essential if the process is to operate efficiently and meet specific standards. To achieve these operational goals, it is necessary to have selected measurements to enable an operator to make the proper decision relative to altering the treatment for varying process conditions.

For the purposes of this operations manual, this analytical testing section will refer to samples being analyzed for regulatory purposes. These samples will be sent to a certified laboratory. However, the principles discussed in this section will also benefit any in-house sampling or monitoring used for bench marking process performance.

### **7.3 Sampling**

Samples are to be taken at the monitoring points as specified in the Permit, and are not to be taken after the wastewater is diluted by any other waste stream, body of water, or substance. All the equipment used for sampling and analysis should be routinely calibrated, inspected, and maintained to ensure measurement accuracy. Calibration frequency of the flowmeters is defined in the Permit.

#### **7.3.1 Sample Types**

The value of results from wastewater laboratory testing is dependent upon the sample being representative of the source from which it was taken. There are two types of samples taken for wastewater laboratory analyses:

**Grab Sample** — A single sample taken at neither set time nor flow.

**Composite Sample** — A combination of individual samples taken at selected time or flow volume intervals, for a specified period to minimize the effect of the variability of the individual sample.

Samples may be of equal volume or proportional to flow at the time of sampling. Grab samples are collected at a particular instant and represent conditions existing at that single moment. Composite samples represent conditions over a longer, definite period of time.

After a representative sample has been collected, it is essential that it be maintained in a state that will not introduce error before analysis (see Sample Storage below).

Composite samples indicate the characteristics of the wastewater over a period of time. The effects of intermittent changes in strength and flow are mitigated. Composite samples provide sufficiently

accurate data if the variability of the waste characteristics is not extreme; however, the variability of these characteristics must be determined by the analysis of grab samples. The maximum time over which a composited sample may be accumulated is to a degree limited by the period the sample can be stored without changing its characteristics.

### **7.3.2 Sample Location**

The sampling point for the wastewater treatment process is at the sample tank located adjacent to the neutralization sump. Samples are collected via a programmable ISCO sampler that is connected to the sample tank. The sample parameters, monitoring frequency, and method of sample collection are stated in the Permit (Appendix A). All sample analysis as required by the permit must be performed by an approved, California-certified laboratory facility.

Additional grab samples may be drawn off from individual tanks via sampling port. These samples are to be used for in-house testing and monitoring for optimization of treatment processes.

### **7.3.3 Sample Storage**

Composite samples must be preserved in such a way that the characteristics to be measured do not change in quantity or quality. Special collection methods are sometimes required. The analytical laboratory will provide specific preservative and storage requirements for specific analytes.

The final step after a sample has been collected, composited, and preserved is to identify the sample properly and clearly before it is submitted to the laboratory. At the minimum, the following are required for the sample label:

- Designation or location of sample collection
- Date and time of collection
- Indication of grab or composited sample with appropriate time and volume information
- Notation of information that may change before laboratory analyses are made such as temperature, pH, and appearance
- Initials or name of individual who took the sample
- Note regarding preservation used, if any

## **7.4 Laboratory Procedures**

The selected laboratory will be certified for wastewater analysis in California, and will analyze each sample for each indicated parameter in accordance with the methods established by 40 CFR Part 136.

### **7.4.1 Laboratory References**

The following list of references is recommended as they offer instructions for performing laboratory tests.

- American Public Health Association. *Standard Methods for Examination of Water and Sewage*.
- United States Environmental Protection Agency. *Methods for Chemical Analysis of Water and Waste* (GPD Stock No. 5501-0067).
- *WPCF Publication No. 18*, "Simplified Laboratory Procedures for Wastewater Examination."
- *WPCF Manual of Practice No. 11*, "Operation of Wastewater Treatment Plants."
- Sawyer, Claire N. *Chemistry for Sanitary Engineers*. New York, McGraw-Hill. 1967.

## **8.1 MAINTENANCE**

Regularly scheduled equipment maintenance is of the utmost importance and absolutely must be performed to obtain reasonable service life from the equipment. It is important that all employees of the wastewater treatment plant become familiar with necessary routine maintenance on equipment.

## **8.2 Scheduled Maintenance**

Scheduled events listed below are suggested, and facility staff may adjust accordingly to maintain optimal plant performance.

### **8.2.1 Daily**

Each day that the facility is operating, facility staff should:

- Clean all pH probes, follow probe manufacturer recommendations for probe cleaning
- Check calibration of pH probes, if off, recalibrate probes using pH meter manufacturer instructions
- Check all float switches
- Calibrate analytical equipment
- Grease centrifuges and Moyno pumps and other rolling stock as needed.
- Check gear oil and air compressor oil levels
- Check fluid levels on loaders.
- Check coolant water level on ozone generator

### **8.2.2 Weekly**

- At a minimum pH probes will be calibrated each week
- Inspect air compressor for properly functioning blow off
- Check plows on centrifuges and adjust/replace as needed.

### **8.2.3 Monthly**

- Change compressor oil and filters. Drain condensate from receiver.
- Check air dryers and replace as needed.

### **8.2.4 Annually**

All pumps and equipment will be checked annually to confirm that they are in working order, and do not require replacement. Additionally, as per the Permit requirements, the flow meter(s) on the discharge line(s) will be calibrated and recertified, as needed.

### **8.3 Troubleshooting**

The importance of inspection as part of the overall maintenance program cannot be overstressed. All plant employees should participate in the inspection process to insure that problems in any area are resolved as soon as possible. Any issues with any equipment should be followed up with manufacturer's recommendations; a list of some common potential issues with their potential fix is listed below.

- Chemical dosing pumps not operating/poor separation: Confirm that diaphragms are sound, and check valves are not sticking or fouled by confirming flow.
- Metals not precipitating from wastewater: check that pH probe is properly calibrated, as metals precipitation is strongly contingent upon pH.
- Flow rate through organo-clay vessels drops: it is likely that pressure has built up as media is spent. Initiate media change out process, and investigate pressure alarms to confirm they are properly operating.

As the facility continues operation, operators should amend this troubleshooting list to include any common issues and solutions as they are identify.

### **8.4 Inspection**

The importance of inspection as part of the overall maintenance program cannot be overstressed. All plant employees will participate in the inspection process to insure that problems in any area can be quickly discovered and remedied. Each employee is encouraged to report any problems observed while working in the plant.

At the start of and completion of each shift, the facility operator will do a complete walkthrough of the facility. The purpose of this walkthrough is to identify any leaks or potential issues with the facility. The operator will take this time to ensure that if any equipment needs to be turned on or off, it is done so.

### **8.5 Housekeeping**

A general cleanup of the plant each day not only provides a more pleasant place to work, it also helps improve overall plant performance. This cleanup will at least consist of a general floor wash down, removal of trash, organization of supplies and materials, cleaning of filter press area, and cleaning of the laboratory/office area.

**Appendix A**  
**City of Oxnard**  
**Industrial Discharge Permit**  
(Pending permit issuance)

**Appendix B**  
**Oxnard City Code**

**Appendix C**  
**Process Flow Diagram**

## **Appendix D**

### **Facility Layout**

**Appendix E**  
**Safety Data Sheets**

**Appendix F**  
**Sample Daily Shift Log**

**Appendix G**  
**Additional Forms**

## **DUST CONTROL PLAN**

### **For Centralized Waste Treatment Facility**

**RI-NU Services, LLC**  
815 Mission Rock Road  
Santa Paula, CA 93060

August 2018

**Prepared for:**  
RI-NU Services, LLC  
15218 Summit Avenue, Suite 300 #601  
Fontana, CA 92336

**Prepared by:**  
Sespe Consulting, Inc.  
374 Poli Street, Suite 200  
Ventura, CA 93001  
(805) 275-1515

County of Ventura  
Initial Study  
PL15-0106  
**Attachment 20 – August 2018 Dust  
Control Plan**

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**DUST CONTROL PLAN  
For Centralized Waste Treatment Facility**

**RI-NU Services, LLC  
Santa Paula, California**

**August 2018**

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**APPENDICES**

- A. Site Plan
- B. Copy of VCAPD Rule 55 – Fugitive Dust

## DUST CONTROL PLAN

RI-NU Services, LLC  
Santa Paula, California

August 2018

### 1.0 INTRODUCTION AND SUMMARY

<b>Facility Name:</b>	RI-NU Services, LLC
<b>Facility Address:</b>	815 Mission Rock Road Santa Paula, California 93060
<b>Site Contact:</b>	Timothy J. Koziol, (915) 323-7200
<b>Type of Material Processed:</b>	Non-Hazardous Centralized Waste Treatment Facility
<b>Scale of Operation:</b>	Approximately 6.6 acres

The proposed operations at the RI-NU Services, LLC (RI-NU) Facility (Facility) include: accepting, treating, and off-site disposal of various types of non-hazardous wastewater. The primary expected sources of dust generation from this Facility include a solids mixing operation and windblown dust from unpaved surfaces. A water truck and street sweeper will be the main methods used to minimize fugitive dust emissions from the facility:

- For mixing operations, water from the water truck will be sprayed as needed on the stockpiles of solidification material (i.e. saw dust, compost, etc.) that will be located on the northeast end of the two (2) Mixing Areas (see attached Site Plan). Water will also be sprayed as needed to control loosened material that may fall on paved surfaces while being transported from one end of the Mixing Areas to the other. The post-mixed material stored on the southwest end of the Mixing Area will not typically need to be sprayed by the watering truck because this material will be stored underneath a cover.
- The water truck will also be used as needed to control fugitive dust emissions from unpaved surfaces on the north and south-central areas of the facility. The truck may also be used to spray paved surfaces. A non-toxic chemical stabilization dust suppressant may also be applied as needed to unpaved surfaces to minimize fugitive dust emissions. This chemical suppressant will comply with all applicable air and water quality government standards.
- Sweeping will be conducted as needed on paved surfaces where dust or loose, dry material has accumulated.
- Lastly, a Facility-wide speed limit of 15 Miles Per Hour (MPH) or less will be enforced on both unpaved and paved surfaces.

Table 1-1 presents personnel responsible for Plan implementation:

**Table 1-1 Plan Implementation Responsibility**

Role	Contact and Telephone Number	Responsibility
Environmental Manager	Timothy Koziol (915) 323-7200	- Ensure implementation of this Plan - Maintain and update this Plan
Site Monitor 1	Mike Legan (805) 407-2366	- Monitor the Facility for dust related issues. - Ensure compliance with the provisions of this Plan.
Site Monitor 2	To Be Determined	

## 2.0 GENERAL REGULATORY REQUIREMENTS APPLICABLE TO THIS FACILITY

Ventura County Air Pollution Control District (VCAPCD) Rule 55 regulates fugitive dust emissions associated with this Facility. General Rule 55 requirements are:

- No visible dust beyond the property line either:
  - o Beyond the midpoint (width) of a public street or road adjacent to the property line, or
  - o 50 feet from the property line if there is not an adjacent public street or road.
- No emissions of fugitive dust of 20 percent opacity or greater for a cumulative 3 minutes or more in any one (1) hour.
- No track-out from Facility 25 feet or more in length unless at least one of the following three control measures is utilized:
  - o *Track-Out Area Improvement:* Pave or apply chemical stabilization to maintain a stabilized surface from the point of intersection with public paved surface and extend for a centerline distance of at least 100 feet.
  - o *Track-Out Prevention:* Check and clean the undercarriage and wheels on all vehicles before leaving unpaved surface or install a properly functioning and well-maintained track-out control device(s).
  - o *Track-Out Removal:* Remove track-out from pavement as soon as possible but no later than one hour after it has been deposited on the paved road.

All track-out shall be removed at the conclusion of each workday or evening shift.

- No person (including facility or site operator) shall load or allow the loading of bulk materials or soil onto outbound trucks unless at least one of the following dust prevention techniques is utilized:
  - o Use properly secured tarps or cargo covering that covers the entire surface area of the load or use a container-type enclosure.
  - o Maintain a minimum of 6 inches of freeboard below the rim of the truck bed where the load touches the sides of the cargo area and insure that the peak of the load does not extend above any part of the upper edge of the cargo area.

- Water or otherwise treat the bulk material to minimize loss of material to wind or spillage.
- Other effective dust prevention control measures.

A copy of the Ventura County Air Pollution Control District (VCAPD) Rule 55 is provided for reference in Appendix B.

### 3.0 DUST GENERATING SOURCES

The Mixing Areas and Facility-wide unpaved surfaces are the primary expected sources of dust generation. Potential sources of dust include:

- **Mixing Areas:** Solids generated by the waste treatment processes are transferred to Mixing Area #2. These solids tend to be very wet and should not generate dust. Solidification materials (sawdust) are mixed with the wet solids to solidify and prepare them for off-site transport and disposal. The mixing occurs in Mixing Area #2. After mixing, the solids are moved to Mixing Area #1 for temporary storage. Mixed solids will normally be transported off site within one hour of being mixed. If mixed solids are left overnight they will be covered. No unmixed solids will be left overnight.

Within the Mixing Areas, dust may also be generated from the stockpiles of dry solidification materials (saw dust) located near the northeast end of the two (2) Mixing Areas.

- **Unpaved Surfaces:** Fugitive dust from unpaved surfaces may be generated during windy conditions and blow onto paved areas of the site. Off-road vehicles (e.g. forklifts) may also travel on unpaved surfaces and track dust onto paved surfaces. On-road vehicles will not travel over unpaved areas.
- **Stationary Equipment:** Stationary equipment will be used to treat the influent waste water. Equipment following the six (6) Mixing Tanks, such as the Shaker or the Centrifuge, may produce fugitive dust emissions if wet, loose material were to dry-out and fall out of and / or off of the equipment.
- **Material Transport:** Dust may also be generated during the transportation of mixed waste material from one end of the Mixing Areas to the other end for loading into disposal trucks. Off-site transportation of waste materials may also generate dust if waste materials drop from hauling trucks while being loaded. For bulk loading of waste materials onto outbound trucks, the waste materials are expected to be very wet such that loss of material to wind should be minimal.

None of the above listed potential dust generating sources are expected to generate excessive levels of dust, so track-out is not expected to be an issue at this site.

#### **4.0 FUGITIVE DUST CONTROL MEASURES**

During normal wind conditions, typical control and mitigation measures (listed below in Section 4.1) are sufficient to control dust emissions. During high wind conditions, extra steps may be required to control dust generation.

Employees will be trained to identify when the requirements of VCAPD Rule 55 are not being met and to notify the site monitor.

##### **4.1 Standard Dust Control Measures:**

The fugitive dust control measures listed below will be used by the Facility to control dust generation:

- As a standard practice, fugitive dust throughout the site will be controlled by the use of a water truck (except during and / or immediately after rainfall). Only as needed, water will be applied to the Mixing Area and Mixing Area stockpiles, to the actively traveled region between northeast and southwest ends of the Mixing Areas, to paved surfaces throughout the facility and to unpaved surfaces.
- Paved surfaces will be swept, as needed.
- Post-mix material gathered at the southwest end of the Mixing Areas will also be covered while awaiting off-site disposal.
- Non-toxic chemical stabilization dust suppressants may be used on unpaved surfaces in lieu of regular watering with a water truck.
- RI-NU will enforce a 15 MPH or less Facility-wide vehicle speed limit. Signs shall be posted on-site limiting traffic to 15 MPH or less.
- Although material loss due to wind is not expected for outbound haul trucks due to the wet nature of the hauled waste materials, outbound haul trucks may utilize at least one of the following dust prevention techniques if dust generation becomes an issue
  - o Use of a properly secured tarp or cargo covering that covers the entire surface area of the load.
  - o Use of a container-type enclosure.
  - o Maintain a minimum of 6 inches of freeboard below the rim of the truck bed where the load touches the sides of the cargo area and insure that the peak of the loads does not extend above any part of the upper edge of the cargo area.
  - o Water or otherwise treat the bulk material to minimize loss of material to wind or spillage.

##### **4.2 High Wind Dust Control Measures:**

High wind dust control measures are not expected to be necessary because excavation and other significant dust producing activities will not be carried out within this Facility. Regardless, if wind were to exceed 25 MPH over a one-hour period or during other "high wind events" (wind of such velocity as to

cause fugitive dust to be blown from the Facility to off-site areas) dust producing activities will cease and additional watering will be initiated.

## **5.0 RECORDKEEPING**

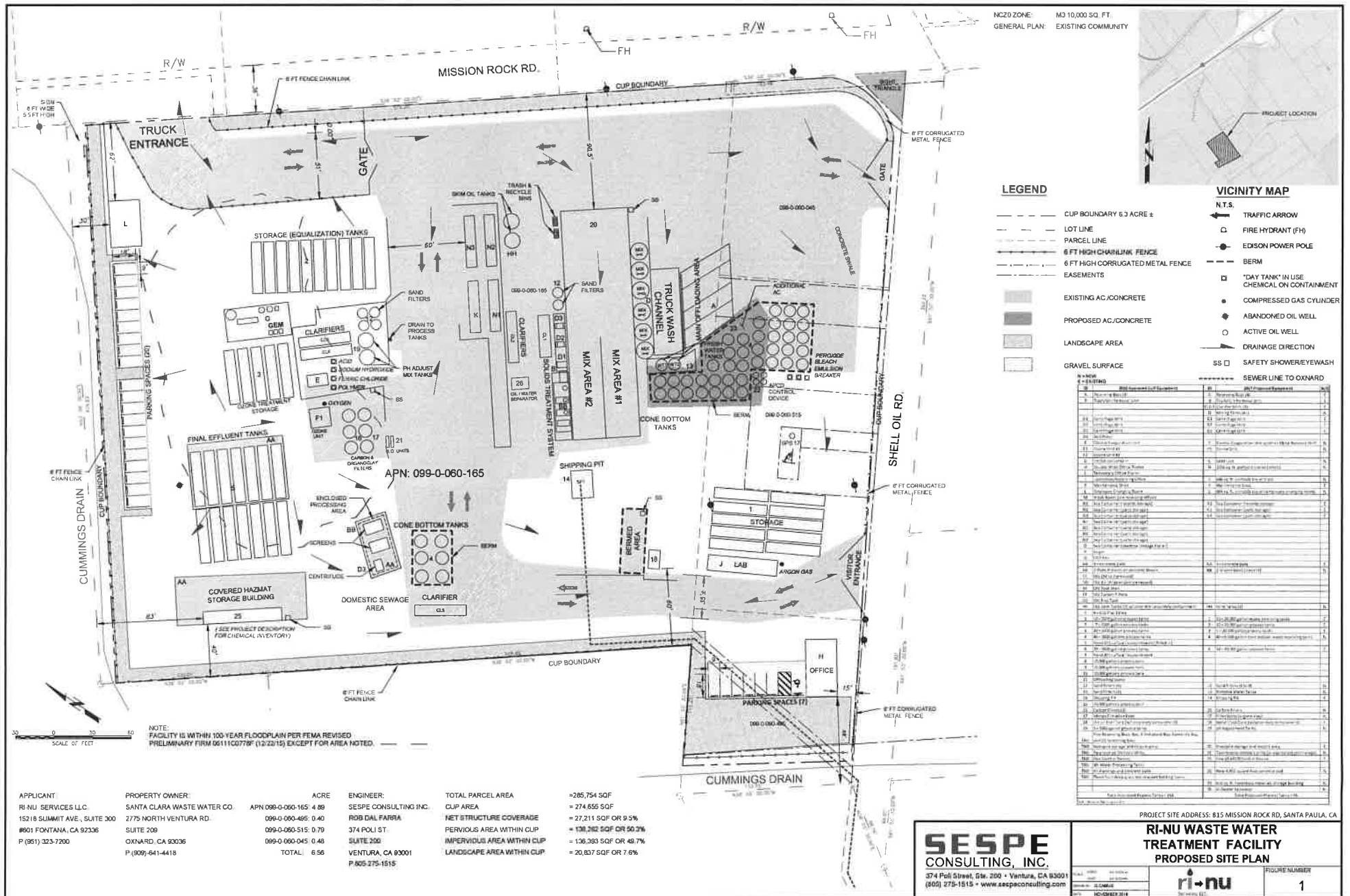
A current copy of this Fugitive Dust Control Plan shall be held and maintained onsite. If dust suppressants are used at the facility, the following records will be kept (VCAPD Rule 55.E.6):

- Dust Suppressant Records: Any person using dust suppressants shall keep the following records:
  - o Description of dust control measure;
  - o Location and extent of coverage;
  - o Date, amount, and frequency of application of dust suppressant; and
  - o Manufacturer's dust suppressant product information sheets.

Any documentation related to this Plan shall be retained for a minimum of 2 years (VCAPD Rule 55.E.7).

## **APPENDIX A**

### **SITE PLAN**



## **APPENDIX B**

### **VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT RULE 55 – FUGITIVE DUST**

## VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

### **RULE 55 – FUGITIVE DUST**

*(Adopted 6/10/08)*

#### **A. Applicability**

The provisions of this rule shall apply to any operation, disturbed surface area, or man-made condition capable of generating fugitive dust, including bulk material handling, earth-moving, construction, demolition, storage piles, unpaved roads, track-out, or off-field agricultural operations.

#### **B. General Requirements – All Fugitive Dust Sources**

1. **Visible Dust Beyond the Property Line:** No person shall cause or allow the emissions of fugitive dust from any applicable source such that the dust remains visible beyond the midpoint (width) of a public street or road adjacent to the property line of the emission source or beyond 50 feet from the property line if there is not an adjacent public street or road.
2. **Opacity:** No person shall cause or allow the emissions of fugitive dust from any applicable source such that the dust causes 20 percent opacity or greater during each observation and the total duration of such observations (not necessarily consecutive) is a cumulative 3 minutes or more in any one (1) hour. Only opacity readings from a single source shall be included in the cumulative total used to determine compliance.
3. **Track-Out**
  - a. No person shall allow track-out to extend 25 feet or more in length unless at least one of the following three control measures is utilized:
    - i. **Track-Out Area Improvement:** Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with public paved surface, and extend for a centerline distance of at least 100 feet with an acceptable width to accommodate traffic ingress and egress from the site.
    - ii. **Track-Out Prevention:** Check and clean the undercarriage and wheels on all vehicles before leaving unpaved surface or install a properly functioning and well-maintained track-out control device(s) that prevents track-out of soil onto paved public roads.
    - iii. **Track-Out Removal:** Remove track-out from pavement as soon as possible but no later than one hour after it has been deposited on the paved road. If a street sweeper is used to remove any track-out, only

PM10-efficient street sweepers certified to meet South Coast AQMD Rule 1186 requirements shall be used. The make and model information and certification documentation of any sweeper used shall be made available upon request.

- b. Notwithstanding the preceding, all track-out shall be removed at the conclusion of each workday or evening shift subject to the same condition regarding PM-10 efficient street sweepers as outlined in Subsection B.3.a.iii. The use of blowers for removal of track-out is expressly prohibited under any circumstances.

C. Specific Activity Requirements

1. Earth-Moving: No person shall engage in earth-moving activities in a manner that creates visible dust emissions over 100 feet in length.
2. Bulk Material Handling Facilities Track-Out Prevention: No person shall conduct an active operation with a monthly import or export of 2,150 cubic yards or more of bulk material without utilizing at least one of the following measures at each vehicle egress from the site to a public paved road:
  - a. Install a pad consisting of washed gravel (minimum size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.
  - b. Pave the surface at least 100 feet long and at least 20 feet wide.
  - c. Utilize a wheel shaker/wheel spreading device, also known as a rumble grate, consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and sufficient width to allow all wheels of vehicle traffic to travel over grate to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
  - d. Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
  - e. Any other control measure or device that prevents track-out onto public paved roads.
3. Truck Hauling: No person (including facility or site operator) shall load or allow the loading of bulk materials or soil onto outbound trucks unless at least one of the following dust prevention techniques is utilized:

- a. Use properly secured tarps or cargo covering that covers the entire surface area of the load or use a container-type enclosure.
- b. Maintain a minimum of 6 inches of freeboard below the rim of the truck bed where the load touches the sides of the cargo area and insure that the peak of the load does not extend above any part of the upper edge of the cargo area.
- c. Water or otherwise treat the bulk material to minimize loss of material to wind or spillage.
- d. Other effective dust prevention control measures.

D. Exemptions

- 1. This rule shall not apply to:
  - a. On-field agricultural operations.
  - b. Off-field agricultural operations necessary to minimize adverse effects on agricultural or horticultural commodities caused during officially declared disasters or states of emergency.
  - c. Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.
  - d. Active operations conducted by essential service utilities to provide electricity, natural gas, telecommunication, water or sewer during periods of service outages or emergency disruptions.
  - e. Weed abatement operations provided that:
    - i. Mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil, or
    - ii. Any disking or similar operation where effective dust emission prevention control measures are used.
  - f. Abrasive blasting operations meeting the requirements of Rule 74.1.
  - g. Unpaved service roads having traffic volume of 20 vehicle trips or fewer per day used by one or more public agencies for inspection of infrastructure and not used for construction or maintenance-related activity.

- h. Motion picture, television, or video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the APCO must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.
  - i. Temporary earth coverings of public paved roadways where such coverings are approved by a local government agency for protection of the roadway, and where such roadway is closed to through traffic and visible roadway dust is removed within one day following cessation of activities.
  - j. Any paved road unless it has track-out or any publicly-owned unpaved road.
  - k. Demolition operations using blasting explosives, which have been permitted by the California Division of Industrial Safety.
  - l. The disturbance (i.e., disking, ripping, or scraping) of spreading ground lands in preparation for percolative groundwater recharge. Spreading ground lands are ponds, a system of ponds, or basins into which surface water is introduced for the purpose of allowing or enhancing the infiltration of water into underlying aquifers.
2. Frequently Traveled Private Unpaved Road Conditional Exemption: The requirements in Subsections B.1 (Visible Dust Beyond the Property Line) and B.2 (Opacity) shall not apply to fugitive dust from frequently traveled (more than 20 vehicles per day passing in either direction) unpaved private roads if the operator has covered them with a low silt content material such as recycled road base or gravel to a minimum of four inches; or has implemented all of the following control measures:
- a. Control Speed: Control speed to 15 miles per hour or less on unpaved roads through worker notification, signage, and any other necessary means.
  - b. Restrict Access: Restrict access to private unpaved roads currently used by the public either through signage or physical access restrictions.
  - c. Road Treatments: Treat unpaved and uncovered frequently traveled roads with water, mulch, or a non-toxic chemical dust suppressant that complies with all applicable air and water quality government standards. If treated, roads shall be treated in a manner that will avoid the sticking of mud to tires that will be carried onto paved public roads.
3. Lightly Traveled Unpaved Private Road Conditional Exemption: The requirements in Subsections B.1 (Visible Dust Beyond the Property Line) and B.2 (Opacity) shall not

apply to fugitive dust from lightly traveled unpaved private roads if the operator has implemented both of the following control measures:

- a. Control Speed: Control speed to 15 miles per hour or less on unpaved roads through worker notification, signage, and any other necessary means.
  - b. Restrict Access: Restrict access to private unpaved roads currently used by the public either through signage or physical access restrictions.
4. Storage Pile Conditional Exemption: The requirements in Subsections B.1 (Visible Dust Beyond the Property Line) and B.2 (Opacity) shall not apply to fugitive dust from storage piles if the operator has implemented at least one of the following control measures:
- a. Wind Sheltering: Enclose material in a three or four sided barrier equal to the height of the material.
  - b. Watering: Apply water at a sufficient quantity and frequency to prevent wind driven dust.
  - c. Chemical Stabilization: Apply a non-toxic dust suppressant that complies with all applicable air and water quality government standards at a sufficient quantity and frequency to prevent wind driven dust.
  - d. Covering: Install and anchor tarps, plastic, or other material to prevent wind driven dust.
5. High Wind Exemption: The requirements in Subsections B.1 (Visible Dust Beyond the Property Line), B.2 (Opacity), and C.1 (Earth-Moving) shall not apply to fugitive dust when on-site wind speed exceeds 25 miles per hour (mph) for at least 5 minutes in any one hour period as measured by an anemometer with a minimum resolution of 1.0 mph provided:
- a. Applicable control measures outlined in Table 1 have been implemented, and
  - b. Daily records of specific dust control measures have been maintained.
6. Track-out Exemption: The provisions of Subsection B.3 (Track-Out) shall not apply to on-road vehicles (trucks and passenger vehicles) associated with agricultural operations that have caused track-out due to excessively muddy conditions resulting from rainfall.

E. Recordkeeping Requirements

1. Bulk Material Handling Records: Any operator handling bulk materials and having an APCD Permit to Operate shall keep a monthly log, available upon request, containing or referencing the following information:
  - a. Operator name, location of operation, and dates of operation.
  - b. Amount (in yards) of bulk material imported or exported per month.
  - c. Diagram or map of all egress sites to a public paved road and description of corresponding track-out control measure, if required by this rule.
2. Frequently Traveled Unpaved Road Exemption Records: Any operator or owner of an private unpaved road claiming exemption from the requirements in Subsection B.1 (Visible Dust Beyond the Property Line) and Subsection B.2 (Opacity) shall keep the following records:
  - a. Operator name, location of operation, dates when road is open to travel.
  - b. List and diagram of unpaved private roads that have more than 20 vehicle trips per day with corresponding method and description of fugitive dust control. If an unpaved private road is being treated, then describe the method used to control speed and restrict access.
3. Storage Pile Exemption Records: Any owner or operator of a storage pile claiming the exemption from the requirements in Subsection B.1 (Visible Dust Beyond the Property Line) and Subsection B.2 (Opacity) shall keep the following records:
  - a. Operator name, location of operation, dates of operation
  - b. Description of control measure used to minimize fugitive dust including amount of material applied and frequency of application if watering or chemical suppressants are used.
4. High Wind Exemption Records: Any operator claiming the high wind exemption in Subsection D.5 shall keep daily records of specific dust control actions taken.
5. Track-Out Area Exemption Records: Any operator claiming an exemption from track-out area requirements in Subsection B.3.a shall keep the following records:
  - a. Operator name, location of operation, and dates of operations.
  - b. Description of control measure used in the improvement of the track-out area or control measure used to prevent track-out.

6. Dust Suppressant Records: Any person using dust suppressants shall keep the following records: Description of dust control measure; Location and extent of coverage; Date, amount, and frequency of application of dust suppressant; and Manufacturer's dust suppressant product information sheets.
7. Any recordkeeping required by this rule shall be made available to APCD compliance personnel upon request. Records shall be retained for a minimum of two years.

F. Test Methods

Compliance with the opacity limit in Subsection B.2 shall be determined using EPA Method 9 with the following modifications:

1. Position: Stand at least 16.5 feet from the plume(s) with the sun oriented in the 140° sector to your back. If feasible, make opacity observations so your line of sight is approximately perpendicular to the direction of plume travel. To the extent possible, position yourself to make opacity observations using a contrasting background.
2. Field Records: Note the following on a record sheet:
  - a. Description and location of activity generating emissions, and method of control used, if any.
  - b. Observer's name, certification data, and affiliation, and a sketch of the observer's position relative to the dust generating activity and the sun, including estimated distances and direction to the plume.
  - c. Time that reading began, approximate wind speed and direction, description of the sky condition (presence and color of clouds), color of the plume, and type of background.
3. Observations: For each reading, make the observation at the highest opacity in the dust plume starting at an elevation line 5 feet above the emission source. Do not look continuously at the source, but make momentary observations once every 15 seconds. Record each observation to the nearest 5 percent. Each reading represents a 15 second period. If multiple plumes exist, do not include more than one plume in the line of sight at one time.
4. Compliance Determination: If the observer records twelve (12) readings of 20 percent or greater during a one-hour period, the source is not in compliance and observations may stop. The 20 percent or greater opacity readings are not required to be consecutive.

5. Only observers certified by the California Air Resources Board, or the U.S. Environmental Protection Agency may determine compliance with opacity limits.

G. Violations

Failure to comply with any provision of this rule is a violation of this rule.

H. Definitions

1. "Active Operation": Any source capable of generating fugitive dust, including, but not limited to, bulk material handling, earth-moving activities, construction or demolition activities, or vehicular movement on unpaved surfaces.
2. "Bulk Material": Sand, gravel, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.
3. "Construction/Demolition Activities": Any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition, or improvement of property, including, but not limited to, grading, excavating, loading, crushing, cutting, planing, or ground breaking.
4. "Disturbed Surface Area": This means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:
  - a. Been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;
  - b. Been paved or otherwise covered by a permanent structure.
5. "Earth-Moving Activities": This means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading and unloading of dirt, adding to or removing from open storage piles, landfill operations, mining operations, and weed abatement operations.
6. "Frequently-Traveled Unpaved Private Road": For the purpose of defining the conditional exemption in Subsection D.2 , any private unpaved road where the count of vehicles traveling in either direction on the road exceeds 20 in any 24 hour period.
7. "Fugitive Dust": Any solid particulate matter that becomes airborne, other than emitted from an exhaust stack, directly or indirectly as a result of the activities of any person(s).

8. "Lightly-Traveled Unpaved Private Road": For the purpose of defining the conditional exemption in Subsection D.3, any private unpaved road where the count of vehicles traveling in either direction on the road is 20 or less in any 24 hour period.
9. "Off-field Agricultural Operations": Any activities excluding those considered by this rule to be on-field agricultural operations.
10. "On-field Agricultural Operations": Activities, excluding travel on field access roads, conducted solely for the purpose of preparing land for the growing of agricultural or horticultural commodities, tree fruits, or raising of fowl or animals, such as:
  - a. Brush or timber clearing, grubbing, scraping, ground excavation, land leveling, grading, turning under stalks, disking or tilling.
  - b. Drying, pre-cleaning, handling, or storing of agricultural commodity material on the field where it was harvested.
  - c. Handling of fowl, or animal feed materials at sites where animals or fowl are raised.
  - d. Disturbing of cultivated land as a result of fallowing, seeding, planting, plowing, disking, fertilizing the soil, cultivating, irrigating, controlling weeds, thinning, heating, pruning, fumigating, spraying, dusting, or harvesting.
11. "Paved Road": A public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials including, but not limited to, asphalt paving or concrete. For this purpose of this rule, roads covered with recycled road base or gravel are not considered to be paved.
12. "PM-10 Efficient Street Sweeper": Any street sweeper certified by the South Coast AQMD to meet their Particulate Matter (10 microns and less) capture efficiency criteria outlined in SCAQMD Rule 1186 Appendix A.
13. "Source": A source includes all activities and operations that are located on contiguous property under common ownership or control, and includes associated facility-access and haul roads.
14. "Stabilized Surface": Any surface that has been treated, worked, or modified to increase soil stability in order to limit fugitive dust emissions. Methods used to stabilize surface include but are not limited to the following: watering, dust palliatives, vegetation, aggregates, and paving.
15. "Storage Pile": Any accumulation of bulk material or soil, which attains a height of three feet or more and a total surface area of 150 or more square feet.

16. "Track-Out": Any material that adheres to and agglomerates on the exterior surface or tires of motor vehicles, haul trucks, or mobile equipment that have been released onto a named, numbered, or lettered public paved road and can be removed by a PM-10 efficient street sweeper under normal operating conditions.

I. Compliance Schedule:

The requirements of this rule shall become effective on October 8, 2008.

J. Compliance Status

Compliance with this rule shall not guarantee that a person will be in compliance with any other district rule or state regulation, including but not limited to, Rule 50 (Opacity), Rule 51 (Nuisance), Health and Safety Code Section 41700 (Nuisance), or Health and Safety Code Section 41701 (Opacity).

Table 1  
Control Measures Needed to Qualify for High Wind Exemption in Subsection D.5

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-Moving	1. Cease all active operations; OR 2. Apply water to soil not more than 15 minutes prior to earth-moving activities.
Disturbed Surface Area	1. On the last day of active operations prior to any Sunday, 1-day holiday, or any other period when active operations will not occur for at least four consecutive days, apply water with a mixture of chemical stabilizer diluted to not less than 5 percent by volume of the chemical stabilizer or to chemical stabilizer manufacturer specifications; OR 2. Apply chemical stabilizers at least 30 minutes prior to the wind event; OR 3. Apply water to all unstabilized disturbed areas at least every 4 hours during the wind event. If there is any evidence of wind-driven dust, water frequency is increased until wind-driven dust is minimized; OR 4. Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter.
Unpaved Roads	1. Apply chemical stabilizers prior to allowing traffic; OR 2. Apply water at least twice per hour during active operations; OR 3. Stop all vehicular traffic.
Open Storage Piles	1. Apply water at least twice per hour during the wind event; OR 2. Install temporary coverings.



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**Ventura County APCD  
Rule 55, Fugitive Dust**

On June 8, 2008, the Ventura County Air Pollution Control Board adopted Rule 55, Fugitive Dust. Rule 55 was adopted to comply with a state law that requires local air districts with air quality levels exceeding the state's particulate matter (PM) standards to adopt control measures to reduce PM air pollution. Ventura County exceeds the state's air quality standards for PM. The adverse health impacts from PM air pollution include asthma and other lung diseases, heart disease, and premature death. Ventura County APCD staff estimates that Rule 55 will reduce PM air pollution by 6 tons per day. Rule 55 becomes effective on October 8, 2008.

Rule 55 applies to any disturbed surface area, or man-made condition capable of generating fugitive dust, including bulk material handling, earth-moving, construction, demolition, storage piles, unpaved roads, track-out, or off-field agricultural operations.

In summary, the key provisions of Rule 55 are as follows:

- 1) Visible dust from an applicable source is prohibited or limited;
- 2) Measures must be taken to reduce or prevent track-out onto paved public roadways from an applicable source;
- 3) Track-out must be removed from roadways;
- 4) Visible dust exceeding 100 feet in length from earth-moving activities is prohibited;
- 5) Bulk material handling facilities with a monthly import or export of 2,150 cubic yards or more of bulk material must take measures to reduce or prevent track-out onto a paved public road, and;
- 6) Outbound trucks with bulk materials or soil must either be tarpped, have a 6 inch freeboard below the rim of the truck bed or be wetted or treated to minimize the loss of material to wind or spillage.

A more detailed summary of Rule 55 is attached. Copies of Rule 55 may be obtained at [www.vcapcd.org](http://www.vcapcd.org) under Rule Development (Current Rules and Regulations).

For additional information on Rule 55, contact air pollution engineer Stan Cowen at 805/645-1408.

**Ventura County APCD Rule 55, Fugitive Dust**  
**Summary of Rule Requirements<sup>1</sup>**  
**Effective October 8, 2008**

**General Requirements – All Fugitive Dust Sources**

**Visible Dust Beyond the Property Line:** No one shall cause or allow fugitive dust from any applicable source beyond the midpoint (width) of a public street or road adjacent to the property line of the emission source or beyond 50 feet from the property line if there is not an adjacent public street or road.

**Opacity:** No one shall cause or allow fugitive dust from any applicable source that equals or exceeds 20 percent opacity for 3 minutes or more in any one hour.

**Track-Out:**

No person shall allow track-out to extend 25 feet or more in length unless one of the following control measures is used:

- ✓ **Track-Out Area Improvement:** Pave or apply chemical stabilization to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extend for a distance of at least 100 feet with a width to accommodate traffic ingress and egress from the site.
- ✓ **Track-Out Prevention:** Check and clean the undercarriage and wheels on all vehicles before leaving unpaved surface or install a track-out control device(s) that prevents track-out of soil onto paved public roads.
- ✓ **Track-Out Removal:** Remove track-out from pavement as soon as possible but no later than one hour after it has been deposited on the road. If a street sweeper is used to remove any track-out, only “PM10-efficient” street sweepers certified to meet South Coast AQMD Rule 1186 requirements shall be used. The make, model information and certification documentation of any sweeper used shall be made available to APCD personnel upon request.

All track-out shall be removed at the conclusion of each workday or evening shift. The use of blowers for removal of track-out is prohibited.

**Specific Activity Requirements**

**Earth-Moving:** No person shall engage in earth-moving activities in a manner that creates visible dust emissions over 100 feet in length.

**Bulk Material Handling Facilities Track-Out Prevention:** No person shall conduct an operation with a monthly import or export of 2,150 cubic yards or more of bulk material without

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<sup>1</sup> This is a summary of the Rule requirements. Refer to Rule 55, Fugitive Dust, for specific requirements.

utilizing at least one of the following measures at each vehicle egress from the site to a public paved road:

- ✓ Install a pad consisting of washed gravel (one inch minimum size) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.
- ✓ Pave the surface at least 100 feet long and at least 20 feet wide.
- ✓ Utilize a wheel shaker/wheel spreading device, also known as a rumble grate, consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and sufficient width to allow all wheels of vehicle traffic to travel over grate to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
- ✓ Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
- ✓ Any other control measure or device that prevents track-out onto public paved roads.

**Truck Hauling:** No person, including the facility or site operator, shall load or allow the loading of bulk materials or soil onto outbound trucks unless at least one of the following dust prevention measures is used:

- ✓ Use properly secured tarps or covering that covers the entire surface area of the load or use a container-type enclosure.
- ✓ Maintain a minimum of 6 inches of freeboard below the rim of the truck bed where the load touches the sides of the cargo area and insure that the peak of the load does not extend above any part of the upper edge of the cargo area.
- ✓ Water or treat the bulk material to minimize the loss of material to wind or spillage.
- ✓ Any other effective dust prevention control measures.

### **Exemptions**

Rule 55 does not apply to the following (this is a partial list - refer to Rule 55, Section D):

- ✓ On-field agricultural operations.
- ✓ Weed abatement operations provided that: (1) Mowing, cutting or other process is used which maintains weed stubble at least three inches above the soil, or (2) Any disking or similar operation where effective dust control measures are used.
- ✓ Unpaved service roads, with a daily traffic volume of 20 vehicle trips or fewer, used by public agencies for inspection of infrastructure.

- ✓ Motion picture, television, or video production activities when dust emissions are required for visual effects. The APCD must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.
- ✓ Any paved road unless it has track-out or any publicly-owned unpaved road.
- ✓ The disturbance (i.e., diskings, ripping, or scraping) of spreading ground lands in preparation for percolative groundwater recharge.

**Frequently Traveled Private Unpaved Roads:** The Visible Dust and Opacity requirements do not apply to dust from frequently traveled (more than 20 vehicles per day passing in either direction) unpaved roads if the road is covered with a low silt content material such as recycled road base or gravel to a minimum of four inches or implements all of the following control measures:

- ✓ Control Speed: Control speed to 15 miles per hour (mph) or less on unpaved roads through worker notification, signage, and any other necessary means.
- ✓ Restrict Access: Restrict access to private unpaved roads used by the public either through signage or physical access restrictions.
- ✓ Road Treatments: Treat unpaved and uncovered frequently traveled roads with water, mulch, or a non-toxic chemical dust suppressant that complies with all applicable air and water quality government standards. If treated, roads shall be treated in a manner that will avoid the sticking of mud to tires that will be carried onto paved public roads.

**Lightly Traveled Unpaved Private Road Conditional Exemption:** The Visible Dust and Opacity requirements do not apply to dust from lightly traveled unpaved roads if the operator implements both of the following control measures:

- ✓ Control Speed: Control speed to 15 mph or less on unpaved roads through worker notification, signage, and any other necessary means.
- ✓ Restrict Access: Restrict access to private unpaved roads currently used by the public either through signage or physical access restrictions.

**Storage Pile Conditional Exemption:** The Visible Dust and Opacity requirements do not apply to dust from storage piles if the operator has implemented at least one of the following control measures:

- ✓ Wind Sheltering: Enclose material in a three or four sided barrier equal to the height of the material.
- ✓ Watering: Apply water at a sufficient quantity and frequency to prevent dust.
- ✓ Chemical Stabilization: Apply a non-toxic dust suppressant at a sufficiently to prevent wind driven dust.

- ✓ Covering: Install and anchor tarps, plastic, or other material to prevent wind driven dust.

**High Wind Exemption:** The Visible Dust, Opacity and Earth-Moving requirements do not apply to dust when on-site wind speed exceeds 25 mph for at least 5 minutes in any one hour provided:

- ✓ Applicable control measures outlined in Table 1 (of the Rule) have been implemented, and
- ✓ Daily records of specific dust control measures have been maintained.

**Track-out Exemption:** The Track-Out requirements do not apply to on-road vehicles (trucks and passenger vehicles) associated with agricultural operations that have caused track-out due to excessively muddy conditions resulting from rainfall.

### **Recordkeeping Requirements**

Consult Rule 55 for specific recordkeeping requirements

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

**PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions**  
**Ventura County APCD Air District, Summer**

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - 1 unit= 1 one-way trip

Construction Phase - existing facility

Vehicle Trips - Per applicant, change is 50 one way trips (30 round-trips); proposed minus baseline (80-30 one way trips). truck trips no changes.

Fleet Mix - per applicant, only increase in employee trips

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Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.57	1.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	6.8410e-003	0.00
tblFleetMix	MCY	4.0620e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	1.8510e-003	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.1170e-003	0.00
tblFleetMix	SBUS	3.6700e-004	0.00
tblFleetMix	UBUS	9.5800e-004	0.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	0.00	50.00
tblVehicleTrips	SU_TR	0.00	50.00
tblVehicleTrips	WD_TR	0.00	50.00

## 2.0 Emissions Summary

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PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

## 2.2 Overall Operational

### Unmitigated Operational

[illegible]

Mitigated Operational

[illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/20/2018	8/19/2018	5	0	
2	Site Preparation	Site Preparation	8/20/2018	8/19/2018	5	0	
3	Grading	Grading	8/20/2018	8/19/2018	5	0	
4	Building Construction	Building Construction	8/20/2018	8/19/2018	5	0	
5	Paving	Paving	8/20/2018	8/19/2018	5	0	
6	Architectural Coating	Architectural Coating	8/20/2018	8/19/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

#### OffRoad Equipment

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

[illegible]

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### 3.2 Demolition - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

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### 3.2 Demolition - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.3 Site Preparation - 2018

### Unmitigated Construction On-Site

[illegible]

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### 3.3 Site Preparation - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

[illegible][illegible]

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### 3.4 Grading - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

### 3.4 Grading - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.5 Building Construction - 2018

### Unmitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

### 3.5 Building Construction - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

### 3.5 Building Construction - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.6 Paving - 2018

### Unmitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

### 3.6 Paving - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

### 3.6 Paving - 2018

[illegible]

### Unmitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

### 3.7 Architectural Coating - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

**3.7 Architectural Coating - 2018****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0599	0.0712														
Unmitigated	0.0599	0.0712														

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	50.00	50.00	50.00	172,900	172,900
Total	50.00	50.00	50.00	172,900	172,900

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	100.00	0.00	0.00	100	0	0

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

## 5.0 Energy Detail

Historical Energy Use: N

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

## 5.1 Mitigation Measures Energy

[illegible]

## 5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

**Mitigated**

[illegible]

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

[illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000															
Consumer Products	0.0000															
Landscaping	1.0000e-005	0.0000														
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>														

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000															
Consumer Products	0.0000															
Landscaping	1.0000e-005	0.0000														
<b>Total</b>	<b>1.0000e-005</b>	<b>0.0000</b>														

**7.0 Water Detail**

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- ROG/NOx Emissions - Ventura County APCD Air District, Summer

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**7.1 Mitigation Measures Water**

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**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

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**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions**  
**Ventura County APCD Air District, Annual**

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - 1 unit= 1 one-way trip

Construction Phase - exisintg facility

Vehicle Trips - max employees at 40. truck trips no changes. Per applicant, proposed minus baseline (80-30 one way trips).

Fleet Mix - per applicant, only increase in employee trips

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.57	1.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	6.8410e-003	0.00
tblFleetMix	MCY	4.0620e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	1.8510e-003	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.1170e-003	0.00
tblFleetMix	SBUS	3.6700e-004	0.00
tblFleetMix	UBUS	9.5800e-004	0.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	0.00	50.00
tblVehicleTrips	SU_TR	0.00	50.00
tblVehicleTrips	WD_TR	0.00	50.00

## 2.0 Emissions Summary

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PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

## 2.1 Overall Construction

### Unmitigated Construction

[illegible]

### Mitigated Construction

[illegible][illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

## 2.2 Overall Operational

### Unmitigated Operational

[illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area																2.0000e-005
Energy																0.0000
Mobile																49.5163
Waste																0.0000
Water																0.0000
<b>Total</b>																49.5163

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail****Construction Phase**

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/20/2018	8/19/2018	5	0	
2	Site Preparation	Site Preparation	8/20/2018	8/19/2018	5	0	
3	Grading	Grading	8/20/2018	8/19/2018	5	0	
4	Building Construction	Building Construction	8/20/2018	8/19/2018	5	0	
5	Paving	Paving	8/20/2018	8/19/2018	5	0	
6	Architectural Coating	Architectural Coating	8/20/2018	8/19/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### Unmitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.2 Demolition - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.2 Demolition - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.3 Site Preparation - 2018

### Unmitigated Construction On-Site

[illegible]

### Unmitigated Construction Off-Site

### Mitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.3 Site Preparation - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.4 Grading - 2018

### Unmitigated Construction On-Site

[illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.4 Grading - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.4 Grading - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.5 Building Construction - 2018

### Unmitigated Construction On-Site

[illegible]

Age Group	No answer	No	Yes	Probably yes	Probably no
18-24	10	10	10	10	10
25-34	10	10	10	10	10
35-44	10	10	10	10	10
45-54	10	10	10	10	10
55-64	10	10	10	10	10
65-74	10	10	10	10	10
75-84	10	10	10	10	10
85+	10	10	10	10	10

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PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.5 Building Construction - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.6 Paving - 2018

### Unmitigated Construction On-Site

[illegible]

[illegible][illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.6 Paving - 2018

### Mitigated Construction Off-Site

[illegible]

### 3.7 Architectural Coating - 2018

### Unmitigated Construction On-Site

[illegible]

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

### 3.7 Architectural Coating - 2018

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**3.7 Architectural Coating - 2018****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated																49,5163
Unmitigated																49,5163

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	50.00	50.00	50.00	172,900	172,900
Total	50.00	50.00	50.00	172,900	172,900

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	100.00	0.00	0.00	100	0	0

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

## 5.0 Energy Detail

Historical Energy Use: N

PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

## 5.1 Mitigation Measures Energy

[illegible]

## 5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0																0.0000
<b>Total</b>																	<b>0.0000</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0				0.0000
<b>Total</b>					<b>0.0000</b>

### 5.3 Energy by Land Use - Electricity

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0				0.0000
Total					0.0000

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

[illegible]

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Landscaping																2.0000e-005
<b>Total</b>																<b>2.0000e-005</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Landscaping																2.0000e-005
<b>Total</b>																<b>2.0000e-005</b>

**7.0 Water Detail**

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				0.0000
Unmitigated				0.0000

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0				0.0000
<b>Total</b>					<b>0.0000</b>

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0				0.0000
<b>Total</b>					<b>0.0000</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				0.0000
Unmitigated				0.0000

## PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0				0.0000
<b>Total</b>					<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0				0.0000
<b>Total</b>					<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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PL15-0106 Ri-Nu Facility-Change in Vehicle Trips- GHG Emissions - Ventura County APCD Air District, Annual

## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers


Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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 <b>VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT</b>	<b>ENGINEERING DIVISION</b> <b>Policies and Procedures</b>
<b>Issued: February 12, 1992</b>	<b>Subject: Air Toxics Review of Permit Applications</b>
<b>Revised: July 10, 2002</b>	

## Policy Statement

Each application for an Authority to Construct, or an application for a Permit to Operate when no Authority to Construct was issued, will be reviewed by the Air Toxics Section to determine if a health risk assessment needs to be prepared for the application.

If a health risk assessment is needed, the health risk assessment shall be prepared for the air toxic emissions from the emissions units that are the subject of the application. The health risk assessment shall be prepared in accordance with the current guidelines used for the Air Toxics Hot Spots program.

If the health risk assessment indicates that the additional carcinogenic risk associated with the emissions units that are the subject of the application is less than 1 in a million, and that the acute and chronic hazard indices are less than 0.5, no further action will be required.

If the health risk assessment indicates that the additional carcinogenic risk is greater than 1 in a million, or that the acute or chronic hazard indices are greater than 0.5, District staff will work with the applicant to reduce the risk to an acceptable level.

If, after working with the applicant to reduce the risk, the health risk assessment still indicates that the additional carcinogenic risk is greater than 10 in a million, or that the acute or chronic hazard indices are greater than 1, permit conditions will be placed on the permit requiring the applicant to develop and implement a health risk reduction plan. The plan will be required to be submitted within 6 months. The plan will be required to show an acceptable reduction in the health risk within 5 years from permit issuance. An acceptable reduction in the health risk will be one that reduces the additional carcinogenic risk to 10 in a million or less and the acute or chronic hazard indices to 1 or less.

If, after working with the applicant to reduce the risk, the health risk assessment still indicates that the additional carcinogenic risk is greater than 100 in a million, or that the acute or chronic hazard indices are greater than 10, the application will be denied based on failure to demonstrate compliance with the Rule 51 – Nuisance.

If the application is subject to the notice requirements of Health and Safety Code Section 42301.6 because the facility is located near a school, appropriate public notice of the application must be provided prior to permit issuance independent of the results of the health risk assessment.

If the application is subject to Rule 36 – New Source Review – Hazardous Air Pollutants because the facility is a major source of hazardous air pollutants, the provisions of Rule 36 apply independent of the results of the health risk assessment.

## **Background**

Rule 15 – Standards for Permit Issuance requires District staff to deny a permit application unless the applicant shows that the emissions units that are the subject of the application will comply with all applicable requirements including Rule 51 – Nuisance.

Health and Safety Code Section 42301.6 requires District staff to provide public notice of any permit application for a source that emits hazardous air pollutants if the application will result in an emissions increase and the facility is located within 1,000 feet from the outer boundary of a school site.

Rule 36 – New Source Review – Hazardous Air Pollutants requires District staff to conduct a case-by-case maximum achievable control technology determination for any facility that is a major source of federal hazardous air pollutants (HAP). For Rule 36, a major source is defined as one that emits 10 tons per year or more of a single HAP or 25 tons per year or more of a combination of HAP.

## **Discussion**

The District does not have a general new source review rule for toxic air pollutants. District staff does, however, consider that an excessive additional health risk due to the emissions of toxic air pollutants for a new or modified facility is a violation of Rule 51 – Nuisance. The primary object of this policy is, therefore, to define how the Engineering Division will determine if a new, modified, replacement or relocated emissions unit that emits toxic air pollutants can operate in compliance with Rule 51.

Signed:

Karl E. Krause, Manager  
Engineering Division

**VENTURA COUNTY  
AIR POLLUTION CONTROL DISTRICT**  
Memorandum

**TO:** Ali Ghasemi, Manager  
Ventura County APCD Planning Division

**DATE:** April 8, 2019

**FROM:** Kerby E. Zozula, Manager  
Ventura County APCD Engineering Division

**SUBJECT:** Health Risk Assessment  
Proposed Ri-Nu Environmental Services (Ri-Nu) Facility  
Former Ventura County APCD Permit to Operate No. 00171  
Former Santa Clara Waste Water Company (SCWW) Facility

**CONCLUSION**

Ventura County APCD (VCAPCD) staff conducted a health risk assessment for the air toxic emissions associated with former Permit to Operate No. 00171 (expired December 31, 2017) issued to the Santa Clara Waste Water Company for its facility at 815 Mission Rock Road in Santa Paula. This VCAPCD Permit to Operate included a number of tanks used to store, process and separate oilfield waste liquids such as produced water and drilling muds that contain hydrocarbons and reactive organic compounds (ROC). The oilfield waste liquids are separated into water, oil, and solids.

The permitted emissions from the proposed Ri-Nu facility are expected to be the same or similar to those of the former Santa Clara Waste Water Company (SCWW) facility. The proposed Ri-Nu facility will also use tanks to store, process and separate oilfield waste liquids that contain hydrocarbons and reactive organic compounds. The oilfield waste liquids will be separated into water, oil, and solids. All tanks will be equipped with vapor recovery and vapor control systems to minimize ROC emissions. All emissions from the proposed Ri-Nu facility will be fugitive in nature.

The health risk assessment assumes that the Ri-Nu facility will have emissions the same or similar to the former Santa Clara Waste Water Company facility. They both process the same oilfield waste liquids with the same process equipment and emission control systems (closed-top tanks, and vapor recovery and control systems). This health risk assessment was conducted using the California Air Toxic Hot Spots Program Facility Prioritization Guidelines developed by the California Air Pollution Control Officers Association (CAPCOA Prioritization Guidelines).

The health risk assessment includes the fugitive emissions from the oilfield waste liquids storage and processing tanks, and oil loading facility. There is no natural gas-fired combustion equipment proposed at the Ri-Nu facility that is subject to VCAPCD permitting requirements.

The flowing priority scores were calculated for cancer risk, non-carcinogenic short-term (acute) health risk, and non-carcinogenic long-term (chronic) health risk:

<u>Priority Score</u>	<u>Cancer Risk</u>	<u>Chronic Risk</u>	<u>Acute Risk</u>
Fugitive Emissions	1.09	0.0285	0.0312
<hr/>			
Total:	1.09	0.0285	0.0312

The numbers above indicate that all priority scores are less than or equal to one (1) and therefore this facility is considered to be a low priority facility that does not result in a significant health risk. According to the CAPCOA Prioritization Guidelines, a prioritization score of 10 or greater is considered to be a high score that requires a more detailed health risk assessment. Prioritization scores of 1 or below indicate that the facility is not considered to have a significant health risk.

## **DISCUSSION AND ASSUMPTIONS**

The former Santa Clara Waste Water Company (proposed Ri-Nu facility) is located at 815 Mission Rock Road in an unincorporated, industrial area of Ventura County, just south of the Highway 126 and north of the Santa Clara River.

The health risk assessment was conducted with the following assumptions:

The “Emissions and Potency Procedure” of the CAPCOA Prioritization Guidelines was used to calculate the facility priority score. This procedure primarily relies on four parameters to prioritize facilities: emissions, potency or toxicity, dispersion, and receptor proximity. A Receptor Proximity Adjustment Factor (RP) of 1 was used as a worst-case scenario. The RP factor decreases as receptors are located at a greater distance from the facility. For example, at a receptor distance of 100 to 500 meters (328 to 820 feet) the RP would be equal to 0.25 and the health risk would be significantly less.

Air toxics emissions were calculated using the permitted emissions of former VCAPCD Permit to Operate No. 00171 that was last issued to Santa Clara Waste Water Company for the period January 1, 2017 to December 31, 2017. The proposed Ri-Nu facility will operate in the same or similar manner to the former SCWW facility. The Ri-NU facility will accept oilfield liquid wastes such as produced waters and drilling muds and will use storage tanks equipped with vapor recovery and vapor control systems.

The air toxics emission factors for the fugitive emissions were based on the San Joaquin Valley APCD AB-2588 Hot Spots Air Toxics Profiles as detailed below.

For the fugitive emissions, Toxic Profile ID 204 below was used for benzene, toluene, and xylenes. Hydrogen sulfide emissions, if any, are expected to be negligible from the oilfield liquid wastes and were not included in the priority score.

## San Joaquin Valley APCD AB-2588 Hot Spots Air Toxics Profiles

### Oilfield Equipment Fugitive - District

<b>District Toxic Profile ID</b>	204
<b>Description</b>	Oilfield Equipment Fugitive - District
<b>Source</b>	District Approved Toxic EF for Fugitive emissions. District Policy based on Actual ST in the valley.

<b>Pollutant Name</b>	<b>Emission Factor</b>	<b>Emission Factor Units</b>	<b>CAS#</b>
Benzene	3.50E-03	lbs/lb VOC	71432
Hydrogen sulfide	1.43E-02	lbs/lb VOC	7783064
Toluene	3.40E-03	lbs/lb VOC	108883
Xylenes (mixed)	7.00E-03	lbs/lb VOC	1330207



**SESPE**  
CONSULTING, INC.

374 Poli Street, Suite 200 • Ventura, California 93001

**DRAFT SPILL PREVENTION, CONTROL, AND  
COUNTERMEASURE (SPCC) PLAN  
FOR PROPOSED CWT FACILITY**

**RI-NU Services, LLC**  
815 Mission Rock Road  
Santa Paula, CA 93060

September 2018

Prepared for:

RI-NU Services, LLC  
15218 Summit Avenue, Suite 300 #601  
Fontana, CA 92336

Prepared by:

Sespe Consulting, Inc.  
374 Poli Street, Suite 200  
Ventura, California 93001  
(805) 275-1515

**SPILL PREVENTION, CONTROL, & COUNTERMEASURE (SPCC) PLAN****CERTIFICATION STATEMENT**

1. Name of Facility: RI-NU Services, LLC  
2. Type of Facility: Non-Hazardous Centralized Waste Treatment Facility  
3. Location of Facility: 815 Mission Rock Road  
Santa Paula, California 93060  
4. Name and address of owner or operator:  
Name: Timothy J. Koziol  
Address: 15218 Summit Avenue, Suite 300 #601  
Fontana, California 92336  
Telephone: (951) 323-7200  
5. Designated person accountable for oil spill prevention at Facility: Timothy J. Koziol, CEO/Owner  
6. Reports of previous spills (if any) are presented in the SWPPP.

---

**MANAGEMENT APPROVAL**

This SPCC Plan will be implemented as herein described.

Signature: No signature required for proposed draft. Date: \_\_\_\_\_  
Name: Timothy J. Koziol Title: CEO/Owner

---

**CERTIFICATION (112.3(d))**

I hereby certify that:

- I am familiar with the requirements of 40CFR112.
- I have visited and examined the Facility.
- This SPCC Plan has been prepared in accordance with good engineering practice, including the consideration of applicable industry standards, and the requirements of 40CFR112.
- Procedures for required inspections and testing have been established.
- This SPCC Plan is adequate for this Facility.

---

Printed Name of Registered Professional Engineer

No signature required for proposed draft.

---

Signature of Registered Professional Engineer Date

---

Registration No Expiration State

**CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA CHECKLIST**

Facility Name: RI-NU Services, LLC  
Facility Address: 815 Mission Rock Road, Santa Paula, California 93060

1. Does the Facility transfer oil over water to or from vessels and does the Facility have a total oil storage capacity greater than or equal to 42,000 gallons?  
Yes ☐ No ☒
2. Does the Facility have a total oil storage capacity greater than or equal to 1 million gallons and does the Facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?  
Yes ☐ No ☒
3. Does the Facility have a total oil storage capacity greater than or equal to 1 million gallons and is the Facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula<sup>1</sup>) such that a discharge from the Facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Environments" (See Section 10, Appendix E, 40 CFR 112 for availability) and the applicable Area Contingency Plan.  
Yes ☐ No ☒
4. Does the Facility have a total oil storage capacity greater than or equal to 1 million gallons and is the Facility located at a distance (as calculated using the appropriate formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula<sup>1</sup>) such that a discharge from the Facility would shut down a public drinking water intake?  
Yes ☐ No ☒
5. Does the Facility have a total oil storage capacity greater than or equal to 1 million gallons and has the Facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?  
Yes ☐ No ☒

1. If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

**Certification (ref. 40 CFR 112 Appendix C, Attachment C-II)**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature: No signature required for proposed draft. Date: \_\_\_\_\_

Name: Timothy J. Koziol Title: CEO/Owner

## SPILL PREVENTION, CONTROL, & COUNTERMEASURE (SPCC) PLAN

RI-NU Services, LLC  
Santa Paula, CA

September 2018

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## **SPILL PREVENTION, CONTROL, & COUNTERMEASURE (SPCC) PLAN**

RI-NU Services, LLC  
Santa Paula, CA

September 2018

### **1.0 INTRODUCTION**

This Draft Spill Prevention, Control, and Countermeasure (SPCC) Plan has been prepared for permitting purposes for RI-NU Services, LLC (RI-NU) for their proposed non-hazardous centralized waste treatment Facility (Facility). The Facility is located at 815 Mission Rock Road in Santa Paula, California. The SPCC Plan has been prepared to address the requirements of 40 CFR, Part 112 and California H&S Code, Chapter 6.67, §25270. If the Facility is approved, a final SPCC will be created once the Facility has been built.

The numbers in the section headers (e.g., "112.7") refer to the section of 40 CFR which requires the information presented.

The purpose of the SPCC regulations is to prevent oil discharges from reaching navigable waters of the United States or adjoining shorelines. This Plan covers the storage of approximately 287,841 gallons of oilfield waste and wastewater containing oil (produced water, drilling mud, tank bottoms, etc.) and small quantities of waste oil and motor oil.

The Facility is currently an inactive non-hazardous centralized waste water treatment Facility. On November 18, 2014, an explosion and subsequent fire occurred at the Santa Clara Wastewater (SCWW) Santa Paula Facility. Since the explosion, the Facility has undergone recovery and remediation efforts, which have involved numerous third parties and government agencies. The Facility has not been in operation since November 18, 2014 and has not received or processed any non-hazardous wastes since.

RI-NU has requested to reopen the facility and conduct similar non-hazardous industrial and domestic waste water treatment and disposal operations previously conducted at the Facility (County Planning Application Case No. PL15-0106). The proposed Facility will provide services to various industries throughout southern California.

## 2.0 PURPOSE

This SPCC Plan has been prepared to meet the requirements of Title 40, Code of Federal Regulations (CFR), Part 112 and the California H&S Code, Chapter 6.67, §25270 - Aboveground Petroleum Storage Act. This SPCC Plan is intended to identify procedures and controls for preventing accidental releases of petroleum products and to minimize the impact if a release occurs.

On January 1, 2008, the Certified Unified Program Agencies (CUPAs) were vested with the responsibility and authority to implement the Aboveground Petroleum Storage Act (APSA). The storage statement requirement is included in this authority, but most facilities now meet the requirement by having a current business plan under the Hazardous Materials Release Response Plans and Inventories program.

## 3.0 PLAN AVAILABILITY – 112.3(E)

This SPCC Plan will be maintained at the Facility. It will be available to the Regional Administrator for on-site review during normal working hours.

## 4.0 WRITTEN SPILL REPORTS – 112.4

This section presents the requirements for written spill reports. Section 6.3 contains the requirements for oral notifications.

### ***EPA Requirements***

Written notification must be made to the EPA for (1) a discharge of more than 1,000 gallons of oil in a single discharge or (2) two discharges of more than 42 gallons each within any 12-month period. Within 60 days, a report must be sent to:

*Regional Administrator  
Environmental Protection Agency, Region IX  
75 Hawthorne Street  
San Francisco, CA 94105*

Include the following in the report:

1. *Name of the Facility*
2. *Name of the person preparing the report*
3. *Location of the Facility*
4. *Maximum storage or handling capacity of the Facility and normal daily throughput*
5. *Corrective action and countermeasures taken, including a description of equipment repairs and replacements*
6. *An adequate description of the Facility including maps, flow diagrams and topographical maps (as necessary)*
7. *The cause(s) of the discharge, including a failure analysis of the system or subsystem in which the failure occurred*
8. *Additional preventive measures taken or contemplated to minimize the possibility of recurrence*
9. *Such other information as the (EPA) Regional Administrator may reasonably require*

*pertinent to the SPCC Plan or discharge*

Also, a complete copy of the report must be sent to:

*Los Angeles Regional Water Quality Control Board  
320 W. Fourth Street, Suite 200  
Los Angeles, CA 90013*

After a review of the information, the EPA Regional Administrator may require the Facility to update this SPCC Plan within 30 days of notice.

#### **State Requirements**

According to the Aboveground Petroleum Storage Act, Porter-Cologne Act, and CCR Title 22 - Section 67145 a petroleum spill of 42 gallons or more must be reported immediately per the oral requirements of Section 6.3 of this Plan. Within 15 days, written notification may also be required by the Local Administering Agency, CalEPA and/or the Regional Water Quality Control Board (RWQCB) following the incident. The report should include but may not be limited to:

1. *Name of the Facility*
2. *Name(s) of the owner or operator of the Facility*
3. *Location of the Facility*
4. *Date, time, and type of incident*
5. *Name and quantity of material(s) involved*
6. *An assessment of actual or potential hazards to human health or the environment, where applicable*
7. *Estimated quantity and disposition of recovered material that resulted from the incident*
8. *Method of cleanup implemented to date and proposed cleanup actions*

**5.0 PLAN AMENDMENTS – 112.5**

RI-NU will amend the SPCC Plan whenever one of the following occurs:

1. *Whenever there is a change in Facility design, construction, operation, or maintenance that materially affects the potential for oil discharge. Amendments must be made within six (6) months of changes.*
2. *A review and evaluation of the SPCC Plan must be conducted once every five (5) years. Amendments must be made within six (6) months of review if more effective prevention and control technology will significantly reduce the likelihood of a spill and has been field proven. Document this review using the form in Appendix B.*
3. *A spill or leak has occurred and review of the Plan by the Environmental Protection Agency (EPA) reveals the need to revise the Plan. A written spill report must be submitted to the EPA within 60 days of 1,000 gallons of oil released in any single discharge or more than 42 gallons in each of two discharges within any 12-month period, into or upon navigable waters or adjoining shorelines of the United States. Supervisory personnel will review the release and determine if any additional requirements are necessary to prevent a recurrence of the incident. These additional requirements will then be implemented and the SPCC Plan updated.*

Additions, changes, or deletions made to the SPCC Plan pursuant to any of the above shall be recorded in Appendix B.

A Registered Professional Engineer must certify technical amendments to the SPCC Plan. However, 40 CFR § 112.6 allows self-certification of SPCC Plans and amendments for “qualified facilities”. “Qualified facilities” are those that have 10,000 gallons or less of aggregate aboveground oil storage capacity. Because this plan covers the storage of more than 10,000 gallons of oil, technical amendments to the plan must be certified by a Registered Professional Engineer.

Non-technical amendments (e.g. changes in names and phone numbers, etc.) do not need to be certified by a Registered Professional Engineer.

## 6.0 GENERAL SPCC REQUIREMENTS – 112.7

The following sections present the general requirements of 40 CFR 112.7. This Facility is in compliance with the requirements in this section.

### 6.1 Management Commitment – 112.7

This Plan has full approval of management at a level of authority to commit the necessary resources to fully implement the Plan. Please see the Management Approval section in the Certification Statement at the beginning of this Plan.

### 6.2 Facility Description – 112.7(a)(3)

*Name:* RI-NU Services, LLC  
*Address:* 815 Mission Rock Road  
Santa Paula, California 93060  
*Telephone:* (951) 323-7200

RI-NU has proposed to reinstate and modify Conditional Use Permit No. 960-2 to operate the existing 6.6-acre wastewater treatment Facility located at 815 Mission Rock Road in Santa Paula, California. The site is approximately 0.3 miles south of State Route 126 (SR-126), 0.6 miles north of the Santa Clara River, and 10.7 miles northeast of Pacific Ocean. The Facility remains accessible from Mission Rock Road, which is accessible from the #126 Freeway via Pinkerton Road. See figures in Appendix A.

The Facility is currently an inactive non-hazardous centralized waste water treatment Facility. On November 18, 2014, an explosion and subsequent fire occurred at the Facility. Since the explosion, the Facility has undergone recovery and remediation efforts, which have involved numerous third parties and government agencies. The Facility has not been in operation since November 18, 2014 and has not received or processed any non-hazardous wastes since.

Prior to the November 2014 incident, the Facility was a wastewater treatment Facility, which accepted, treated, and disposed various types of non-hazardous waste streams. RI-NU has requested to take-over similar non-hazardous industrial and domestic wastewater treatment and disposal operations. The proposed Facility will provide services to the various industries throughout southern California.

The proposed Facility will have the following oil containing tanks on site (see tank locations on Figures in Appendix A, Secondary Containment Calculations in Appendix H, and National Oceanic and Atmospheric Administration (NOAA) Point Precipitation Frequency Estimate data in Appendix I):

- **Cone Bottom Waste Receiving Tanks:** The proposed RI-NU Facility will unload oil containing non-domestic wastewaters via a hose connected to a piping manifold. The manifold will direct this waste to forty (40) 6,000-gallon cone bottom waste receiving tanks located within a spill containment area at the southeast portion of the site. The surface's area of 5,554-square feet will be bermed to height of one (1) foot to hold a net capacity (volume available in the event of a failure of the largest tank) of 22,519-gallons. This value was calculated by considering the displacement from the other tanks in the contained region and by including sufficient freeboard for a 25-year, 24-hour rain event. NOAA's National Point Precipitation Frequency Estimate data was used to determine the most reasonable freeboard design criterion of 6.32-inches, or 0.53-feet. This region of the site will also provide containment for accumulated storm water.

- **Mix Tanks:** Wastewater will be pumped from the cone bottom tanks to six (6) 5,000-gallon mix tanks, which will be located north of the receiving tanks. The mix tanks will be used to mix the waste with treatment chemicals prior to processing. The mix tanks will be placed on top of a paved surface that has been graded to direct flow toward the adjacent truck wash channel for containment in case a spill were to occur. The truck wash channel can hold a net capacity of 24,577 gallons, which is 2.4 times the necessary volume (10,157 gallons) to contain the largest tank plus freeboard in the event of a failure and subsequent spill. NOAA's Point Frequency Estimate data was used to determine the most reasonable freeboard design criterion of 6.32 inches, or 0.53 feet. The truck wash channel will also contain storm water run on.
- **Oil/Water Separator:** The oil/water separator will work to separate oil and water by causing the oil to float and accumulate at the surface of the oil-water interface. Once at the surface, the gathered oil waste is removed by skimming. The residual oil waste will then be pumped to the two (2) skim oil tanks which will be located approximately 60 feet northeast. The site has been graded and paved on a relatively flat surface so that storm water and/or spills will pool at several locations, with the overall direction of flow in the western direction. If the oil/water separator were to fail, the spill would accumulate on the level surface between the oil/water separator and the skim oil tanks. The 1.8 to 2.6-foot concrete wall located between the tanks and the adjacent northwestern sea cargo containers (N1 and N2) will provide a barrier for any accumulated spills large enough to exceed the threshold capacity of the flat surface. The height requirement of this wall was calculated to be approximately 1.5-feet to contain the volume of the largest tank (7,121 gallons) plus freeboard in the event of a failure and subsequent spill. This wall height requirement was calculated to provide sufficient freeboard for a 25-year, 24-hour rain event. NOAA's National Point Precipitation Frequency Estimate data was used to determine the most reasonable freeboard design criterion of 6.32-inches, or 0.53-feet. This region of the site will provide secondary containment for both the skim oil tanks and the oil/water separator and will provide containment for storm water.
- **Skim Oil Tanks:** The two (2) 5,000-gallon skim oil tanks will receive skimmed oil from the oil/water separators. Oil removed from the skim oil tanks will be sold or recycled. Spills that may occur from the skim oil tanks will be directed in a southwest direction back towards the oil/water separator. Pavement has been graded so that pooling will take place near the midpoint location between the skim oil tanks and the oil/water separator. A 1.8 to 2.6-foot concrete wall located between the tanks and the adjacent sea cargo tanks (N1 and N2) will provide a barrier for spills exceeding the flat surface secondary containment threshold. This region of the site will provide secondary containment for both the skim oil tanks and the oil/water separator and will provide containment for storm water. Refer to the oil/water separator section above to determine how the height requirement to contain the volume of the largest tank plus freeboard was verified.
- **Waste Oil and Motor Oil Drums:** Two (2) Waste oil and two (2) motor oil drums will be stored in the Covered HazMat Storage Building, which will be located in the northwest portion of the site. The Storage Building has built in spill containment. Potential spills from these four (4) 55-gallon drums would be contained inside the covered building.
- **Diesel Fuel Tank:** This existing single-walled 500-gallon tank is contained in a steel structure. The steel structure will provide secondary containment that exceeds the tank volume. This tank has its own overhead cover structure to minimize rainwater collection in the containment. It will be located in the southwest corner of the site.

There are no completely or partially buried tanks that contain oil at this Facility.

**6.2.1 Materials Stored at this Facility – 112.7(a)(3)(i)**

The proposed Facility will have 40 Cone Bottom Receiving Tanks containing oil bearing non-hazardous waste, two (2) skim oil tanks, six (6) mix tanks, one (1) oil/water separator, one (1) aboveground diesel fuel tank, and multiple drums containing oil related products. The total capacity of oil stored at the site is expected to be 287,841-gallons.

The tanks are summarized in Table 1 and can be located on the Site Plan in Appendix A.

**Table 1: Aboveground Petroleum Storage Tank Summary**

<b>Tank Quantity</b>	<b>Description</b>	<b>Location</b>	<b>Total Capacity (gallons)</b>	<b>Contents</b>	<b>Active?</b>
40	Cone Bottom Receiving Tanks	West and South of Main Office Offloading Area in Southeast Corner of Site	240,000	Non-Hazardous and Non-Domestic Oil Bearing Wastes	Proposed
6	Mix Tanks	Slightly North of Cone Bottom Receiving Tanks	30,000	Non-Hazardous and Non-Domestic Oil Bearing Wastes	Proposed
1	Oil/Water Separator	Center of Site Slightly North of Mix Area #2	7,121	Oil Wastewater	Proposed
2	Skim Oil Tanks	Northeastern Portion of Site Slightly North of Mix Area #2	10,000	Recyclable/Sellable Oil	Proposed
2	Waste Oil Drums	Covered HazMat Storage Building	110	Waste Oil	Proposed
2	Motor Oil Drums	Covered HazMat Storage Building	110	Motor Oil	Proposed
1	Diesel Fuel Tank	Southwest Corner of Site Next to Bermed Area	500	Diesel Fuel	Proposed
<b>TOTAL</b>			<b>287,841</b>		

**6.2.2 Discharge Prevention Measures – 112.7(a)(3)(ii)**

The following are the general procedures and policies in place to prevent an oil discharge:

- **Secondary Containment:** The 40-cone bottom receiving tanks will be secondarily contained by a one (1) foot tall perimeter concrete berm and pavement. The six (6) mix tanks will be secondarily contained using grading, pavement, and the truck wash channel. The skim oil tanks and the oil/water separator will be secondarily contained using grading, pavement, and the 1.8 to 2.6-foot adjacent concrete wall. The diesel tank will be secondarily contained within a covered steel structure. The proposed Covered HazMat Storage Building has built in spill containment. The See Section 6.5 for a detailed discussion of the secondary containment used at this Facility.
- **Valves / Drains:** Valves and/or drains that permit the direct outward flow of the tank's contents to the surface are secured in a closed position when in non-operating or standby use. All cone bottom receiving tanks and the diesel tank are equipped with shutoff valves.
- **Oil Pumps / Fuel Dispensers:** The diesel fuel tank will be located next to existing pavement. The diesel fuel hose dispenser will be positioned so that it is located on top of the pavement while fueling in order to contain any spills that may occur. When not in use, the dispenser will be kept

within the tank's steel structure to provide secondary containment. This area will be accessible only by authorized personnel.

- **Overhead Coverage:** The diesel fuel tank will be kept underneath overhead coverage in order to minimize the potential for contamination of rainwater. Additionally, the Covered HazMat Storage Building, located within the northwest portion of the site, will be covered to contain all stored hazardous material on site.
- **Overfill Prevention:** Tanks are either equipped with visual fill-level gauges or are manually checked prior to transferring material to prevent the overfilling of storage containers.
- **Inspections:** Routine inspections will be performed as described in Section 6.6.
- **Employee Training:** Employees will be trained as described in Section 6.7.
- **Tank Loading / Unloading Procedures:** Loading and unloading procedures will be conducted by Facility personnel. These personnel will be available to prevent spills and respond to spills that may occur. Tanks will be equipped with visual gauges or are manually monitored prior to filling or during cleaning. The diesel tank will be constantly attended during the filling process to detect and respond to releases. Devices will be regularly inspected and tested to ensure proper operation.
- **Spill Kits:** Spill kits containing cleanup materials will be located within the Covered HazMat Storage Building located within the northwest portion of the site and will be available to all employees.

#### 6.2.3 Drainage Control – 112.7(a)(3)(iii)

The proposed RI-NU Facility will unload non-domestic waste via hose connected to a piping manifold. The manifold will direct this waste to 6,000-gallon cone bottom waste receiving tanks located within the southeast portion of the site. The outdoor area containing the non-domestic waste will be bermed to height of one (1) foot to hold a net capacity (volume available in the event of a failure of the largest tank) of 22,519-gallons. Effluent from the cone bottom receiving tanks will be directed to the northern mix tanks. The mix tanks will be placed on top of a paved surface graded to direct flow into the southeastern truck wash channel. After passing through the shaker and centrifuge, effluent from the mix tanks will be directed towards the oil/water separator and, subsequently, the two (2) skim oil tanks. The oil/water separator and skim oil tanks will be placed on top of a flat, paved surface, contained by the 1.8 to 2.6-foot concrete wall located in between the adjacent northwest facing sea cargo tanks (N1 and N2) and the three (3) tanks. The diesel tank will be located within the southwestern portion of the site within a steel structure that provides secondary containment. This tank will have its own overhead cover structure and will be located slightly south of the adjacent bermed area located in the southwest corner of the site. The two (2) waste oil drums and two (2) motor oil drums will be stored in the Covered HazMat Storage Building, which will be located in the northwest portion of the site. Potential spills from these four (4) 55-gallon drums will be contained before leaving the site because they will be inside a covered building.

The site is designed to contain storm water that comes into contact with industrial operations. Grading throughout the site will direct rain water flow to central areas of the Facility. It is predicted that storm water will pool in central low areas and then either evaporate or infiltrate the ground. Tank spills will be contained as described above and spill contents will be disposed of in accordance with Federal, State, and Local regulations. During and/or after a rain event, accumulated storm water will be inspected to

determine the appropriate disposal method. Possible disposal methods include, letting the collected water evaporate, infiltrate the ground, pumping it back into the system for treatment, or sending it off site for recycling. If the storm water appears to contain visible sheen or detectable odor, the storm water will not be discharged. If sheen or odor is not observed, the storm water will be discharged and allowed to percolate the ground. If materials are ever discharged off site, Rainwater Discharge Log's located in Appendix G will be used to record the event.

#### 6.2.4 Spill Response Procedures – 112.7(a)(3)(iv)

These spill response procedures provide guidelines for use by those who respond to oil releases. Common sense and good judgment should be used during emergencies. Do not come in contact with any spilled material unless wearing proper personal protective equipment per the material's Safety Data Sheet (SDS).

1. **NOTIFY SUPERVISOR** as soon as it is safe to do so.
  - If the spill involves fire, the Primary SPCC Contact will call 911 immediately.
  - If the Primary SPCC Contact is not available, the Secondary SPCC Contact should call 911 immediately, notify the Primary SPCC Contact, and take charge until the Primary SPCC Contact arrives.
2. **EVACUATE** the immediate area.
3. **AID** any persons that have been injured or contaminated or are in danger of being injured or contaminated. Do not put yourself in danger trying to save someone else. Avoid contacting any person that contaminated with material. Do not move anyone who may have a back injury.
4. **STOP FLOW**, if it is safe to do so. Stop the source of the spill and contain the material that has already been spilled. Do this only if it can be accomplished safely without endangering life or property. Minimizing the amount of material spilled reduces the potential for discharge and the amount of clean up necessary.
5. **ALERT OTHERS** in the area to stay clear.
6. **CONTAIN SPILL** if it occurs outside of the containment area or may be released from the containment area using absorbent or emergency berms. Care should be used to prevent the spill from leaving company property or entering sewers and storm drains. Sand bag storm drain inlets if necessary.
7. **CLEAN UP** spilled material with absorbent materials, dikes, etc. Contact contractors (see below) for assistance if necessary.
8. **NOTIFY** personnel and agencies presented in Section 6.3.

The following spill response materials are located on site:

- Spill kits / absorbent materials.
- Front-end loaders and vacuum trucks.
- Stockpiled base material for emergency berms.

Contractors may be contacted to provide the following spill response equipment:

- Additional vacuum trucks for spill recovery and removing materials from secondary containment.
- Hazardous material trucks.
- Additional bins and equipment for used absorbent removal.

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The following spill response, containment, and cleanup contractors and materials are available.

<u>CLEANUP MATERIAL</u>	<u>LOCATION</u>	<u>RESPONSE TIME</u>
Stockpiled Base / Soil Material	On site	Immediate
Spill Kits / Absorbent Materials	On site	Immediate
<u>CLEANUP EQUIPMENT</u>	<u>LOCATION</u>	<u>RESPONSE TIME</u>
Loader / Dozer	On site	Immediate
Vacuum Truck	On site	Immediate
<u>CONTRACTOR</u>	<u>ADDRESS</u>	<u>RESPONSE TIME</u>
Patriot Environmental Services	250 S. Hallock Dr., #200	<0.5 hours
Phone: (805) 921-1112	Santa Paula, CA 93060	
Emergency: (800) 624-9136		

#### 6.2.5 Methods of Waste Disposal – 112.7(a)(3)(v)

There may be various types of waste generated during spill response activities. All material generated during spill response activities will be disposed of in accordance with applicable federal, state, and local regulations. Below is a list of common materials and disposal requirements.

- **Oil and oil / water mixtures:** If a large amount of this material needs to be cleaned up, an on-site vacuum truck will be used to collect it. The material may be lab tested to determine if it is non-hazardous and if so, it may be pumped into the on-site wastewater treatment system, otherwise it will be hauled to a licensed treatment, storage, and disposal Facility. Small spills may be cleaned up using absorbent material.
- **Soiled rags, booms, and absorbent material:** This material should be placed in drums and sent to a licensed treatment, storage, and disposal Facility.
- **Oil contaminated soils:** This material should be placed in drums, roll-off boxes, or on plastic-lined ground and sent to a licensed treatment, storage, and disposal Facility.

### 6.3 Verbal Notification Procedures

The oral notification procedures presented in this section must be followed to report spills at the Facility.

#### 6.3.1 Verbal Notification – 112.7(a)(3)(vi)

Follow these verbal notification procedures presented to report spills at the Facility. Notification should be made as soon as possible.

**If 42 gallons or more of oil has been spilled onsite, follow these verbal notification procedures:**

1. *Immediately contact the Primary SPCC Contact – Timothy J. Koziol:*  
*Cell (951) 323-7200*
2. *If the above contact is unavailable, contact the Secondary SPCC Contact – Mike Legan:*  
*Office (805) 525-8315*  
*Cell (805) 407-2366*
3. *If the Primary and/or the Secondary SPCC Contact is available, one of them should immediately notify the following agencies. Note: If the Primary and Secondary SPCC Contacts are both unavailable, then the person who discovered the spill should perform these notifications:*  
*Local Emergency Response: 911*  
*California Emergency Management Agency: (800) 852-7550*  
*Los Angeles Regional Water Quality Control Board: (213) 576-6600*  
*Ventura County Dept. of Environmental Health: (805) 654-2813*

**If 42 gallons or more of oil flows offsite, follow the above procedures plus:**

*Notify the National Response Center at: (800) 424-8802*

**For spills that threaten navigable waters, notify the above plus:**

*Notify United States Coast Guard at: (562) 577-0334*

**6.3.2 Information to be Included in Verbal Notification – 112.7(a)(4)**

Below are possible questions that the agencies may ask during the verbal notification. Have as much of this information as possible when the notifications are conducted. However, **do not** wait until all of this information is known before contacting agencies. Always document the name, agency, position of the person you have contacted, and time of your call.

1. *Facility name, address, and phone number*
2. *Your name and position*
3. *Date and time of the spill*
  - a. *Time or estimated time spill began*
  - b. *Duration of spill or if it is continuing*
  - c. *Location of spill*
4. *Spill information*
  - a. *Materials spilled (e.g., lubricating oil)*
  - b. *Volume or estimated volume spilled*
  - c. *Has spill entered storm drain or navigable waters? If so, how much? If not, is there potential for the spill to enter storm drain or navigable waters?*
  - d. *Source of the discharge*
  - e. *A description of all affected media (i.e. water and/or soil)*
  - f. *Cause of the discharge*
  - g. *Damages or injuries caused by the discharge*
5. *Response measures taken*
  - a. *Containment measures*
  - b. *Clean up measures*
  - c. *Has the source been stopped?*
  - d. *Will evacuation be required?*
  - e. *Which individuals and organizations who have been contacted?*
6. *Weather:*
  - a. *Is it raining?*
  - b. *What is the temperature?*
  - c. *What is the wind speed and direction?*

**6.4 Potential Spill Sources, Volumes, Rates, and Directions – 112.7(b)**

Table 2 shows potential spill predictions for the Facility and Table 3 shows potential spill predictions for the loading and unloading procedures.

**Table 2: Potential Spill Predictions – Storage Tanks**

Source (Quantity)	Type of Failure	Volume (gal)	Rate (gal/hr)	Flow Direction
Cone Bottom Receiving Tanks (40)	Tank rupture / leakage	6,000 (each)	6,000	Spilled material will pool with the 1-foot tall bermed secondary containment area. If a spill breaches the containment structure, it will flow east to the nearby low area in the center of the Facility.
Mix Tanks (6)	Tank rupture / leakage	5,000 (each)	5,000	The mix tanks will be placed on top of a paved surface that has been graded to direct flow toward the adjacent truck wash channel for containment in case a spill was to occur.
Oil/Water Separator (1)	Tank rupture / leakage	7,121	7,121	The oil/water separator will be placed on a flat, paved surface that will be contained by the 1.8 to 2.6-foot concrete wall located in between the adjacent northwest facing sea cargo tanks (N1 and N2) and the oil water separator and skim oil tanks.
Skim Oil Tanks (2)	Tank rupture / leakage	5,000 (each)	5,000	The skim oil tanks will be placed on a flat, paved surface that will be contained by the 1.8 to 2.6-foot concrete wall located in between the adjacent northwest facing sea cargo tanks (N1 and N2) and the oil water separator and skim oil tanks.
Waste Oil Drums (2)	Drum rupture / spilled drum / leakage	55 (each) 110 (total)	55 (each) 110 (total)	Spills from these 55-gallon drums will be contained inside the proposed hazardous material storage building.
Motor Oil Drums (2)	Drum rupture / spilled drum / leakage	55 (each) 110 (total)	55 (each) 110 (total)	Spills from these 55-gallon drums will be contained inside the proposed hazardous material storage building.
Diesel Fuel Tank (1)	Tank rupture / leakage	500	500	Spilled material will pool in the diesel fuel tank secondary containment structure.

**Table 3: Potential Spill Predictions – Tank and Vehicle Loading and Unloading**

Source	Type of Failure	Volume (gal)	Rate (gal/hr)	Flow Direction
Waste Receiving Piping Manifold	Leakage, Rupture	~25	~25	Spilled wastewaters will collect in either the subgrade offloading area or in the cone bottom tank area containment.
Cone Bottom Tanks Piping	Rupture, Leakage, Overfill	~25	~25	
Diesel Tank Loading / Unloading	Rupture, Leakage, Overfill	~25	~25	Spilled material from overfilling will pool in the Fueling Area secondary containment structure. Spilled material from fueling will collect on the pavement and be contained with absorbent materials.

**6.5 Containment – 112.7(c)****6.5.1 Specific Secondary Containment – 112.7(c)**

Specific secondary containment is containment that is engineered to adequately contain the entire capacity of the contained equipment, plus sufficient freeboard. The Aboveground Petroleum Storage Act (APSA) rule requires specific secondary containment for the following types of oil containing equipment:

- Bulk storage containers;
- Portable and mobile storage containers, except mobile refuelers; and
- Loading / unloading racks.

Table 4 summarizes the specific secondary containment utilized at this Facility. Secondary containment calculations are included in Appendix H.

**Table 4: Specific Secondary Containment Summary**

Source (Quantity)	Volume (gal)	Method of Secondary Containment	Containment Volume (gal)	Secondary Containment Status
Cone Bottom Receiving Tanks (40)	6,000 (each) 240,000 (total)	Berm wall, pavement, grading	22,519	Adequate
Mix Tanks (6)	5,000 (each) 30,000 (total)	Truck wash channel, pavement, grading	24,577	Adequate
Oil/Water Separator (1)	7,121	Adjacent 1.6 to 2.8-foot wall, pavement, grading	10,950	Adequate
Skim Oil Tanks (2)	5,000	Adjacent 1.6 to 2.8-foot wall, pavement, grading	10,950	Adequate

Diesel Tank (1)	500	Steel secondary containment structure	1,077	Adequate
Drums (4)	55 (each) 220 (total)	Covered HazMat Storage Building	4,563	Adequate

### 6.5.2 General Secondary Containment – 112.8(c)(2)

The ASPA rule requires that regulated facilities provide general secondary containment for all potential discharges. There are no specific requirements for the design of general secondary containment, only that it must be sufficient to prevent harmful discharges. Types of general secondary containment systems commonly used are earthen dikes, berms, curbs, spill diversion ponds, and active containment devices (i.e., absorbent materials, storm drain covers, portable berms, etc.).

The following types of equipment require general secondary containment:

- Piping;
- Transfer operations;
- Mobile refuelers;
- Containers not meant for bulk storage (i.e., manufacturing equipment); and
- Incidental oil-filled equipment (i.e., transformers, hydraulic equipment, etc.).

General secondary containment at this Facility is provided for loading and unloading operations. Table 5 summarizes the general secondary containment utilized at this Facility.

**Table 5: General Secondary Containment Summary**

Source	Method of Secondary Containment	Volume (gal)	Containment Volume (gal)	Secondary Containment Status
Unloading Piping Manifold	Spilled wastewaters will collect in either the subgrade offloading area or in the cone bottom tank area containment.	~25	>25	Adequate
Fuel Transfer - Diesel Tank Loading / Unloading	Spilled material from overfilling will pool in the Fueling Area secondary containment structure. Spilled material from fueling will collect on the pavement and be contained with absorbent materials.	~25	~25	Adequate

### 6.6 Inspections, Tests, and Records – 112.7(e)

#### Monthly Inspection

Monthly inspections will be performed and documented using the form located in Appendix D.

#### Annual Inspection

Annual inspections will be performed and documented using the form located in Appendix D.

#### Testing

Table 5 presents the tank integrity testing schedule according to the Steel Tank Institute's (STI) Standard for the Inspection of Aboveground Storage Tanks, SP001 (January 2018, 6<sup>th</sup> Edition).

**Table 6: Testing Schedule**

<b>Tank (Quantity)</b>	<b>Volume (gal)</b>	<b>Inspection Requirements</b>	<b>Frequency</b>
Cone Bottom Receiving Tanks (40)	6,000 (each) 240,000 (total)	- Visual Inspection by Facility	Monthly
		- External formal inspection	Every 5 years
		- Leak test inspection	Every 10 years
Diesel Tank (1)	500	- Visual Inspection by Facility	Monthly
Drums (4)	55 (each)	- Visual Inspection by Facility	Monthly
	220 (total)		

This table was developed using SP001 *Standard for the Inspection of Aboveground Storage Tanks* (4<sup>th</sup> Edition, July 2006, Steel Tank Institute)

Note that, for all tanks, monthly visual inspections are sufficient to satisfy the testing requirements in STI SP001.

#### **Recordkeeping**

The following documents will be maintained for at least three (3) years:

- **Training:** Copies of training records (see Appendix C) for all personnel associated with the Plan.
- **Spills:** Spills must be documented. This includes notification, response, mitigation, analysis, and follow-up records. Procedures can be found in Sections 4.0 and 6.3.
- **Maintenance:** Copies of the maintenance reports.
- **Inspections:** Monthly and Annual Inspection Logs (Appendix D).
- **Testing:** Tank testing records.

#### **6.7 Personnel Training – 112.7(f)(1)**

Oil-handling personnel shall be trained annually in the following:

- Operation and maintenance of equipment to prevent discharges.
- Discharge response procedures including Personal Protective Equipment (PPE) and use of response equipment.
- Applicable pollution control laws, rules, and regulations.
- General Facility operations.
- The contents of this Spill Prevention Control and Countermeasure Plan (SPCC) Plan.

A training course outline and a training verification log are included in Appendix C.

**6.8 Organizational Responsibilities – 112.7(f)(2)**

Responsible Person	Responsibilities
<b>Primary SPCC Contact</b>	<ul style="list-style-type: none"> <li>- Accountable for discharge prevention;</li> <li>- Implement the SPCC Plan and ensure that it is updated as necessary;</li> <li>- Ensure necessary resources are allocated to implement this plan and to respond to spills;</li> <li>- Keep records for the Plan as outlined in Section 6.6;</li> <li>- Respond to spills, coordinate cleanup, and notify outside agencies;</li> <li>- Submit Storage Statement or Hazard Materials Business Plan as required by the local CUPA;</li> <li>- Ensure that tanks and containment areas meet the standards of the Plan;</li> <li>- Ensure that personnel have received training appropriate to their responsibilities;</li> <li>- Ensure that monthly inspections are conducted; and</li> <li>- Ensure that tank maintenance, repair, and upgrades are conducted.</li> </ul>
Timothy J. Koziol, CEO/Owner	
<b>Secondary SPCC Contact</b>	<ul style="list-style-type: none"> <li>- Assist the Primary SPCC Contact as necessary;</li> <li>- Assume the Primary SPCC Contact's responsibilities if the Primary SPCC Contact is unavailable; and</li> <li>- Ensure necessary resources are allocated to implement this plan and to respond to spill.</li> </ul>
Mike Legan, Plant Manager	

**6.9 Annual Discharge Prevention Briefings – 112.7(f)(3)**

Briefings for oil-handling personnel must be conducted at least once a year to ensure adequate understanding of the SPCC Plan. This will be included in the annual training (see Section 6.7).

**6.10 Security / Lighting – 112.7(g)**

The entrance gates to the Facility are locked when the Facility is closed, typically at night and on weekends. The Facility entrance is fenced to prohibit unauthorized site access. Security cameras are located throughout the Facility and are remotely monitored 24/7 during non-working hours. Employees living nearby are expected to be on call and will respond to incidents at the Facility during non-working hours.

The valves used to dispense fuel and oil from the tanks and drums are kept closed when the site is closed. The loading and unloading connections will be capped when not in service or on standby for an extended time.

Adequate lighting is installed throughout the Facility to deter vandalism.

**6.11 Facility Tank Car and Tank Truck Loading/Unloading Rack – 112.7(h)**

There are no loading / unloading racks at this Facility.

**6.12 Field Constructed AST Repairs and Modifications – 112.7(i)**

There are no field-constructed aboveground containers at this Facility.

**6.13 Regulatory Requirements – 112.7(j)**

This Plan is in conformance with 40 CFR 112. Please refer to the appropriate section for additional information.

Section 2.0 of this Plan outlines the California requirements (Storage Statement).

**7.0 REQUIREMENTS FOR PETROLEUM OILS – 112.8**

The following sections present the information required by 40 CFR 112.8.

**7.1 Facility Drainage – 112.8(b)**

Material that collects within the bermed areas or in low areas will be pumped back into the system for treatment. Facility drainage is discussed in detail in Section 6.2.3.

**7.2 Bulk Storage Containers – 112.8(c)**

The following sections present information related to the bulk storage containers at this Facility.

**7.2.1 Material of Construction – 112.8(c)(1)**

The diesel tank and oil drums are made of steel, which is compatible with the materials stored. Materials are stored at atmospheric temperature and pressure. The construction of the tanks is compatible with the temperature and pressure of the material stored.

**7.2.2 General Secondary Containment – 112.8(c)(2)**

See Section 6.5.2 for the general secondary containment utilized for this Facility. The secondary containment utilized at this Facility satisfies the requirements of this section.

**7.2.3 Drainage of Rainwater – 112.8(c)(3)**

The Fueling Area is completely covered. Therefore, no rainwater is expected to collect in the secondary containment. If rainwater does collect in secondary containment areas, the procedures presented in Section 6.2.3 will be used to remove it.

The cone bottom receiving tank area is uncovered and therefore rainwater does have the potential to collect within the bermed containment area. If rainwater does collect in the secondary containment area, the procedures presented in Section 6.2.3 will be used to remove it.

**7.2.4 Completely Buried Metallic Storage Tanks – 112.8(c)(4)**

There are no completely buried metallic storage tanks at this Facility.

**7.2.5 Partially Buried Metallic Storage Tanks – 112.8(c)(5)**

There are no partially buried metallic tanks at this Facility.

**7.2.6 Aboveground Tank Testing – 112.8(c)(6)**

The tanks will be tested according to the schedule presented in Section 6.6.

**7.2.7 Heating Coils – 112.8(c)(7)**

There are no internal heating coils used in the oil storage tanks at this Facility.

**7.2.8 Devices – 112.8(c)(8)**

The diesel tank is equipped with a device to visually determine fuel level. Cone bottom receiving tanks are equipped with visual gauges or are manually monitored prior to filling. The tanks are constantly attended during the filling process to detect and respond to releases. Devices are regularly inspected and tested to ensure proper operation.

**7.2.9 Effluent Treatment Facilities – 112.8(c)(9)**

This Facility does have the capability to treat wastewater and effluent. However, the effluent treatment system at this Facility is not currently active. No effluent will be treated at this Facility until reactivation permitting is complete and operations resume.

**7.2.10 Visible Discharges – 112.8(c)(10)**

Visible discharges will be identified and cleaned up using the procedures presented in Section 6.

**7.2.11 Portable Oil Storage Containers – 112.8(c)(11)**

Portable containers, such as 5-gallon and 55-gallon drums, are located in covered areas with secondary containment sufficient to contain the capacity of the largest container as well as precipitation. The area is not subject to periodic flooding.

**7.3 Facility Transfer Operations – 112.8(d)****7.3.1 Buried Piping – 112.8(d)(1)**

No buried oil-containing piping exists at the Facility.

**7.3.2 Terminal Connections – 112.8(d)(2)**

Pipelines not in service or on standby for an extended period are capped or blank flanged and marked as to their origin.

**7.3.3 Pipe Supports – 112.8(d)(3)**

No oil-containing pipe supports are present at the Facility.

**7.3.4 Inspection – 112.8(d)(4)**

Tanks and aboveground piping will be inspected using the procedures presented in Section 6.6.

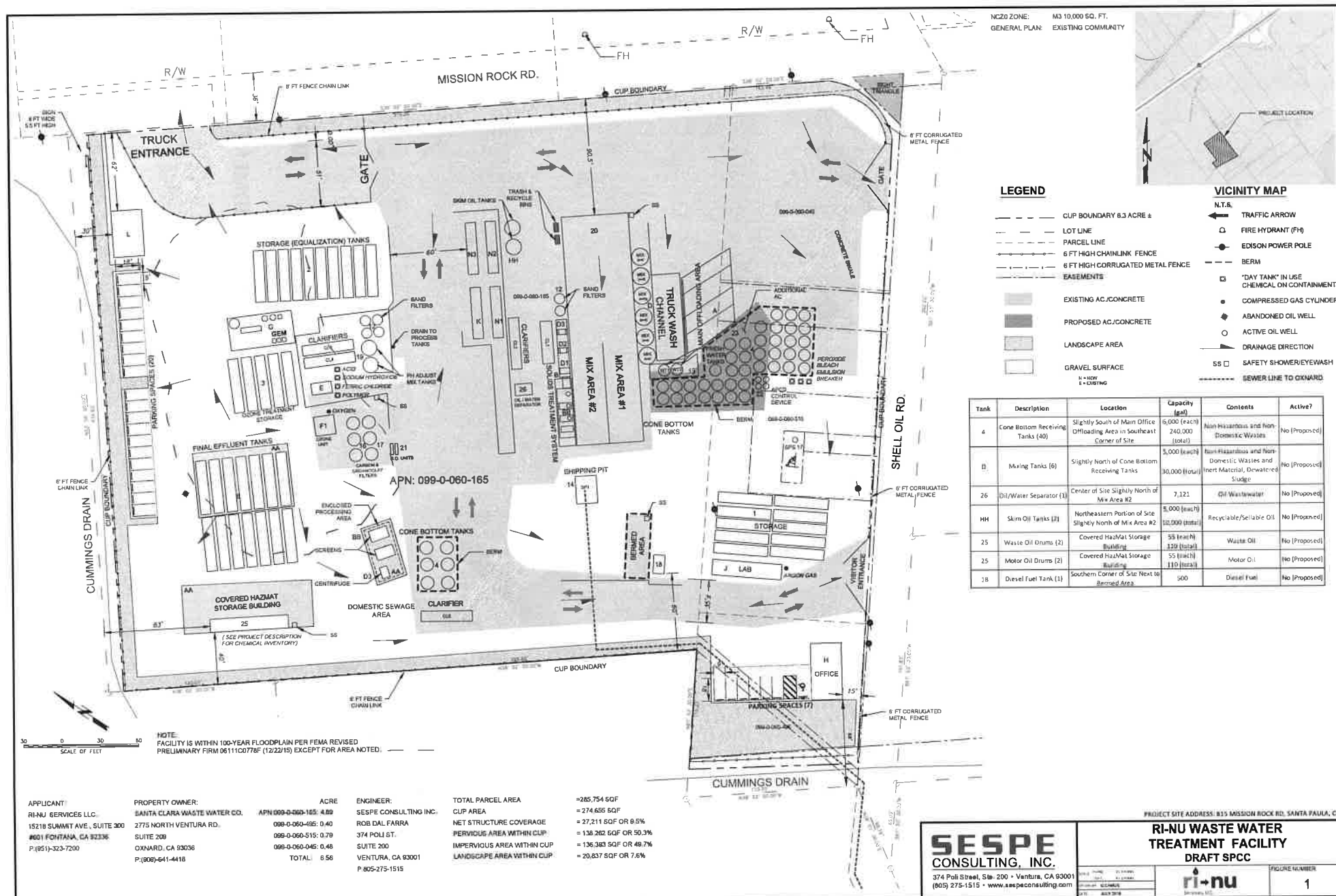
**7.3.5 Warning – 112.8(d)(5)**

There are no active oil-containing aboveground piping and other aboveground oil transfer equipment at the site.

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## **APPENDIX A**

### **FIGURES AND DRAWINGS**



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## **APPENDIX B**

### **REVISION AND AMENDMENT RECORD**

**SPILL PREVENTION, CONTROL, & COUNTERMEASURE PLAN –  
REVIEW FORM**

RI-NU Services, LLC

SPCC Plans must be reviewed every five (5) years. After completing the review, complete the statement below and, if necessary, update the SPCC. This Facility's aggregate aboveground oil storage capacity is greater than 10,000 gallons, so technical amendments to the SPCC **must** be certified by a Registered Professional Engineer. Non-technical amendments (e.g., changes in names and phone numbers, etc.) do not need to be certified by a Registered Professional Engineer and do not require certification of familiarity with the SPCC regulations.

Record all revisions to the SPCC Plan using the form on the following page.

I have completed a review and evaluation of the SPCC Plan for RI-NU Services, LLC on \_\_\_\_\_  
[date] and:

\_\_\_\_\_ Will update the plan

\_\_\_\_\_ Will not update the plan

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

## RI-NU Services, LLC

Record all modifications made to the SPCC Plan on this form. The SPCC Plan must be amended within 6 months of a Facility design change. A review and evaluation of the SPCC Plan must be conducted once every five (5) years.

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## **APPENDIX C**

### **TRAINING PLAN AND VERIFICATION FORM**

**SPILL PREVENTION, CONTROL, & COUNTERMEASURE PLAN –  
EMPLOYEE SPCC TRAINING/DISCHARGE PREVENTION BRIEFING**

RI-NU Services, LLC

**Purpose** To ensure that affected employees are aware of the SPCC and its requirements.

**Applicability** This training is required for personnel responsible for implementing the SPCC.

Review / discuss the following items during the training to ensure that employees are aware of SPCC requirements:

- \_\_\_\_\_ General Facility operations.
- \_\_\_\_\_ Operation and maintenance of equipment to prevent discharges.
- \_\_\_\_\_ Discharge response procedures including Personal Protective Equipment (PPE) and use of response equipment.
- \_\_\_\_\_ Applicable pollution control laws, rules and regulations. Discuss the fact that federal law requires that an SPCC Plan be prepared for facilities, which store more than 1,320 gallons of oil in Aboveground Storage Tanks.
- \_\_\_\_\_ The contents of this Spill Prevention Control and Countermeasure Plan (SPCC) Plan.
- \_\_\_\_\_ Review the hazards of materials stored (oil products) and an SDS for each material.
- \_\_\_\_\_ Fire safety and the use of personal protection equipment (PPE).
- \_\_\_\_\_ The requirement that spills be contained on-site whenever possible.
- \_\_\_\_\_ Spills that have occurred at the Facility.
- \_\_\_\_\_ Historical failures of equipment and malfunctioning equipment.
- \_\_\_\_\_ Recently developed precautionary measures.
- \_\_\_\_\_ (For Employees who will be conducting inspections). Review the inspection checklist and discuss how and when it must be completed.
- \_\_\_\_\_ Ask if employees have questions about the SPCC or their responsibilities.
- \_\_\_\_\_ Complete the *Employee SPCC Training Verification Form / Discharge Prevention Briefing Log*.

**SPILL PREVENTION, CONTROL, & COUNTERMEASURE PLAN –  
EMPLOYEE SPCC TRAINING FORM/DISCHARGE PREVENTION BRIEFING LOG**

RI-NU Services, LLC

I hereby certify that I have conducted SPCC Training with the undersigned employees.

**Instructor Name**

**Signature**

**Date**

_____	_____	_____
_____	_____	_____

I hereby certify that I have received SPCC Training / Discharge Prevention Briefing. I am familiar with the procedures outlined in and requirements of the SPCC Plan.

**Employee Name**

**Signature**

**Date**

_____	_____	_____
_____	_____	_____
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## **APPENDIX D**

### **MONTHLY AND ANNUAL INSPECTION AND LOG SHEETS**

**SPILL PREVENTION, CONTROL, & COUNTERMEASURE PLAN –  
MONTHLY INSPECTION FORM**  
RI-NU Services, LLC

Date Inspected: \_\_\_\_\_

Be sure to look at the entire tank, aboveground piping, and piping supports.

Tank	Contents	Size (gal.)	Location	Check if in good condition*			Comments
				Containers	Secondary Containment?	Valves, piping, hoses, gaskets, seals	
Cone Bottom Receiving Tanks (40)	Waste Water Containing Oil	6,000 each	Slightly South of Main Office Offloading Area in Southeast Corner of Site				
Mix Tanks (6)	Waste Water Containing Oil	5,000 each	Slightly North of Cone Bottom Receiving Tanks				
Oil/Water Separator (1)	Waste Water Containing Oil	7,121 each	Center of Site Slightly North of Mix Area #2				
Skim Oil tanks (2)	Skimmed Oil	5,000 each	Northeastern Portion of Site Slightly North of Mix Area #2				
Diesel Tank (1)	Diesel	500 each	Southern Corner of Site Next to Bermed Area				
Drums (4)	Waste Oil and Motor Oil	55 each	Covered HazMat Storage Building				

\* "Good condition" means no cuts, tears, excess corrosion, or other signs of deterioration that could cause a release.

Form continues on backside.

**Check spill kits and replace missing items:**

☐ Drum

☐ Absorbent Socks

☐ Absorbent Pillows

☐ Particulate

☐ Gloves

☐ Bags and Labels

**Comments or repairs conducted as a result of inspection:**

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Inspector \_\_\_\_\_

Signature \_\_\_\_\_

## STI SP001 Annual Inspection Checklist

### General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Tanks Inspected (ID #'s): _____	

### Inspection Guidance:

- For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- Remove promptly upon discovery standing water or liquid in the primary tank, secondary containment area, interstice, or spill container. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.
- In order to comply with EPA SPCC (Spill Prevention, Control and Countermeasure) rules, a facility must regularly test liquid level sensing devices to ensure proper operation (40 CFR 112.8(c)(8)(v)).
- (\*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.
- Complete this checklist on an annual basis supplemental to the owner monthly-performed inspection checklists.
- **Note: If a change has occurred to the tank system or containment that may affect the SPCC plan, the condition should be evaluated against the current plan requirement by a Professional Engineer knowledgeable in SPCC development and implementation.**

Item	Task	Status	Comments
<b>1.0 Tank Containment</b>			
1.1 Containment structure	Check for: <ul style="list-style-type: none"> <li>Holes or cracks in containment wall or floor</li> <li>Washout</li> <li>Liner degradation</li> <li>Corrosion</li> <li>Leakage</li> <li>Paint failure</li> <li>Tank settling</li> </ul>	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>2.0 Tank Foundation and Supports</b>			
2.1 Foundation	Settlement or foundation washout?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.2 Concrete pad or ring wall	Cracking or spalling?	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	

Item	Task	Status	Comments
2.3 Supports	Check for corrosion, paint failure, etc.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
2.4 Water drainage	Water drains away from tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
2.5 Tank grounding	Strap secured and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
<b>3.0 Cathodic Protection</b>			
3.1 Galvanic cathodic protection system	Confirm system is functional, includes the wire connections for galvanic systems	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
3.2 Impressed current system	a. Inspect the operational components (power switch, meters, and alarms).	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Record hour meter, ammeter and voltmeter readings.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
<b>4.0 Tank Shell, Heads, Roof</b>			
4.1 Coating	Check for coating failure	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
4.2 Steel condition	Check for: <ul style="list-style-type: none"> <li>• Dents</li> <li>• Buckling</li> <li>• Bulging</li> <li>• Corrosion</li> <li>• Cracking</li> </ul>	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
4.3 Roof slope	Check for low points and standing water	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>5.0 Tank Equipment</b>			
5.1 Vents	Verify that components are moving freely and vent passageways are not obstructed for: <ul style="list-style-type: none"> <li>• Emergency vent covers</li> <li>• Pressure/vacuum vent poppets</li> <li>• Other moving vent components</li> </ul>	<input type="checkbox"/> Yes* <input type="checkbox"/> No	

Item	Task	Status	Comments
5.2 Valves	Check the condition of all valves for leaks, corrosion and damage.	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
5.2.1 Anti-siphon, check and gate valves	Cycle the valve open and closed and check for proper operation.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.2 Pressure regulator valve	Check for proper operation. (Note that there may be small, 1/4 inch drain plugs in the bottom of the valve that are not visible by looking from above only)	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.3 Expansion relief valve	Check that the valve is in the proper orientation. (Note that fuel must be discharged back to the tank via a separate pipe or tubing.)	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.4 Solenoid valves	Cycle power to valve to check operation. (Electrical solenoids can be verified by listening to the plunger opening and closing. If no audible confirmation, the valve should be inspected for the presence and operation of the plunger.)	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.5 Fire and shear valves	a. Manually cycle the valve to ensure components are moving freely and that the valve handle or lever has clearance to allow valve to close completely.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Valves must not be wired in open position.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	

Item	Task	Status	Comments
	c. Make sure fusible element is in place and correctly positioned.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	d. Be sure test ports are sealed with plug after testing is complete and no temporary test fixture or component remains connected to valve.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.3 Interstitial leak detection equipment	Check condition of equipment, including: <ul style="list-style-type: none"> <li>• The window is clean and clear in sight leak gauges.</li> <li>• The wire connections of electronic gauges for tightness and corrosion</li> <li>• Activate the test button, if applicable.</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.4 Spill containment boxes on fill pipe	a. If corrosion, damage, or wear has compromised the ability of the unit to perform spill containment functions, replace the unit.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
	b. Inspect the connections to the AST for tightness, as well as the bolts, nuts, washers for condition and replace if necessary.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
	c. Drain valves must be operable and closed	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
5.5 Strainer	a. Check that the strainer is clean and in good condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	

Item	Task	Status	Comments
5.5 Strainer	b. Access strainer basket and check cap and gasket seal as well as bolts.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.6 Filter	a. Check that the filter is in good condition and is within the manufacturer's expected service life. Replace, if necessary.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Check for leaks and decreased fuel flow	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.7 Flame arrestors	Follow manufacturer's instructions. Check for corrosion and blockage of air passages.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
5.8 Leak detector for submersible pump systems	Test according to manufacturer's instructions and authority having jurisdiction (AHJ). Verify leak detectors are suited and properly installed for aboveground use.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.9 Liquid level equipment	a. Has equipment been tested to ensure proper operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Does equipment operate as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	c. Follow manufacturer's instructions	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.10 Overfill equipment	a. Follow manufacturer's instructions and regulatory requirements for inspection and functionality verification.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Confirm device is suited for above ground use by the manufacturer	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	



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## **APPENDIX E**

### **AST REGULATIONS California Aboveground Petroleum Storage Act 40 CFR 112 – Oil Pollution Prevention**

# HEALTH AND SAFETY CODE

## SECTION 25270-25270.13

25270. This chapter shall be known and may be cited as the Aboveground Petroleum Storage Act.

25270.2. For purposes of this chapter, the following definitions apply:

(a) "Aboveground storage tank" or "storage tank" means a tank that has the capacity to store 55 gallons or more of petroleum that is substantially or totally above the surface of the ground, except that, for purposes of this chapter, "aboveground storage tank" or "storage tank" includes a tank in an underground area. "Aboveground storage tank" does not include any of the following:

(1) A pressure vessel or boiler that is subject to Part 6 (commencing with Section 7620) of Division 5 of the Labor Code.

(2) A tank containing hazardous waste or extremely hazardous waste, as respectively defined in Sections 25117 and 25115, if the Department of Toxic Substances Control has issued the person owning or operating the tank a hazardous waste facilities permit for the storage tank.

(3) An aboveground oil production tank that is subject to Section 3106 of the Public Resources Code.

(4) Oil-filled electrical equipment, including, but not limited to, transformers, circuit breakers, or capacitors, if the oil-filled electrical equipment meets either of the following conditions:

(A) The equipment contains less than 10,000 gallons of dielectric fluid.

(B) The equipment contains 10,000 gallons or more of dielectric fluid with PCB levels less than 50 parts per million, appropriate containment or diversionary structures or equipment are employed to prevent discharged oil from reaching a navigable water course, and the electrical equipment is visually inspected in accordance with the usual routine maintenance procedures of the owner or operator.

(5) A tank regulated as an underground storage tank under Chapter 6.7 (commencing with Section 25280) of this division and Chapter 16 (commencing with Section 2610) of Division 3 of Title 23 of the California Code of Regulations and that does not meet the definition of a tank in an underground area.

(6) A transportation-related tank facility, subject to the authority and control of the United States Department of Transportation, as defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the United States Environmental Protection Agency, as set forth in Appendix A to Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations.

(7) A tank or tank facility located on and operated by a farm that is exempt from the federal spill prevention, control, and countermeasure rule requirements pursuant to Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations.

(b) "Board" means the State Water Resources Control Board.

(c) (1) "Certified Unified Program Agency" or "CUPA" means the agency certified by the Secretary for Environmental Protection to implement the unified program specified in Chapter 6.11 (commencing with Section 25404) within a jurisdiction.

(2) "Participating Agency" or "PA" means an agency that has a written agreement with the CUPA pursuant to subdivision (d) of Section 25404.3, and is approved by the secretary, to implement and enforce the unified program element specified in paragraph (2) of subdivision (c) of Section 25404, in accordance with Sections 25404.1 and 25404.2.

(3) (A) "Unified Program Agency" or "UPA" means the CUPA, or its participating agencies to the extent that each PA has been designated by the CUPA, pursuant to a written agreement, to implement and enforce the unified program element specified in paragraph (2) of subdivision (c) of Section 25404. The UPAs have the responsibility and authority, to the extent provided by

this chapter and Sections 25404.1 to 25404.2, inclusive, to implement and enforce the requirements of this chapter.

(B) After a CUPA has been certified by the secretary, the unified program agency shall be the only agency authorized to enforce the requirements of this chapter.

(C) This paragraph does not limit the authority or responsibility granted to the office, the board, and the regional boards by this chapter.

(d) "Office" means the Office of the State Fire Marshal.

(e) "Operator" means the person responsible for the overall operation of a tank facility.

(f) "Owner" means the person who owns the tank facility or part of the tank facility.

(g) "Person" means an individual, trust, firm, joint stock company, corporation, including a government corporation, partnership, limited liability company, or association. "Person" also includes any city, county, district, the University of California, the California State University, the state, any department or agency thereof, and the United States, to the extent authorized by federal law.

(h) "Petroleum" means crude oil, or a fraction thereof, that is liquid at 60 degrees Fahrenheit temperature and 14.7 pounds per square inch absolute pressure.

(i) "Regional board" means a California regional water quality control board.

(j) "Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, escaping, leaching, or disposing into the environment.

(k) "Secretary" means the Secretary for Environmental Protection.

(l) "Storage" or "store" means the containment, handling, or treatment of petroleum, for a period of time, including on a temporary basis.

(m) "Storage capacity" means the aggregate capacity of all aboveground storage tanks at a tank facility.

(n) "Tank facility" means one or more aboveground storage tanks, including any piping that is integral to the tanks, that contain petroleum and that are used by an owner or operator at a single location or site.

For purposes of this chapter, a pipe is integrally related to an aboveground storage tank if the pipe is connected to the tank and meets any of the following:

(1) The pipe is within the dike or containment area.

(2) The pipe is between the containment area and the first flange or valve outside the containment area.

(3) The pipe is connected to the first flange or valve on the exterior of the tank, if state or federal law does not require a containment area.

(4) The pipe is connected to a tank in an underground area.

(o) (1) "Tank in an underground area" means a storage tank to which all of the following apply:

(A) The storage tank is located in a structure that is at least 10 percent below the ground surface, including, but not limited to, a basement, cellar, shaft, pit, or vault.

(B) The structure in which the storage tank is located, at a minimum, provides for secondary containment of the contents of the tank, piping, and ancillary equipment, until cleanup occurs. A shop-fabricated double-walled storage tank with a mechanical or electronic device used to detect leaks in the interstitial space meets the requirement for secondary containment of the contents of the tank.

(C) The storage tank meets one or more of the following conditions:

(i) The storage tank contains petroleum to be used or previously used as a lubricant or coolant in a motor engine or transmission, oil-filled operational equipment, or oil-filled manufacturing equipment, is situated on or above the surface of the floor, and the structure in which the tank is located provides enough space for direct viewing of the exterior of the tank except for the part of the tank in contact with the surface of the floor.

(ii) The storage tank only contains petroleum that is determined to be a hazardous waste, complies with the hazardous waste tank standards pursuant to Article 10 (commencing with Section 66265.190) of Chapter 15 of Title 22 of the California Code of Regulations as it may be amended, and the tank facility has been issued a unified program facility permit pursuant to Section 25404.2 for generation, treatment, accumulation, or storage of hazardous waste.

(iii) The storage tank contains petroleum and is used solely in connection with a fire pump or an emergency system, legally required standby system, or optional standby system as defined in the most recent version of the California Electrical Code (Section 700.2 of Article 700, Section 701.2 of Article 701, and Section 702.2 of Article 702, of Chapter 7 of

Part 3 of Title 24 of the California Code of Regulations), is situated on or above the surface of the floor, and the structure in which the tank is located provides enough space for direct viewing of the exterior of the tank except for the part of the tank in contact with the surface of the floor.

(iv) The storage tank does not meet the conditions in clauses (i), (ii), or (iii), but meets all of the following conditions:

(I) It contains petroleum.

(II) It is situated on or above the surface of the floor.

(III) The structure in which the tank is located provides enough space for direct viewing of the exterior of the tank, except for the part of the tank in contact with the surface of the floor, and all piping connected to the tank, including any portion of a vent line, vapor recovery line, or fill pipe that is beneath the surface of the ground, and all ancillary equipment, can either be visually inspected by direct viewing or has both secondary containment and leak detection that meet the requirements of the regulations adopted by the office pursuant to Section 25270.4.1.

(2) For a shop-fabricated double-walled storage tank, direct viewing of the exterior of the tank is not required under paragraph (1) if inspections of the interstitial space are performed or if it has a mechanical or electronic device that will detect leaks in the interstitial space.

(3) (A) A storage tank in an underground area is not subject to Chapter 6.7 (commencing with Section 25280) if the storage tank meets the definition of a tank in an underground area, as provided in paragraph (1) and, except as specified in subparagraph (B), the regulations that apply to all new and existing tanks in underground areas and buried piping connected to tanks in underground areas have been adopted by the office pursuant to Section 25270.4.1.

(B) A storage tank meeting the description of clause (i) of subparagraph (C) of paragraph (1) shall continue to be subject to this chapter, and excluded from the definition of an underground storage tank in Chapter 6.7 (commencing with Section 25280), before and after the date the regulations specific to tanks in underground areas have been adopted by the office.

(p) "Viewing" means visual inspection, and "direct viewing" means, in regard to a storage tank, direct visual inspection of the exterior of the tank, except for the part of the tank in contact with the surface of the floor, and, where applicable, the entire length of all piping and ancillary equipment, including all exterior surfaces, by a person or through the use of visual aids, including, but not limited to, mirrors, cameras, or video equipment.

25270.3. A tank facility is subject to this chapter if any of the following apply:

(a) The tank facility is subject to the oil pollution prevention regulations specified in Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations.

(b) The tank facility has a storage capacity of 1,320 gallons or more of petroleum.

(c) The tank facility has a storage capacity of less than 1,320 gallons of petroleum and has one or more tanks in an underground area meeting the conditions specified in paragraph (1) of subdivision (o) of Section 25270.2. If this subdivision is applicable, only tanks meeting the conditions specified in paragraph (1) of subdivision (o) of Section 25270.2 shall be included as storage tanks and subject to this chapter.

25270.4. This chapter shall be implemented by the Unified Program

Agency, in accordance with the regulations adopted by the office pursuant to Section 25270.4.1.

25270.4.1. (a) The office shall adopt regulations implementing this chapter. The office shall also provide interpretation of this chapter to the UPAs, and oversee the implementation of this chapter by the UPAs.

(b) The office shall establish an advisory committee that includes representatives from regulated entities, appropriate trade associations, fire service organizations, federal, state, and local organizations,

including UPAs, and other interested parties. The advisory committee shall act in an advisory capacity to the office in conducting its responsibilities.

(c) The office shall, in addition to any other requirements imposed pursuant to this chapter, train UPAs, ensure consistency with state law, to the maximum extent feasible, ensure consistency with federal enforcement guidance issued by federal agencies pursuant to subdivision (d), and support the UPAs in providing outreach to regulated persons regarding compliance with current local, state, and federal regulations relevant to the office's obligations under this chapter.

(d) Any regulation adopted by the office pursuant to this section shall ensure consistency with the requirements for spill prevention, control, and countermeasure plans under Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations, and shall include any more stringent requirements necessary to implement this chapter.

#### 25270.4.5.

(a) Except as provided in subdivision (b), each owner or operator of a storage tank at a tank facility subject to this chapter shall prepare a spill prevention control and countermeasure plan applying good engineering practices to prevent petroleum releases using the same format required by Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations, including owners and operators of tank facilities not subject to the general provisions in Section 112.1 of those regulations. Each owner or operator specified in this subdivision shall conduct periodic inspections of the storage tank to ensure compliance with Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations. In implementing the spill prevention control and countermeasure plan, each owner or operator specified in this subdivision shall fully comply with the latest version of the regulations contained in Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations.

(b) A tank facility located on and operated by a farm, nursery, logging site, or construction site is not subject to subdivision (a) if no storage tank at the location exceeds 20,000 gallons and the cumulative storage capacity of the tank facility does not exceed 100,000 gallons. Unless excluded from the definition of an "aboveground storage tank" in Section 25270.2, the owner or operator of a tank facility exempt pursuant to this subdivision shall take the following actions:

(1) Conduct a daily visual inspection of any storage tank storing petroleum. For purposes of this section, "daily" means every day that contents are added to or withdrawn from the tank, but no less than five days per week. The number of days may be reduced by the number of state or federal holidays that occur during the week if there is no addition to, or withdrawal from, the tank on the holiday. The unified program agency may reduce the frequency of inspections to not less than once every three days at a tank facility that is exempt pursuant to this section if the tank facility is not staffed on a regular basis, provided that the inspection is performed every day the facility is staffed.

(2) Allow the UPA to conduct a periodic inspection of the tank facility.

(3) If the UPA determines installation of secondary containment is necessary for the protection of the waters of the state, install a secondary means of containment for each tank or group of tanks where the secondary containment will, at a minimum, contain the entire contents of the largest tank protected by the secondary containment plus precipitation.

#### 25270.5.

(a) Except as provided in subdivision (b), at least once every three years, the UPA shall inspect each storage tank or a representative sampling of the storage tanks at each tank facility that has a storage capacity of 10,000 gallons or more of petroleum. The purpose of the inspection shall be to determine whether the owner or operator is in compliance with the spill prevention control and countermeasure plan requirements of this chapter.

(b) The UPA may develop an alternative inspection and compliance plan, subject to approval by the secretary and the office.

(c) An inspection conducted pursuant to this section does not require the oversight of a professional engineer. The person conducting the inspection shall complete and pass the initial aboveground storage tank inspector training program. The curriculum of the aboveground storage tank inspector training program shall focus on the spill prevention control and countermeasure plan provisions and safety requirements for aboveground storage tank inspections.

25270.6.

- (a) (1) On or before January 1, 2009, and on or before January 1 annually thereafter, each owner or operator of a tank facility subject to this chapter shall file with the statewide information management system, a tank facility statement that shall identify the name and address of the tank facility, a contact person for the tank facility, the total storage capacity of the tank facility, and the location and contents of each petroleum storage tank that exceeds 10,000 gallons in storage capacity. A copy of a statement submitted previously pursuant to this section may be submitted in lieu of a new tank facility statement if no new or used storage tanks have been added to the facility or if no significant modifications have been made. For purposes of this section, a significant modification includes, but is not limited to, altering existing storage tanks or changing spill prevention or containment methods.
- (2) Notwithstanding paragraph (1), an owner or operator of a tank facility that submits a business plan, as defined in subdivision (d) of Section 25501, to the statewide information management system and that complies with Sections 25503, 25505, 25505.1, 25507, 25507.2, 25508, 25508.1, and 25508.2, satisfies the requirement in paragraph (1) to file a tank facility statement.
- (b) Each year, commencing in calendar year 2010, each owner or operator of a tank facility who is subject to the requirements of subdivision (a) shall pay a fee to the UPA, on or before a date specified by the UPA. The governing body of the UPA shall establish a fee, as part of the single fee system implemented pursuant to Section 25404.5, at a level sufficient to pay the necessary and reasonable costs incurred by the UPA in administering this chapter, including, but not limited to, inspections, enforcement, and administrative costs. The UPA shall also implement the fee accountability program established pursuant to subdivision (c) of Section 25404.5 and the regulations adopted to implement that program.

25270.8. Each owner or operator of a tank facility shall immediately, upon discovery, notify the Office of Emergency Services and the UPA using the appropriate 24-hour emergency number or the 911 number, as established by the UPA, or by the governing body of the UPA, of the occurrence of a spill or other release of one barrel (42 gallons) or more of petroleum that is required to be reported pursuant to subdivision (a) of Section 13272 of the Water Code.

25270.9.

- (a) The board and the regional board may oversee cleanup or abatement efforts, or cause cleanup or abatement efforts, of a release from a storage tank at a tank facility.
- (b) The reasonable expenses of the board and the regional board incurred in overseeing, or contracting for, cleanup or abatement efforts that result from a release at a tank facility is a charge against the owner or operator of the tank facility. Expenses reimbursable to a public agency under this section are a debt of the tank facility owner or operator, and shall be collected in the same manner as in the case of an obligation under a contract, express or implied.
- (c) Expenses recovered by the board or a regional board pursuant to this section shall be deposited into the Waste Discharge Permit Fund. These moneys shall be separately accounted for, and shall be expended by the board, upon appropriation by the Legislature, to assist regional boards and other public agencies with authority to clean up waste or abate the effects of the waste, in cleaning up or abating the effects of the waste on waters of the state, or for the purposes authorized in Section 13443 of the Water Code.

25270.12.

(a) Any owner or operator of a tank facility who fails to prepare a spill prevention control and countermeasure plan in compliance with subdivision (a) of Section 25270.4.5, to file a tank facility statement pursuant to subdivision (a) of Section 25270.6, to submit the fee required by subdivision (b) of Section 25270.6, or to report spills as required by Section 25270.8, or who otherwise fails to comply with the requirements of this chapter, is subject to a civil penalty of not more than five thousand dollars (\$5,000) for each day on which the violation continues. If the owner or operator commits a second or subsequent violation, a civil penalty of not more than ten thousand dollars (\$10,000) for each day on which the violation continues may be imposed.

(b) (1) The civil penalties provided by this section may be assessed and recovered in a civil action brought by the city attorney or district attorney on behalf of the UPA.

(2) Fifty percent of all penalties assessed and recovered in a civil action brought on behalf of a UPA pursuant to this subdivision shall be deposited into a unified program account established by the UPA for the purpose of carrying out the functions of the unified program and 50 percent shall be paid to the office of the city attorney or district attorney, whoever brought that action.

(c) (1) The civil penalties provided in this section may be assessed and recovered in a civil action brought by the Attorney General on behalf of the office, the board, or a regional board, or on behalf of the people of the State of California.

(2) All penalties assessed and recovered in a civil action brought pursuant to this subdivision shall be deposited in the Waste Discharge Permit Fund created pursuant to Section 13260 of the Water Code. These moneys shall be separately accounted for, and shall be expended by the board, upon appropriation by the Legislature, to assist regional boards and other public agencies with authority to clean up waste or abate the effects of the waste, in cleaning up or abating the effects of the waste on waters of the state, or for the same purposes for which the State Water Pollution Cleanup and Abatement Account may be expended pursuant to Section 13443 of the Water Code.

(d) The city attorney, district attorney, or the Attorney General may seek to enjoin, in any court of competent jurisdiction, any person believed to be in violation of this chapter.

(e) The penalties specified in this section are in addition to any other penalties provided by law.

25270.12.1.

(a) An owner or operator of a tank facility who fails to prepare a spill prevention control and countermeasure plan in compliance with subdivision (a) of Section 25270.4.5, to file a tank facility statement pursuant to subdivision (a) of Section 25270.6, to submit the fee required by subdivision (b) of Section 25270.6, or to report spills as required by Section 25270.8, or who otherwise fails to comply with the requirements of this chapter is liable to the UPA for an administrative penalty of not more than five thousand dollars (\$5,000) for each day on which the violation continues. If the owner or operator commits a second or subsequent violation, an administrative penalty of not more than ten thousand dollars (\$10,000) for each day on which the violation continues may be imposed.

(b) The administrative penalties assessed by a UPA shall be deposited into a unified program account established by the UPA for the purpose of carrying out the functions of the unified program.

(c) When a UPA issues an enforcement order or assesses an administrative penalty, or both, for a violation of this chapter, the administering agency shall utilize the administrative enforcement procedures specified in Sections 25404.1.1 and 25404.1.2.

(d) The administrative penalties specified in this section are in addition to any other penalties provided by law, except for a violation for which a civil penalty under Section 25270.12 has already been imposed for the same violation.

25270.12.5.

(a) A person who knowingly violates Section 25270.4.5, 25270.6, or 25270.8 after reasonable notice of the violation is, upon conviction, guilty of a misdemeanor.

(b) This section does not preempt any other applicable criminal or civil penalties.

25270.13.

(a) This chapter does not preempt local storage tank ordinances, in effect as of August 16, 1989, that meet or exceed the standards prescribed by this chapter.

(b) This chapter does not preempt the authority granted to the board and the regional boards under the Porter Cologne Water Quality Control Act (Division 7 (commencing with Section 13000) of the Water Code).

## **40 CFR 112**

### **§112.1 General applicability.**

- (a) (1) This part establishes procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act).

(2) As used in this part, words in the singular also include the plural and words in the masculine gender also include the feminine and vice versa, as the case may require.

(b) Except as provided in paragraph (d) of this section, this part applies to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which due to its location, could reasonably be expected to discharge oil in quantities that may be harmful, as described in part 110 of this chapter, into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act) that has oil in:

- (1) Any aboveground container;
- (2) Any completely buried tank as defined in §112.2;
- (3) Any container that is used for standby storage, for seasonal storage, or for temporary storage, or not otherwise "permanently closed" as defined in §112.2;
- (4) Any "bunkered tank" or "partially buried tank" as defined in §112.2, or any container in a vault, each of which is considered an aboveground storage container for purposes of this part.

(c) As provided in section 313 of the Clean Water Act (CWA), departments, agencies, and instrumentalities of the Federal government are subject to this part to the same extent as any person.

(d) Except as provided in paragraph (f) of this section, this part does not apply to:

(1) The owner or operator of any facility, equipment, or operation that is not subject to the jurisdiction of the Environmental Protection Agency (EPA) under section 311(j)(1)(C) of the CWA, as follows:

- (i) Any onshore or offshore facility, that due to its location, could not reasonably be expected to have a discharge as described in paragraph (b) of this section. This determination must be based solely upon consideration of the geographical and location aspects of the facility (such as proximity to navigable waters or adjoining shorelines, land contour, drainage, etc.) and must exclude consideration of manmade features such as dikes, equipment or other structures, which may serve to restrain, hinder, contain, or otherwise prevent a discharge as described in paragraph (b) of this section.

(ii) Any equipment, or operation of a vessel or transportation-related onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation, as defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of EPA, dated November 24, 1971 (appendix A of this part).

(iii) Any equipment, or operation of a vessel or onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation or the U.S. Department of the Interior, as defined in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (appendix B of this part).

(2) Any facility which, although otherwise subject to the jurisdiction of EPA, meets both of the following requirements:

(i) The completely buried storage capacity of the facility is 42,000 U.S. gallons or less of oil. For purposes of this exemption, the completely buried storage capacity of a facility excludes the capacity of a completely buried tank, as defined in §112.2, and connected underground piping, underground ancillary equipment, and containment systems, that is currently subject to all of the technical requirements of part 280 of this chapter or all of the technical requirements of a State program approved under part 281 of this chapter, or the capacity of any underground oil storage tanks deferred under 40 CFR part 280 that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission and subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. The completely buried storage capacity of a facility also excludes the capacity of a container that is "permanently closed," as defined in §112.2 and the capacity of intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195.

(ii) The aggregate aboveground storage capacity of the facility is 1,320 U.S. gallons or less of oil. For the purposes of this exemption, only containers with a capacity of 55 U.S. gallons or greater are counted. The aggregate aboveground storage capacity of a facility excludes:

(A) The capacity of a container that is "permanently closed" as defined in §112.2;

(B) The capacity of a "motive power container" as defined in §112.2;

(C) The capacity of hot-mix asphalt or any hot-mix asphalt container;

(D) The capacity of a container for heating oil used solely at a single-family residence;

(E) The capacity of pesticide application equipment and related mix containers.

(F) The capacity of any milk and milk product container and associated piping and appurtenances.

(3) Any offshore oil drilling, production, or workover facility that is subject to the notices and regulations of the Minerals Management Service, as specified in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (appendix B of this part).

(4) Any completely buried storage tank, as defined in §112.2, and connected underground piping, underground ancillary equipment, and containment systems, at any facility, that is subject to all of the technical requirements of part 280 of this chapter or a State program approved under part 281 of

this chapter, or any underground oil storage tanks including below-grade vaulted tanks, deferred under 40 CFR part 280, as originally promulgated, that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission, provided that such a tank is subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. Such emergency generator tanks must be marked on the facility diagram as provided in §112.7(a)(3), if the facility is otherwise subject to this part.

(5) Any container with a storage capacity of less than 55 gallons of oil.

(6) Any facility or part thereof used exclusively for wastewater treatment and not used to satisfy any requirement of this part. The production, recovery, or recycling of oil is not wastewater treatment for purposes of this paragraph.

(7) Any "motive power container," as defined in §112.2. The transfer of fuel or other oil into a motive power container at an otherwise regulated facility is not eligible for this exemption.

(8) Hot-mix asphalt, or any hot-mix asphalt container.

(9) Any container for heating oil used solely at a single-family residence.

(10) Any pesticide application equipment or related mix containers.

(11) Intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195, except that such a line's location must be identified and marked as "exempt" on the facility diagram as provided in §112.7(a)(3), if the facility is otherwise subject to this part.

(12) Any milk and milk product container and associated piping and appurtenances.

(e) This part establishes requirements for the preparation and implementation of Spill Prevention, Control, and Countermeasure (SPCC) Plans. SPCC Plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC Plan is to form a comprehensive Federal/State spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility. Compliance with this part does not in any way relieve the owner or operator of an onshore or an offshore facility from compliance with other Federal, State, or local laws.

(f) Notwithstanding paragraph (d) of this section, the Regional Administrator may require that the owner or operator of any facility subject to the jurisdiction of EPA under section 311(j) of the CWA prepare and implement an SPCC Plan, or any applicable part, to carry out the purposes of the CWA.

(1) Following a preliminary determination, the Regional Administrator must provide a written notice to the owner or operator stating the reasons why he must prepare an SPCC Plan, or applicable part. The Regional Administrator must send such notice to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of such notice to the registered agent, if any and if known, of the corporation in the State where the facility is located.

(2) Within 30 days of receipt of such written notice, the owner or operator may provide information and data and may consult with the Agency about the need to prepare an SPCC Plan, or applicable part.

(3) Within 30 days following the time under paragraph (b)(2) of this section within which the owner or operator may provide information and data and consult with the Agency about the need to prepare an SPCC Plan, or applicable part, the Regional Administrator must make a final determination regarding whether the owner or operator is required to prepare and implement an SPCC Plan, or applicable part. The Regional Administrator must send the final determination to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of the final determination to the registered agent, if any and if known, of the corporation in the State where the facility is located.

(4) If the Regional Administrator makes a final determination that an SPCC Plan, or applicable part, is necessary, the owner or operator must prepare the Plan, or applicable part, within six months of that final determination and implement the Plan, or applicable part, as soon as possible, but not later than one year after the Regional Administrator has made a final determination.

(5) The owner or operator may appeal a final determination made by the Regional Administrator requiring preparation and implementation of an SPCC Plan, or applicable part, under this paragraph. The owner or operator must make the appeal to the Administrator of EPA within 30 days of receipt of the final determination under paragraph (b)(3) of this section from the Regional Administrator requiring preparation and/or implementation of an SPCC Plan, or applicable part. The owner or operator must send a complete copy of the appeal to the Regional Administrator at the time he makes the appeal to the Administrator. The appeal must contain a clear and concise statement of the issues and points of fact in the case. In the appeal, the owner or operator may also provide additional information. The additional information may be from any person. The Administrator may request additional information from the owner or operator. The Administrator must render a decision within 60 days of receiving the appeal or additional information submitted by the owner or operator and must serve the owner or operator with the decision made in the appeal in the manner described in paragraph (f)(1) of this section.

## **§112.2 Definitions.**

For the purposes of this part:

**Adverse weather** means weather conditions that make it difficult for response equipment and personnel to clean up or remove spilled oil, and that must be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height as specified in appendix E to this part (as appropriate), ice conditions, temperatures, weather-related visibility, and currents within the area in which the systems or equipment is intended to function.

**Alteration** means any work on a container involving cutting, burning, welding, or heating operations that changes the physical dimensions or configuration of the container.

**Animal fat** means a non-petroleum oil, fat, or grease of animal, fish, or marine mammal origin.

**Breakout tank** means a container used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline.

**Bulk storage container** means any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container.

**Bunkered tank** means a container constructed or placed in the ground by cutting the earth and re-covering the container in a manner that breaks the surrounding natural grade, or that lies above grade,

and is covered with earth, sand, gravel, asphalt, or other material. A bunkered tank is considered an aboveground storage container for purposes of this part.

**Completely buried tank** means any container completely below grade and covered with earth, sand, gravel, asphalt, or other material. Containers in vaults, bunkered tanks, or partially buried tanks are considered aboveground storage containers for purposes of this part.

**Complex** means a facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the CWA.

**Contiguous zone** means the zone established by the United States under Article 24 of the Convention of the Territorial Sea and Contiguous Zone, that is contiguous to the territorial sea and that extends nine miles seaward from the outer limit of the territorial area.

**Contract or other approved means** means:

- (1) A written contractual agreement with an oil spill removal organization that identifies and ensures the availability of the necessary personnel and equipment within appropriate response times; and/or
- (2) A written certification by the owner or operator that the necessary personnel and equipment resources, owned or operated by the facility owner or operator, are available to respond to a discharge within appropriate response times; and/or
- (3) Active membership in a local or regional oil spill removal organization that has identified and ensures adequate access through such membership to necessary personnel and equipment to respond to a discharge within appropriate response times in the specified geographic area; and/or
- (4) Any other specific arrangement approved by the Regional Administrator upon request of the owner or operator.

**Discharge** includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under section 402 of the CWA; discharges resulting from circumstances identified, reviewed, and made a part of the public record with respect to a permit issued or modified under section 402 of the CWA, and subject to a condition in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems. For purposes of this part, the term discharge shall not include any discharge of oil that is authorized by a permit issued under section 13 of the River and Harbor Act of 1899 (33 U.S.C. 407).

**Facility** means any mobile or fixed, onshore or offshore building, property, parcel, lease, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and oil waste treatment, or in which oil is used, as described in appendix A to this part. The boundaries of a facility depend on several site-specific factors, including but not limited to, the ownership or operation of buildings, structures, and equipment on the same site and types of activity at the site. Contiguous or non-contiguous buildings, properties, parcels, leases, structures, installations, pipes, or pipelines under the ownership or operation of the same person may be considered separate facilities. Only this definition governs whether a facility is subject to this part.

**Farm** means a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during a year.

**Fish and wildlife and sensitive environments** means areas that may be identified by their legal designation or by evaluations of Area Committees (for planning) or members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include wetlands, National and State parks, critical habitats for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, wildlife refuges, wild and scenic rivers, recreational areas, national forests, Federal and State lands that are research national areas, heritage program areas, land trust areas, and historical and archaeological sites and parks. These areas may also include unique habitats such as aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats.

**Injury** means a measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge, or exposure to a product of reactions resulting from a discharge.

**Loading/unloading rack** means a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of this part. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.

**Maximum extent practicable** means within the limitations used to determine oil spill planning resources and response times for on-water recovery, shoreline protection, and cleanup for worst case discharges from onshore non-transportation-related facilities in adverse weather. It includes the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets the requirements in §112.20 or in a specific plan approved by the Regional Administrator.

**Mobile refueler** means a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container.

**Motive power container** means any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. An onboard bulk storage container which is used to store or transfer oil for further distribution is not a motive power container. The definition of motive power container does not include oil drilling or workover equipment, including rigs.

**Navigable waters** of the United States means "navigable waters" as defined in section 502(7) of the FWPCA, and includes:

- (1) All navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92-500), and tributaries of such waters;
- (2) Interstate waters;
- (3) Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and

(4) Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

**Non-petroleum oil** means oil of any kind that is not petroleum-based, including but not limited to: Fats, oils, and greases of animal, fish, or marine mammal origin; and vegetable oils, including oils from seeds, nuts, fruits, and kernels.

**Offshore facility** means any facility of any kind (other than a vessel or public vessel) located in, on, or under any of the navigable waters of the United States, and any facility of any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters.

**Oil** means oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

**Oil-filled operational equipment** means equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (e.g., those for pumps, compressors and other rotating equipment, including pump jack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device.

**Oil Spill Removal Organization** means an entity that provides oil spill response resources, and includes any for-profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provide required response resources.

**Onshore facility** means any facility of any kind located in, on, or under any land within the United States, other than submerged lands.

**Owner or operator** means any person owning or operating an onshore facility or an offshore facility, and in the case of any abandoned offshore facility, the person who owned or operated or maintained the facility immediately prior to such abandonment.

**Partially buried tank** means a storage container that is partially inserted or constructed in the ground, but not entirely below grade, and not completely covered with earth, sand, gravel, asphalt, or other material. A partially buried tank is considered an aboveground storage container for purposes of this part.

**Permanently closed** means any container or facility for which:

- (1) All liquid and sludge has been removed from each container and connecting line; and
- (2) All connecting lines and piping have been disconnected from the container and blanked off, all valves (except for ventilation valves) have been closed and locked, and conspicuous signs have been posted on each container stating that it is a permanently closed container and noting the date of closure.

**Person** includes an individual, firm, corporation, association, or partnership.

**Petroleum oil** means petroleum in any form, including but not limited to crude oil, fuel oil, mineral oil, sludge, oil refuse, and refined products.

**Produced water container** means a storage container at an oil production facility used to store the produced water after initial oil/water separation, and prior to reinjection, beneficial reuse, discharge, or transfer for disposal.

**Production facility** means all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flow lines or intra-facility gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation-related equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of oil (including condensate), or associated storage or measurement, and is located in an oil or gas field, at a facility. This definition governs whether such structures, piping, or equipment are subject to a specific section of this part.

**Regional Administrator** means the Regional Administrator of the Environmental Protection Agency, in and for the Region in which the facility is located.

**Repair** means any work necessary to maintain or restore a container to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the container and that does not weaken the container.

**Spill Prevention, Control, and Countermeasure Plan; SPCC Plan, or Plan** means the document required by §112.3 that details the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to a discharge.

**Storage capacity** of a container means the shell capacity of the container.

**Transportation-related and non-transportation-related**, as applied to an onshore or offshore facility, are defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the Environmental Protection Agency, dated November 24, 1971, (appendix A of this part).

**United States** means the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the U.S. Virgin Islands, and the Pacific Island Governments.

**Vegetable oil** means a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels.

**Vessel** means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel.

**Wetlands** means those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

**Worst case discharge** for an onshore non-transportation-related facility means the largest foreseeable discharge in adverse weather conditions as determined using the worksheets in appendix D to this part.

**§112.3 Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan.**

The owner or operator of an onshore or offshore facility subject to this section must prepare in writing and implement a Spill Prevention Control and Countermeasure Plan (hereafter "SPCC Plan" or "Plan"), in accordance with §112.7 and any other applicable section of this part.

- (a) (1) Except as otherwise provided in this section, if your facility, or mobile or portable facility, was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2011. If such a facility becomes operational after August 16, 2002, through November 10, 2011, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan on or before November 10, 2011. If such a facility (excluding oil production facilities) becomes operational after November 10, 2011, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

- (2) If your drilling, production or workover facility, including a mobile or portable facility, is offshore or

has an offshore component; or your onshore facility is required to have and submit a Facility Response Plan pursuant to 40 CFR 112.20(a), and was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2010. If such a facility becomes operational after August 16, 2002, through November 10, 2010, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan on or before November 10, 2010. If such a facility (excluding oil production facilities) becomes operational after November 10, 2010, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

- (3) If your farm, as defined in §112.2, was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan on or before May 10, 2013. If your farm becomes operational after August 16, 2002, through May 10, 2013, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan on or before May 10, 2013. If your farm becomes operational after May 10, 2013, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan before you begin operations.

- (b) If your oil production facility as described in paragraph (a)(1) of this section becomes operational after November 10, 2011, or as described in paragraph (a)(2) of this section becomes operational after November 10, 2010, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan within six months after you begin operations.

- (c) [Reserved]

(d) Except as provided in §112.6, a **licensed Professional Engineer** must review and certify a Plan for it to be effective to satisfy the requirements of this part.

(1) By means of this certification the Professional Engineer attests:

- (i) That he is familiar with the requirements of this part;
- (ii) That he or his agent has visited and examined the facility;
- (iii) That the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part;
- (iv) That procedures for required inspections and testing have been established; and
- (v) That the Plan is adequate for the facility.
- (vi) That, if applicable, for a produced water container subject to §112.9(c)(6), any procedure to minimize the amount of free-phase oil is designed to reduce the accumulation of free-phase oil and the procedures and frequency for required inspections, maintenance and testing have been established and are described in the Plan.

(2) Such certification shall in no way relieve the owner or operator of a facility of his duty to prepare and fully implement such Plan in accordance with the requirements of this part.

(e) If you are the **owner or operator** of a facility for which a Plan is required under this section, you must:

- (1) Maintain a complete copy of the Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended, and
- (2) Have the Plan available to the Regional Administrator for on-site review during normal working hours.

(f) *Extension of time.*

(1) The Regional Administrator may authorize an extension of time for the preparation and full implementation of a Plan, or any amendment thereto, beyond the time permitted for the preparation, implementation, or amendment of a Plan under this part, when he finds that the owner or operator of a facility subject to this section, cannot fully comply with the requirements as a result of either no availability of qualified personnel, or delays in construction or equipment delivery beyond the control and without the fault of such owner or operator or his agents or employees.

(2) If you are an owner or operator seeking an extension of time under paragraph (f)(1) of this section, you may submit a written extension request to the Regional Administrator. Your request must include:

- (i) A full explanation of the cause for any such delay and the specific aspects of the Plan affected by the delay;
- (ii) A full discussion of actions being taken or contemplated to minimize or mitigate such delay; and

(iii) A proposed time schedule for the implementation of any corrective actions being taken or contemplated, including interim dates for completion of tests or studies, installation and operation of any necessary equipment, or other preventive measures. In addition you may present additional oral or written statements in support of your extension request.

(3) The submission of a written extension request under paragraph (f)(2) of this section does not relieve you of your obligation to comply with the requirements of this part. The Regional Administrator may request a copy of your Plan to evaluate the extension request. When the Regional Administrator authorizes an extension of time for particular equipment or other specific aspects of the Plan, such extension does not affect your obligation to comply with the requirements related to other equipment or other specific aspects of the Plan for which the Regional Administrator has not expressly authorized an extension.

(g) **Qualified Facilities.** The owner or operator of a qualified facility as defined in this subparagraph may self-certify his facility's Plan, as provided in §112.6. A qualified facility is one that meets the following Tier I or Tier II qualified facility criteria:

(1) A **Tier I** qualified facility meets the qualification criteria in paragraph (g)(2) of this section and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gallons.

(2) A **Tier II** qualified facility is one that has had no single discharge as described in §112.1(b) exceeding 1,000 U.S. gallons or no two discharges as described in §112.1(b) each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan self-certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than discharges as described in §112.1(b) that are the result of natural disasters, acts of war, or terrorism), and has an aggregate aboveground oil storage capacity of 10,000 U.S. gallons or less.

#### **§112.4 Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator.**

If you are the owner or operator of a facility subject to this part, you must:

(a) Notwithstanding compliance with §112.3, whenever your facility has discharged more than 1,000 U.S. gallons of oil in a single discharge as described in §112.1(b), or discharged more than 42 U.S. gallons of oil in each of two discharges as described in §112.1(b), occurring within any twelve month period, submit the following information to the Regional Administrator within 60 days from the time the facility becomes subject to this section:

(1) Name of the facility;

(2) Your name;

(3) Location of the facility;

(4) Maximum storage or handling capacity of the facility and normal daily throughput;

(5) Corrective action and countermeasures you have taken, including a description of equipment repairs and replacements;

(6) An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;

(7) The cause of such discharge as described in §112.1(b), including a failure analysis of the system or subsystem in which the failure occurred;

(8) Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and

(9) Such other information as the Regional Administrator may reasonably require pertinent to the Plan or discharge.

(b) Take no action under this section until it applies to your facility. This section does not apply until the expiration of the time permitted for the initial preparation and implementation of the Plan under §112.3, but not including any amendments to the Plan.

(c) Send to the appropriate agency or agencies in charge of oil pollution control activities in the State in which the facility is located a complete copy of all information you provided to the Regional Administrator under paragraph (a) of this section. Upon receipt of the information such State agency or agencies may conduct a review and make recommendations to the Regional Administrator as to further procedures, methods, equipment, and other requirements necessary to prevent and to contain discharges from your facility.

(d) Amend your Plan, if after review by the Regional Administrator of the information you submit under paragraph (a) of this section, or submission of information to EPA by the State agency under paragraph (c) of this section, or after on-site review of your Plan, the Regional Administrator requires that you do so. The Regional Administrator may require you to amend your Plan if he finds that it does not meet the requirements of this part or that amendment is necessary to prevent and contain discharges from your facility.

(e) Act in accordance with this paragraph when the Regional Administrator proposes by certified mail or by personal delivery that you amend your SPCC Plan. If the owner or operator is a corporation, he must also notify by mail the registered agent of such corporation, if any and if known, in the State in which the facility is located. The Regional Administrator must specify the terms of such proposed amendment. Within 30 days from receipt of such notice, you may submit written information, views, and arguments on the proposed amendment. After considering all relevant material presented, the Regional Administrator must either notify you of any amendment required or rescind the notice. You must amend your Plan as required within 30 days after such notice, unless the Regional Administrator, for good cause, specifies another effective date. You must implement the amended Plan as soon as possible, but not later than six months after you amend your Plan, unless the Regional Administrator specifies another date.

(f) If you appeal a decision made by the Regional Administrator requiring an amendment to an SPCC Plan, send the appeal to the EPA Administrator in writing within 30 days of receipt of the notice from the Regional Administrator requiring the amendment under paragraph (e) of this section. You must send a complete copy of the appeal to the Regional Administrator at the time you make the appeal. The appeal must contain a clear and concise statement of the issues and points of fact in the case. It may also contain additional information from you, or from any other person. The EPA Administrator may request additional information from you, or from any other person. The EPA Administrator must render a decision within 60 days of receiving the appeal and must notify you of his decision.

#### **§112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators.**

If you are the owner or operator of a facility subject to this part, you must:

(a) **Amend the SPCC Plan** for your facility in accordance with the general requirements in §112.7, and with any specific section of this part applicable to your facility, when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge as described in §112.1(b). Examples of changes that may require amendment of the Plan include, but are not limited to: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility. An amendment made under this section must be prepared within six months, and implemented as soon as possible, but not later than six months following preparation of the amendment.

(b) Notwithstanding compliance with paragraph (a) of this section, complete a review and evaluation of the SPCC Plan at least once every five years from the date your facility becomes subject to this part; or, if your facility was in operation on or before August 16, 2002, five years from the date your last review was required under this part. As a result of this review and evaluation, you must amend your SPCC Plan within six months of the review to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in §112.1(b) from the facility. You must implement any amendment as soon as possible, but not later than six months following preparation of any amendment. You must document your completion of the review and evaluation, and must sign a statement as to whether you will amend the Plan, either at the beginning or end of the Plan or in a log or an appendix to the Plan. The following words will suffice, "I have completed review and evaluation of the SPCC Plan for (name of facility) on (date), and will (will not) amend the Plan as a result."

(c) Except as provided in §112.6, have a Professional Engineer certify any technical amendments to your Plan in accordance with §112.3(d).

#### **§112.6 Qualified Facilities Plan Requirements.**

Qualified facilities meeting the Tier I applicability criteria in §112.3(g)(1) are subject to the requirements in paragraph (a) of this section. Qualified facilities meeting the Tier II applicability criteria in §112.3(g)(2) are subject to the requirements in paragraph (b) of this section.

##### **(a) Tier I Qualified Facilities—**

(1) *Preparation and Self-Certification of the Plan.* If you are an owner or operator of a facility that meets the Tier I qualified facility criteria in §112.3(g)(1), you must either: comply with the requirements of paragraph (a)(3) of this section; or prepare and implement a Plan meeting requirements of paragraph (b) of this section; or prepare and implement a Plan meeting the general Plan requirements in §112.7 and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under §112.3(d). If you do not follow the appendix G template, you must prepare an equivalent Plan that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. To complete the template in appendix G, you must certify that:

- (i) You are familiar with the applicable requirements of 40 CFR part 112;
- (ii) You have visited and examined the facility;
- (iii) You prepared the Plan in accordance with accepted and sound industry practices and standards;

(iv) You have established procedures for required inspections and testing in accordance with industry inspection and testing standards or recommended practices;

(v) You will fully implement the Plan;

(vi) The facility meets the qualification criteria in §112.3(g)(1);

(vii) The Plan does not deviate from any requirement of this part as allowed by §112.7(a)(2) and 112.7(d) or include measures pursuant to §112.9(c)(6) for produced water containers and any associated piping; and

(viii) The Plan and individual(s) responsible for implementing this Plan have the approval of management, and the facility owner or operator has committed the necessary resources to fully implement this Plan.

(2) Technical Amendments. You must certify any technical amendments to your Plan in accordance with paragraph (a)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in §112.1(b). If the facility change results in the facility no longer meeting the Tier I qualifying criteria in §112.3(g)(1) because an individual oil storage container capacity exceeds 5,000 U.S. gallons or the facility capacity exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity, within six months following preparation of the amendment, you must either:

(i) Prepare and implement a Plan in accordance with §112.6(b) if you meet the Tier II qualified facility criteria in §112.3(g)(2); or

(ii) Prepare and implement a Plan in accordance with the general Plan requirements in §112.7, and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under §112.3(d).

(3) Plan Template and Applicable Requirements. Prepare and implement an SPCC Plan that meets the following requirements under §112.7 and in subparts B and C of this part: introductory paragraph of §§112.7, 112.7(a)(3)(i), 112.7(a)(3)(iv), 112.7(a)(3)(vi), 112.7(a)(4), 112.7(a)(5), 112.7(c), 112.7(e), 112.7(f), 112.7(g), 112.7(k), 112.8(b)(1), 112.8(b)(2), 112.8(c)(1), 112.8(c)(3), 112.8(c)(4), 112.8(c)(5), 112.8(c)(6), 112.8(c)(10), 112.8(d)(4), 112.9(b), 112.9(c)(1), 112.9(c)(2), 112.9(c)(3), 112.9(c)(4), 112.9(c)(5), 112.9(d)(1), 112.9(d)(3), 112.9(d)(4), 112.10(b), 112.10(c), 112.10(d), 112.12(b)(1), 112.12(b)(2), 112.12(c)(1), 112.12(c)(3), 112.12(c)(4), 112.12(c)(5), 112.12(c)(6), 112.12(c)(10), and 112.12(d)(4). The template in appendix G to this part has been developed to meet the requirements of 40 CFR part 112 and, when completed and signed by the owner or operator, may be used as the SPCC Plan. Additionally, you must meet the following requirements:

(i) *Failure analysis, in lieu of the requirements in §112.7(b).* Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of discharge), include in your Plan a prediction of the direction and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(ii) *Bulk storage container secondary containment, in lieu of the requirements in §§112.8(c)(2) and (c)(11) and 112.12(c)(2) and (c)(11).* Construct all bulk storage container installations (except mobile refuelers and other non-transportation-related tank trucks), including mobile or portable oil storage containers, so that you provide a secondary means of containment for the entire capacity of the largest single container plus additional capacity to contain precipitation. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system

consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a catchment basin or holding pond. Position or locate mobile or portable oil storage containers to prevent a discharge as described in §112.1(b).

(iii) *Overfill prevention, in lieu of the requirements in §§112.8(c)(8) and 112.12(c)(8).* Ensure that each container is provided with a system or documented procedure to prevent overfills of the container, describe the system or procedure in the SPCC Plan and regularly test to ensure proper operation or efficacy.

**(b) Tier II Qualified Facilities—**

(1) *Preparation and Self-Certification of Plan.* If you are the owner or operator of a facility that meets the Tier II qualified facility criteria in §112.3(g)(2), you may choose to self-certify your Plan. You must certify in the Plan that:

- (i) You are familiar with the requirements of this part;
- (ii) You have visited and examined the facility;
- (iii) The Plan has been prepared in accordance with accepted and sound industry practices and standards, and with the requirements of this part;
- (iv) Procedures for required inspections and testing have been established;
- (v) You will fully implement the Plan;
- (vi) The facility meets the qualification criteria set forth under §112.3(g)(2);
- (vii) The Plan does not deviate from any requirement of this part as allowed by §112.7(a)(2) and 112.7(d) or include measures pursuant to §112.9(c)(6) for produced water containers and any associated piping, except as provided in paragraph (b)(3) of this section; and
- (viii) The Plan and individual(s) responsible for implementing the Plan have the full approval of management and the facility owner or operator has committed the necessary resources to fully implement the Plan.

(2) *Technical Amendments.* If you self-certify your Plan pursuant to paragraph (b)(1) of this section, you must certify any technical amendments to your Plan in accordance with paragraph (b)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in §112.1(b), except:

- (i) If a Professional Engineer certified a portion of your Plan in accordance with paragraph (b)(4) of this section, and the technical amendment affects this portion of the Plan, you must have the amended provisions of your Plan certified by a Professional Engineer in accordance with paragraph (b)(4)(ii) of this section.
- (ii) If the change is such that the facility no longer meets the Tier II qualifying criteria in §112.3(g)(2) because it exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity you must, within six months following the change, prepare and implement a Plan in accordance with the general Plan requirements in §112.7 and the applicable requirements in subparts B and C of this part, including having the Plan certified by a Professional Engineer as required under §112.3(d).

(3) Applicable Requirements. Except as provided in this paragraph, your self-certified SPCC Plan must comply with §112.7 and the applicable requirements in subparts B and C of this part:

(i) *Environmental Equivalence.* Your Plan may not include alternate methods which provide environmental equivalence pursuant to §112.7(a)(2), unless each alternate method has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(ii) *Impracticability.* Your Plan may not include any determinations that secondary containment is impracticable and provisions in lieu of secondary containment pursuant to §112.7(d), unless each such determination and alternate measure has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(iii) *Produced Water Containers.* Your Plan may not include any alternative procedures for skimming produced water containers in lieu of sized secondary containment pursuant to §112.9(c)(6), unless they have been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(4) Professional Engineer Certification of Portions of a Qualified Facility's Self-Certified Plan.

(i) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify alternative measures allowed under §112.7(a)(2) or (d), that are included in the facility's Plan. Such measures must be reviewed and certified, in writing, by a licensed Professional Engineer. For each alternative measure allowed under §112.7(a)(2), the Plan must be accompanied by a written statement by a Professional Engineer that states the reason for nonconformance and describes the alternative method and how it provides equivalent environmental protection in accordance with §112.7(a)(2). For each determination of impracticability of secondary containment pursuant to §112.7(d), the Plan must clearly explain why secondary containment measures are not practicable at this facility and provide the alternative measures required in §112.7(d) in lieu of secondary containment. By certifying each measure allowed under §112.7(a)(2) and (d), the Professional Engineer attests:

(A) That he is familiar with the requirements of this part;

(B) That he or his agent has visited and examined the facility; and

(C) That the alternative method of environmental equivalence in accordance with §112.7(a)(2) or the determination of impracticability and alternative measures in accordance with §112.7(d) is consistent with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part.

(ii) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify measures as described in §112.9(c)(6) for produced water containers and any associated piping. Such measures must be reviewed and certified, in writing, by a licensed Professional Engineer, in accordance with §112.3(d)(1)(vi).

(iii) The review and certification by the Professional Engineer under this paragraph is limited to the alternative method which achieves equivalent environmental protection pursuant to §112.7(a)(2); to the impracticability determination and measures in lieu of secondary containment pursuant to §112.7(d); or the measures pursuant to §112.9(c)(6) for produced water containers and any associated piping and appurtenances downstream from the container.

#### **§112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans.**

If you are the owner or operator of a facility subject to this part you must prepare a Plan in accordance with good engineering practices. The Plan must have the full approval of management at a level of authority to commit the necessary resources to fully implement the Plan. You must prepare the Plan in writing. If you do not follow the sequence specified in this section for the Plan, you must prepare an equivalent Plan acceptable to the Regional Administrator that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. If the Plan calls for additional facilities or procedures, methods, or equipment not yet fully operational, you must discuss these items in separate paragraphs, and must explain separately the details of installation and operational start-up. As detailed elsewhere in this section, you must also:

- (a)
  - (1) Include a discussion of your facility's conformance with the requirements listed in this part.
  - (2) Comply with all applicable requirements listed in this part. Except as provided in §112.6, your Plan may deviate from the requirements in paragraphs (g), (h)(2) and (3), and (i) of this section and the requirements in subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.9(d)(3), 112.10(c), 112.12(c)(2), and 112.12(c)(11), where applicable to a specific facility, if you provide equivalent environmental protection by some other means of spill prevention, control, or countermeasure. Where your Plan does not conform to the applicable requirements in paragraphs (g), (h)(2) and (3), and (i) of this section, or the requirements of subparts B and C of this part, except the secondary containment requirements in paragraph (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11), you must state the reasons for nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection. If the Regional Administrator determines that the measures described in your Plan do not provide equivalent environmental protection, he may require that you amend your Plan, following the procedures in §112.4(d) and (e).
  - (3) Describe in your Plan the physical layout of the facility and include a facility diagram, which must mark the location and contents of each fixed oil storage container and the storage area where mobile or portable containers are located. The facility diagram must identify the location of and mark as "exempt" underground tanks that are otherwise exempted from the requirements of this part under §112.1(d)(4). The facility diagram must also include all transfer stations and connecting pipes, including intra-facility gathering lines that are otherwise exempted from the requirements of this part under §112.1(d)(11). You must also address in your Plan:
    - (i) The type of oil in each fixed container and its storage capacity. For mobile or portable containers, either provide the type of oil and storage capacity for each container or provide an estimate of the potential number of mobile or portable containers, the types of oil, and anticipated storage capacities;
    - (ii) Discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, etc.);
    - (iii) Discharge or drainage controls such as secondary containment around containers and other structures, equipment, and procedures for the control of a discharge;
    - (iv) Countermeasures for discharge discovery, response, and cleanup (both the facility's capability and those that might be required of a contractor);

(v) Methods of disposal of recovered materials in accordance with applicable legal requirements; and

(vi) Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom you have an agreement for response, and all appropriate Federal, State, and local agencies who must be contacted in case of a discharge as described in §112.1(b).

(4) Unless you have submitted a response plan under §112.20, provide information and procedures in your Plan to enable a person reporting a discharge as described in §112.1(b) to relate information on the exact address or location and phone number of the facility; the date and time of the discharge, the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged as described in §112.1(b); the source of the discharge; a description of all affected media; the cause of the discharge; any damages or injuries caused by the discharge; actions being used to stop, remove, and mitigate the effects of the discharge; whether an evacuation may be needed; and, the names of individuals and/or organizations who have also been contacted.

(5) Unless you have submitted a response plan under §112.20, organize portions of the Plan describing procedures you will use when a discharge occurs in a way that will make them readily usable in an emergency, and include appropriate supporting material as appendices.

(b) Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of a discharge), include in your Plan a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in §112.1(b), except as provided in paragraph (k) of this section for qualified oil-filled operational equipment, and except as provided in §112.9(d)(3) for flow lines and intra-facility gathering lines at an oil production facility. The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In determining the method, design, and capacity for secondary containment, you need only to address the typical failure mode, and the most likely quantity of oil that would be discharged. Secondary containment may be either active or passive in design. At a minimum, you must use one of the following prevention systems or its equivalent:

(1) For onshore facilities:

(i) Dikes, berms, or retaining walls sufficiently impervious to contain oil;

(ii) Curbing or drip pans;

(iii) Sumps and collection systems;

(iv) Culverting, gutters, or other drainage systems;

(v) Weirs, booms, or other barriers;

(vi) Spill diversion ponds;

(vii) Retention ponds; or

(viii) Sorbent materials.

(2) For offshore facilities:

(i) Curbing or drip pans; or

(ii) Sumps and collection systems.

(d) Provided your Plan is certified by a licensed Professional Engineer under §112.3(d), or, in the case of a qualified facility that meets the criteria in §112.3(g), the relevant sections of your Plan are certified by a licensed Professional Engineer under §112.6(d), if you determine that the installation of any of the structures or pieces of equipment listed in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11) to prevent a discharge as described in §112.1(b) from any onshore or offshore facility is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under §112.20, provide in your Plan the following:

(1) An oil spill contingency plan following the provisions of part 109 of this chapter.

(2) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

(e) Inspections, tests, and records. Conduct inspections and tests required by this part in accordance with written procedures that you or the certifying engineer develop for the facility. You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

(f) Personnel, training, and discharge prevention procedures. (1) At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan.

(2) Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management.

(3) Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in §112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures.

(g) Security (excluding oil production facilities). Describe in your Plan how you secure and control access to the oil handling, processing and storage areas; secure master flow and drain valves; prevent unauthorized access to starter controls on oil pumps; secure out-of-service and loading/unloading connections of oil pipelines; and address the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges.

(h) Facility tank car and tank truck loading/unloading rack (excluding offshore facilities).

(1) Where loading/unloading rack drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank car or tank truck

loading/unloading racks. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.

(2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks or vehicle brake interlock system in the area adjacent to a loading/unloading rack, to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.

(3) Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

(i) If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

(j) In addition to the minimal prevention standards listed under this section, include in your Plan a complete discussion of conformance with the applicable requirements and other effective discharge prevention and containment procedures listed in this part or any applicable more stringent State rules, regulations, and guidelines.

(k) Qualified Oil-filled Operational Equipment. The owner or operator of a facility with oil-filled operational equipment that meets the qualification criteria in paragraph (k)(1) of this sub-section may choose to implement for this qualified oil-filled operational equipment the alternate requirements as described in paragraph (k)(2) of this sub-section in lieu of general secondary containment required in paragraph (c) of this section.

(1) *Qualification Criteria—Reportable Discharge History*: The owner or operator of a facility that has had no single discharge as described in §112.1(b) from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges as described in §112.1(b) from any oil-filled operational equipment each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than oil discharges as described in §112.1(b) that are the result of natural disasters, acts of war or terrorism); and

(2) *Alternative Requirements to General Secondary Containment*. If secondary containment is not provided for qualified oil-filled operational equipment pursuant to paragraph (c) of this section, the owner or operator of a facility with qualified oil-filled operational equipment must:

(i) Establish and document the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge; and

(ii) Unless you have submitted a response plan under §112.20, provide in your Plan the following:

(A) An oil spill contingency plan following the provisions of part 109 of this chapter.

(B) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

**§112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities).**

If you are the owner or operator of an onshore facility (excluding a production facility), you must:

(a) Meet the general requirements for the Plan listed under §112.7, and the specific discharge prevention and containment procedures listed in this section.

(b) Facility drainage.

(1) Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.

(2) Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained storm water, as provided in paragraphs (c)(3)(ii), (iii), and (iv) of this section.

(3) Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.

(4) If facility drainage is not engineered as in paragraph (b)(3) of this section, equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.

(5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two "lift" pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in §112.1(b) in case there is an equipment failure or human error at the facility.

(c) Bulk storage containers.

(1) Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature.

(2) Construct all bulk storage tank installations (except mobile refuelers and other non-transportation-related tank trucks) so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond.

(3) Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:

- (i) Normally keep the bypass valve sealed closed.
  - (ii) Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in §112.1(b).
  - (iii) Open the bypass valve and reseal it following drainage under responsible supervision; and
  - (iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with §§122.41(j)(2) and 122.41(m)(3) of this chapter.
- (4) Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks.
- (5) Not use partially buried or bunkered metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions.
- (6) Test or inspect each aboveground container for integrity on a regular schedule and whenever you make material repairs. You must determine, in accordance with industry standards, the appropriate qualifications for personnel performing tests and inspections, the frequency and type of testing and inspections, which take into account container size, configuration, and design (such as containers that are: shop-built, field-erected, skid-mounted, elevated, equipped with a liner, double-walled, or partially buried). Examples of these integrity tests include, but are not limited to: visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other systems of non-destructive testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices satisfy the recordkeeping requirements of this paragraph.
- (7) Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines for contamination from internal heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.
- (8) Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:
- (i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.
  - (ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.
  - (iii) Direct audible or code signal communication between the container gauge and the pumping station.
  - (iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, tele pulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.
  - (v) You must regularly test liquid level sensing devices to ensure proper operation.

(9) Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in §112.1(b).

(10) Promptly correct visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts. You must promptly remove any accumulations of oil in diked areas.

(11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in §112.1(b). Except for mobile refuelers and other non-transportation-related tank trucks, you must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

(d) Facility transfer operations, pumping, and facility process.

(1) Provide buried piping that is installed or replaced on or after August 16, 2002, with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a State program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, you must carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated by the magnitude of the damage.

(2) Cap or blank-flange the terminal connection at the transfer point and mark it as to origin when piping is not in service or is in standby service for an extended time.

(3) Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.

(4) Regularly inspect all aboveground valves, piping, and appurtenances. During the inspection you must assess the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must also conduct integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement.

(5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.

**§112.9 Spill Prevention, Control, and Countermeasure Plan Requirements for onshore oil production facilities (excluding drilling and workover facilities).**

If you are the owner or operator of an onshore oil production facility (excluding a drilling or workover facility), you must: (SEE ON-LINE REQUIREMENTS)

**§112.10 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil drilling and workover facilities.**

If you are the owner or operator of an onshore oil drilling and workover facility, you must: (SEE ON-LINE TEXT)

**§112.11 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities.**

If you are the owner or operator of an offshore oil drilling, production, or workover facility, you must: (SEE ON-LINE TEXT).

Subpart D—RESPONSE REQUIREMENTS (SEE ON-LINE TEXT)

§112.20	Facility response plans.
§112.21	Facility response training and drills/exercises.
Appendix	Appendix A to Part 112—Memorandum of Understanding Between the Secretary of Transportation and the Administrator of the Environmental Protection Agency
Appendix	Appendix B to Part 112—Memorandum of Understanding Among the Secretary of the Interior, Secretary of Transportation, and Administrator of the Environmental Protection Agency
Appendix	Appendix C to Part 112—Substantial Harm Criteria
Appendix	Appendix D to Part 112—Determination of a Worst Case Discharge Planning Volume
Appendix	Appendix E to Part 112—Determination and Evaluation of Required Response Resources for Facility Response Plans
Appendix	Appendix F to Part 112—Facility-Specific Response Plan
Appendix	Appendix G to Part 112—Tier I Qualified Facility SPCC Plan

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**APPENDIX F**

**INCIDENT RESPONSE FORM**

**SPILL PREVENTION, CONTROL, & COUNTERMEASURE PLAN  
INCIDENT RESPONSE FORM**

RI-NU Services, LLC

According to the Aboveground Petroleum Storage Act, Porter-Cologne Act, and CCR Title 22 - Section 67145, any petroleum spill of 42 gallons or more must be reported immediately to the agencies listed in Section 6.3.1 of the SPCC. Have as much of the information in this form as possible when the notifications are conducted. However, **do not** wait until all of this information is known before contacting agencies. This form is to be completed by the Primary SPCC Contact or the Secondary SPCC Contact.

In the event of a spill of more than 1,000 gallons of oil in a single discharge or two (2) discharges of more than 42 gallons each within any 12-month period, a subsequent report should also be filed with the US EPA and the Los Angeles Regional Water Quality Control Board.

Regional Administrator Environmental Protection Agency, Region IX 75 Hawthorne Street San Francisco, CA 94105	Los Angeles Regional Water Quality Control Board 320 W. Fourth Street, Suite 200 Los Angeles, CA 90013
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Basic Information	
Facility name:	Person preparing report:
Facility location:	Job Title:
Facility owner/operator:	Phone number:
Spill Information	
Type of spill (solid/liquid):	Release date:
Name of material spilled:	Release time:
Location of spill:	Duration of spill:
Volume of material spilled:	Weather conditions:

Source of discharge:	Evacuation required?
Containment measures:	Damages or injuries?
Cleanup measures:	Has source been stopped?
<b>Notification:</b>	
Did the spill enter a storm drain or navigable waters? Yes <input type="checkbox"/> If so, how much?  No <input type="checkbox"/> If not, is there potential for the spill to enter a storm drain or navigable waters?	
Have all necessary individuals and agencies been contacted? (Please see above and Section 6.3.1 of the SPCC) <div style="text-align: right;">Yes <input type="checkbox"/> / No <input type="checkbox"/></div>	
Has all material been properly disposed of, including hazardous waste? <div style="text-align: right;">Yes <input type="checkbox"/> / No <input type="checkbox"/></div>	
What was the cause of the discharge, including an analysis of the system or subsystem in which the failure occurred?	
What corrective action and countermeasures have been taken, including a description of equipment repairs and replacements?	
What additional preventative measures have been taken to minimize the possibility of recurrence?	

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**APPENDIX G**

**RAINWATER DISCHARGE LOG**

**SPILL PREVENTION, CONTROL, & COUNTERMEASURE PLAN –  
RAINWATER DISCHARGE LOG**

RI-NU Services, LLC

According to 40 CFR 112.8(c)(3), you must not allow the discharge of uncontaminated rainwater unless you normally keep the bypass valve closed, inspect the water to ensure that it is uncontaminated, reseal the bypass valve after drainage is complete, and keep records of drainage events.

Removal procedures follow. REMOVAL MUST BE CONDUCTED BY AUTHORIZED PERSONNEL.

- If there is no sheen on the rainwater in the containment area, it may be discharged and allowed to percolate into the ground.
- If there is a visible sheen or detectable odor, the rainwater must be sent off site for recycling or disposal or be pumped into the on-site wastewater treatment system for treatment. IT MUST NOT BE DISCHARGED.

Use this form to document rainwater discharges.

Employee Name	Date	Approximate Discharge Volume	Appearance of Water

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## **APPENDIX H**

### **SECONDARY CONTAINMENT CALCULATIONS**

**Secondary Containment Calculations****Cone Bottom Receiving Tanks (40)**

Known:

Area berm will contain = 5,554 ft<sup>2</sup>Volume of largest tank contained = 802 ft<sup>3</sup>

Predicted inches of rainfall in a 24-hour, 25-year storm = 6.13 inches

Tank Diameter = 9 feet

Secondary Containment Calculation:

= 802 ft<sup>3</sup> / 5,554 ft<sup>2</sup> = 0.14 ft = 1.73 inches

= Berm Height = 1.73 inches + 6.13 inches = 8.05 inches = 0.67 feet

= Berm Height (Rounded Up) = 1 ft

= Berm Capacity = 5,554 ft<sup>2</sup> x 1 ft = 5,554 ft<sup>3</sup>= Footprint of One (1) Tank =  $\frac{\pi D^2}{4} = \frac{\pi(9^2)}{4} = 64 \text{ ft}^2$ = Displacement = 1 ft x 64 ft<sup>2</sup> x 40 tanks = 2,543 ft<sup>3</sup>= Net Berm Capacity = 5,554 ft<sup>3</sup> - 2,543 ft<sup>3</sup> = 3,011 ft<sup>3</sup> = **22,519 gallons****Mix Tanks (6)**

Known:

Volume of largest tank contained = 5,000 gallons = 668 ft<sup>3</sup>

Predicted inches of rainfall in a 24-hour, 25-year storm = 6.13 inches

Containment surface area (truck wash channel) = 1,309 ft<sup>2</sup>Containment capacity (truck wash channel) = 3,286 ft<sup>3</sup> = 24,577 gallons

Secondary Containment Calculation:

= Containment depth/height = 668 ft<sup>3</sup> / 1,309 ft<sup>2</sup> = 0.51 ft

= Containment depth/height (includes freeboard) = 0.51 ft + (6.13 inches / 12 inches per foot) = 1.04 ft

= Containment volume required = 1.04 ft x 1,309 ft<sup>2</sup> = 1,358 ft<sup>3</sup> = 10,157 gallons= **24,577 gallons > 10,157 gallons = Mix tanks sufficiently contained by truck wash channel capacity.**

Skim Oil Tanks (2) and Oil/Water Separator (1)

Known:

Volume of largest tank contained = 7,121 gallons = 952 ft<sup>3</sup>  
Predicted inches of rainfall in a 24-hour, 25-year storm = 6.13 inches  
Containment surface area = 972 ft<sup>2</sup>  
Containment wall height = 1.80 to 2.60 ft

Secondary Containment Calculation:

= Containment depth/height = 952 ft<sup>3</sup> / 972 ft<sup>2</sup> = 0.98 ft  
= Containment depth/height (includes freeboard) = 0.98 ft + (6.13 inches / 12 inches per foot) = 1.51 ft  
= **1.80 ft > 1.51 ft = Skim oil tanks and oil/water separator sufficiently contained by wall barrier.**

Covered HazMat Storage Building Area (1)

Known:

Area berm will contain = 610 ft<sup>2</sup>  
Height of Berm (assumed) = 1.0 ft

Secondary Containment Calculation:

= 610 ft<sup>2</sup> x 1.0 ft = 610 ft<sup>3</sup> = **4,563 gallons**

Diesel Tank Storage Structure (1)

Secondary Containment Calculation\*:

= 12 ft. L x 12 ft. W x 1 ft. H = 144 ft<sup>3</sup> = **1,077 gallons**

\*Note: The tank and drums are raised and so displacement was not calculated.

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## **APPENDIX I**

### **NOAA's POINT PRECIPITATION FREQUENCY ESTIMATES FOR SANTA PAULA, CA**



**NOAA Atlas 14, Volume 6, Version 2**  
**Location name: Santa Paula, California, USA\***  
**Latitude: 34.3161°, Longitude: -119.104°**  
**Elevation: 196.11 ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



### POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic,  
 Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel  
 Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aerals](#)

### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.145 (0.122-0.175)	0.186 (0.156-0.225)	0.240 (0.200-0.291)	0.283 (0.234-0.346)	0.342 (0.272-0.433)	0.386 (0.301-0.501)	0.432 (0.327-0.575)	0.478 (0.352-0.656)	0.542 (0.381-0.777)	0.591 (0.401-0.880)
10-min	0.208 (0.174-0.252)	0.267 (0.223-0.323)	0.344 (0.287-0.417)	0.406 (0.335-0.496)	0.490 (0.390-0.621)	0.554 (0.431-0.718)	0.619 (0.469-0.824)	0.686 (0.505-0.941)	0.776 (0.546-1.11)	0.847 (0.575-1.26)
15-min	0.252 (0.211-0.304)	0.323 (0.270-0.391)	0.416 (0.347-0.504)	0.491 (0.405-0.600)	0.592 (0.472-0.751)	0.670 (0.521-0.868)	0.748 (0.567-0.996)	0.829 (0.610-1.14)	0.939 (0.661-1.35)	1.02 (0.695-1.53)
30-min	0.374 (0.313-0.452)	0.480 (0.401-0.580)	0.617 (0.515-0.748)	0.729 (0.602-0.891)	0.879 (0.700-1.12)	0.994 (0.774-1.29)	1.11 (0.843-1.48)	1.23 (0.906-1.69)	1.39 (0.981-2.00)	1.52 (1.03-2.27)
60-min	0.610 (0.511-0.737)	0.783 (0.654-0.946)	1.01 (0.839-1.22)	1.19 (0.982-1.45)	1.43 (1.14-1.82)	1.62 (1.26-2.10)	1.81 (1.37-2.41)	2.01 (1.48-2.76)	2.27 (1.60-3.26)	2.48 (1.68-3.70)
2-hr	0.905 (0.757-1.09)	1.15 (0.963-1.39)	1.47 (1.23-1.79)	1.73 (1.43-2.12)	2.08 (1.66-2.64)	2.35 (1.83-3.05)	2.63 (1.99-3.50)	2.91 (2.14-3.99)	3.29 (2.32-4.72)	3.59 (2.43-5.34)
3-hr	1.13 (0.944-1.36)	1.43 (1.20-1.73)	1.83 (1.53-2.22)	2.15 (1.78-2.64)	2.59 (2.06-3.28)	2.92 (2.28-3.79)	3.26 (2.47-4.34)	3.61 (2.66-4.96)	4.09 (2.88-5.86)	4.46 (3.02-6.64)
6-hr	1.60 (1.34-1.93)	2.04 (1.70-2.46)	2.61 (2.18-3.17)	3.07 (2.54-3.76)	3.70 (2.95-4.69)	4.17 (3.25-5.41)	4.66 (3.53-6.20)	5.16 (3.79-7.08)	5.83 (4.10-8.37)	6.36 (4.31-9.47)
12-hr	2.04 (1.71-2.46)	2.64 (2.20-3.19)	3.41 (2.84-4.13)	4.03 (3.32-4.92)	4.85 (3.87-6.16)	5.49 (4.27-7.11)	6.12 (4.64-8.15)	6.77 (4.98-9.29)	7.65 (5.38-11.0)	8.32 (5.65-12.4)
24-hr	2.55 (2.26-2.93)	3.35 (2.96-3.87)	4.39 (3.87-5.07)	5.21 (4.56-6.08)	6.32 (5.35-7.62)	7.16 (5.93-8.82)	8.00 (6.47-10.1)	8.86 (6.97-11.5)	10.0 (7.55-13.5)	10.9 (7.94-15.2)
2-day	3.13 (2.78-3.61)	4.20 (3.71-4.84)	5.57 (4.92-6.45)	6.68 (5.85-7.79)	8.17 (6.91-9.85)	9.30 (7.71-11.5)	10.4 (8.45-13.2)	11.6 (9.13-15.1)	13.2 (9.94-17.8)	14.4 (10.5-20.1)
3-day	3.47 (3.07-4.00)	4.70 (4.16-5.42)	6.30 (5.56-7.29)	7.59 (6.65-8.86)	9.34 (7.91-11.3)	10.7 (8.85-13.2)	12.0 (9.74-15.2)	13.4 (10.6-17.4)	15.3 (11.6-20.7)	16.8 (12.2-23.5)
4-day	3.77 (3.34-4.34)	5.14 (4.55-5.93)	6.93 (6.11-8.02)	8.39 (7.34-9.78)	10.4 (8.77-12.5)	11.9 (9.85-14.6)	13.4 (10.9-16.9)	15.0 (11.8-19.5)	17.2 (13.0-23.2)	18.8 (13.7-26.4)
7-day	4.35 (3.85-5.01)	5.95 (5.26-6.87)	8.07 (7.12-9.34)	9.81 (8.59-11.4)	12.2 (10.3-14.7)	14.1 (11.7-17.3)	16.0 (12.9-20.1)	17.9 (14.1-23.3)	20.7 (15.6-27.9)	22.8 (16.6-31.9)
10-day	4.67 (4.14-5.38)	6.41 (5.67-7.39)	8.72 (7.69-10.1)	10.6 (9.30-12.4)	13.3 (11.2-16.0)	15.3 (12.7-18.9)	17.5 (14.1-22.1)	19.7 (15.5-25.6)	22.8 (17.2-30.8)	25.2 (18.4-35.3)
20-day	5.46 (4.83-6.29)	7.54 (6.67-8.69)	10.3 (9.13-12.0)	12.7 (11.1-14.8)	16.0 (13.5-19.3)	18.6 (15.4-22.9)	21.3 (17.2-26.9)	24.2 (19.0-31.4)	28.2 (21.3-38.1)	31.4 (22.9-44.0)
30-day	6.47 (5.73-7.45)	8.95 (7.91-10.3)	12.3 (10.9-14.2)	15.2 (13.3-17.7)	19.2 (16.2-23.1)	22.3 (18.5-27.5)	25.7 (20.8-32.4)	29.2 (23.0-37.9)	34.3 (25.8-46.3)	38.3 (27.9-53.6)
45-day	7.68 (6.80-8.84)	10.6 (9.35-12.2)	14.5 (12.8-16.8)	17.9 (15.7-20.9)	22.7 (19.2-27.3)	26.5 (22.0-32.6)	30.6 (24.7-38.5)	34.9 (27.4-45.3)	41.0 (31.0-55.5)	46.0 (33.6-64.4)
60-day	8.76 (7.76-10.1)	12.0 (10.6-13.8)	16.4 (14.4-18.9)	20.2 (17.6-23.5)	25.5 (21.6-30.8)	29.9 (24.8-36.8)	34.5 (27.9-43.6)	39.5 (31.1-51.3)	46.6 (35.2-63.1)	52.5 (38.2-73.5)

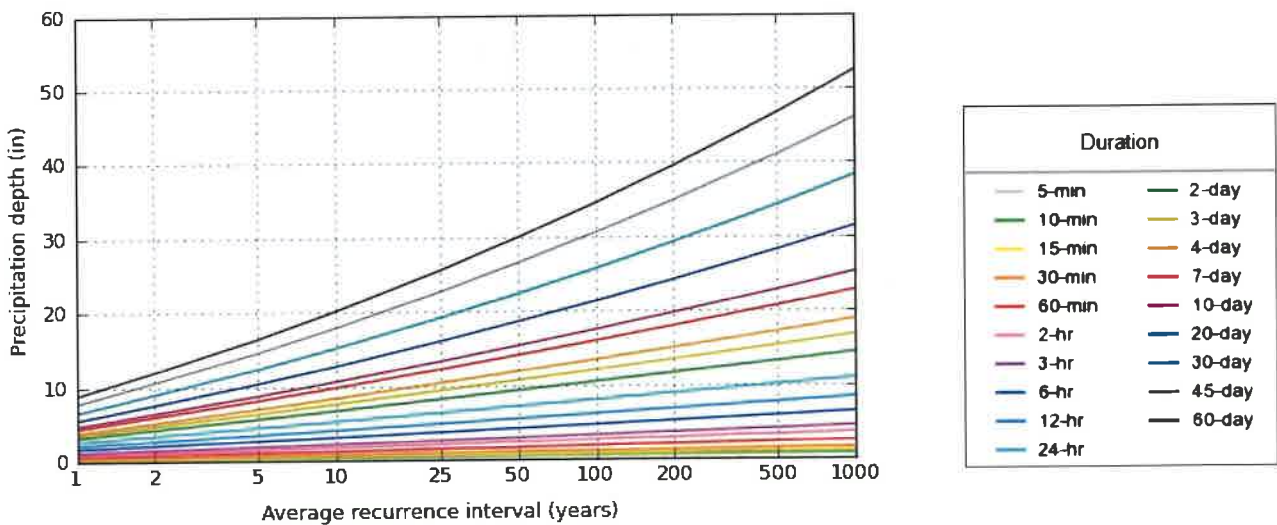
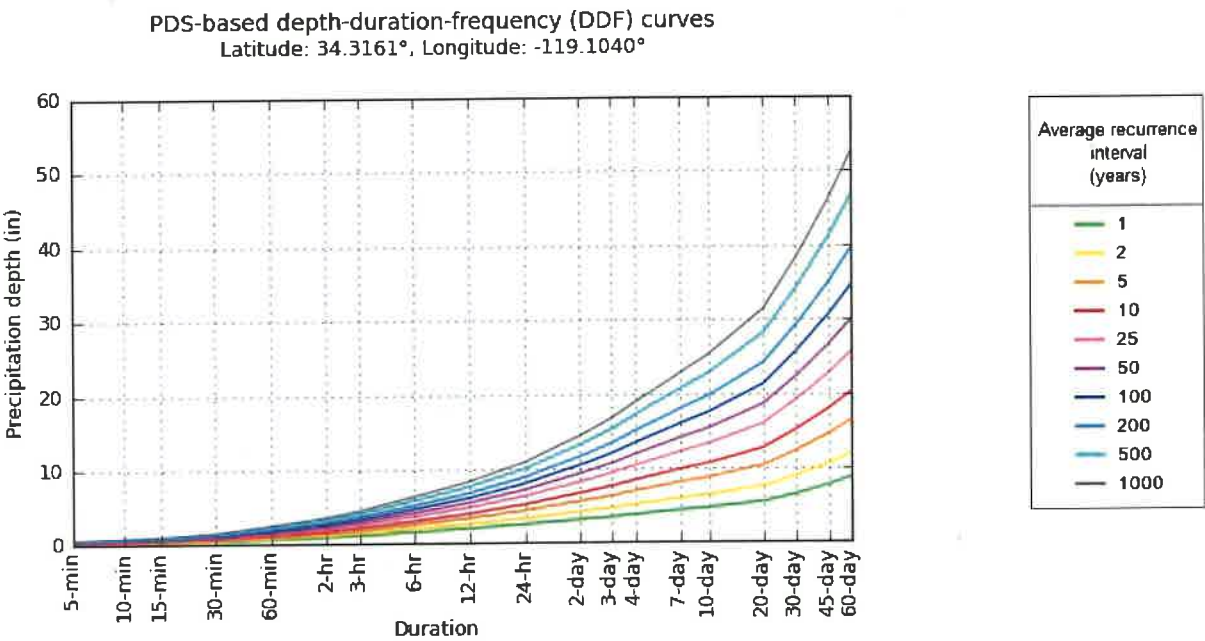
<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

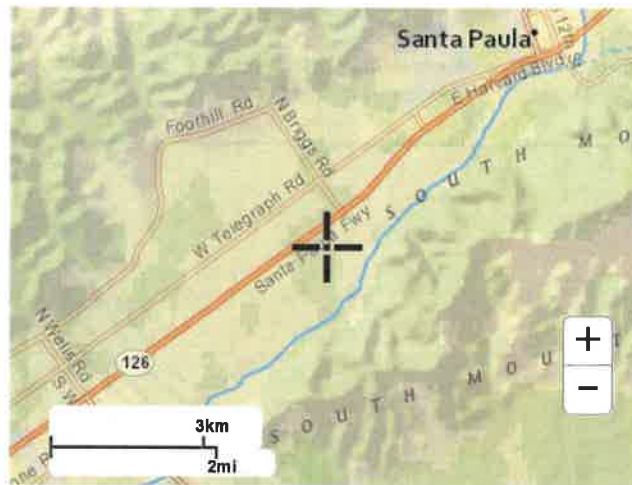
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### PF graphical



Maps & aerals

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

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1325 East West Highway  
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Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

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## Technical Memorandum

**Date:** September 6, 2018  
**To:** Ms. Franca Rosengren  
**From:** Daniel Tormey, Ph.D., P.G.

**RE:** **Ri-Nu Services LLC Application to Reinstate Conditional Use Permit**  
**Application No. PL15-0106**

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At your request, I have reviewed the application materials provided by Ri-Nu LLC and predecessor companies at the former SCWW facility located at 815 Mission Rock Road in Santa Paula, California. I have two recommendations that should be provided to the Project applicants so that they can conduct the analysis that would lead to augmenting their Project description. One recommendation has to do with the hazards identified by the explosion that occurred at the facility in November 2014, and the other has to do with the condition of the 12-mile long sewer discharge line connecting the facility to the City of Oxnard wastewater treatment plant.

### **Risk Evaluation and Resulting Plans and Training**

The facility experienced an explosion in November 2014, and a February 27, 2015 letter from Michael Bradbury provides a *Root Cause Investigatory Report*. The report indicates that a tote(s) of sodium chlorite, properly labeled and contained, was delivered to the facility as part of a proposed program to address odors in the pipeline, but was never used. Subsequently, the product in the tote was introduced into a vacuum truck with other materials with which the strongly oxidizing sodium chlorite was chemically incompatible, resulting in an explosion and other hazardous conditions that affected first responders. The conclusion of the *Root Cause Investigatory Report* was that certain policy changes should be implemented:

- 1) Facility will no longer accept any wastewater contained in totes.
- 2) Additional targeted safety training will reinforce this new tote policy

The administrative record includes a June 20, 2013 *Safety Handbook* prepared for the Santa Clara Waste Water Company by Green Compass. The Safety Handbook was in force at the time of the explosion. It includes specific measures to address safe transfer of materials stored in totes, specific provisions regarding chemical incompatibilities, and extensive requirements for training and record keeping. In summary, the policies and procedures in place prior to the

explosion include the two items identified by the *Root Cause Investigatory Report*, as well as additional measures, that proved to be inadequate to reduce the explosion risk at the facility. In addition, the *Root Cause Investigatory Report* specifies a prohibition on storage of wastewater in totes, but the root cause involved the storage of a product in totes.

The administrative record also includes a Draft *Operations and Maintenance Manual*, prepared by Ensaf Inc. in January 2017 for Ri-Nu, and focuses on the wastewater treatment plant. In many ways this manual is a step backwards from the pre-explosion *Safety Handbook*. This is in part due to the 2017 manual's focus on the wastewater treatment plant and not the entire facility, but there is no other plan in the record that would include post-explosion lessons learned and corrective measures. Specifically, the 2017 plan makes no reference to the explosion or to the causes of the explosion, and very minor mention of the chemical incompatibilities known to occur at the facility (less than in the 2013 *Safety Handbook*). There is no mention of "new policies" or "new training" specified in the *Root Cause Analysis Investigatory Report*, even these do not appear to address the root cause identified (use of a tote for product storage, and introducing it into a vac truck).

To assist the County in their consideration of whether or not to reinstate the Conditional Use Permit and allow an expansion of the operations at the facility compared to pre-explosion operations, I recommend that the Applicants conduct a *Risk Management Analysis* for the facilities proposed operations. The analysis would be conducted and facilitated by a firm with experience in this analysis and approved by the County prior to conducting the work. Such an analysis is common in the field of managing process risks at industrial facilities, particularly after an event, such as an explosion, that demonstrates "business as usual" is not adequate to protect the facilities, first responders, and the public.

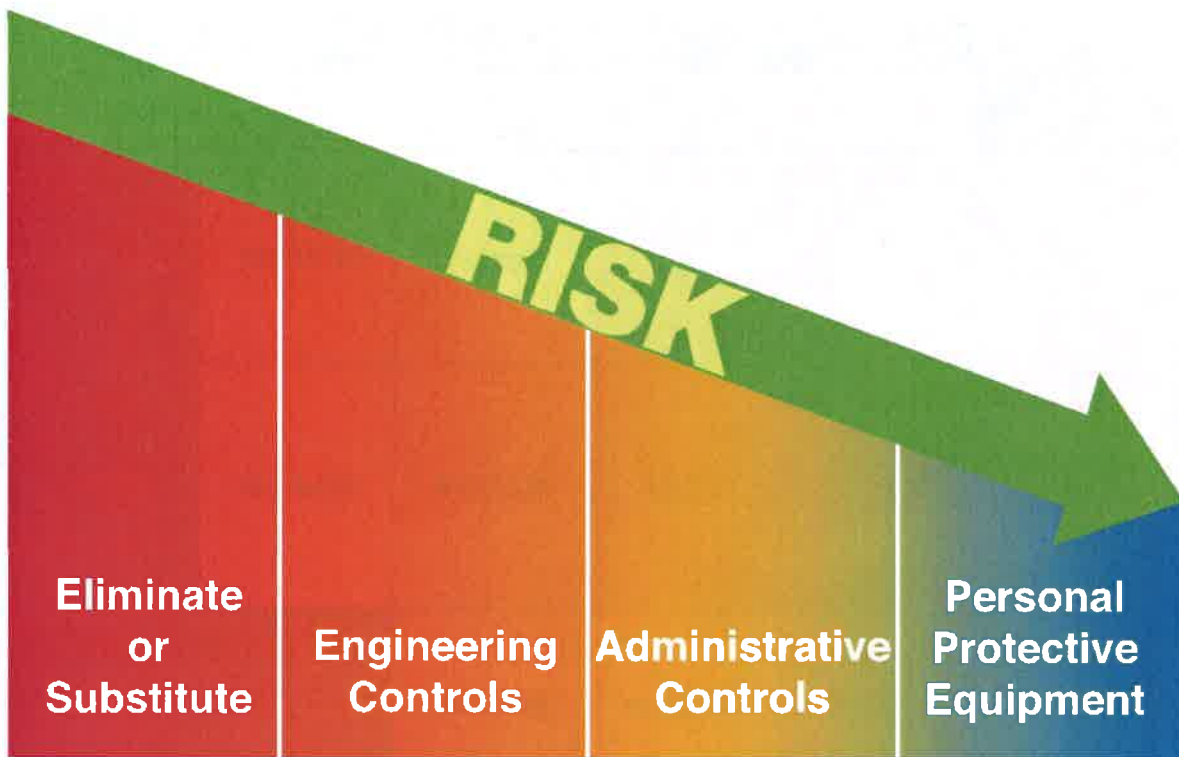
The analysis would fully address chemical use, storage, handling, and disposal, with a focus (although not an exclusive focus) on chemical incompatibilities and toxicity. I would recommend that, after the firm conducting the work is selected, that the County review and approve their workplan to ensure that the objectives of this recommendation are met.

The general scope of the analysis would be as follows:

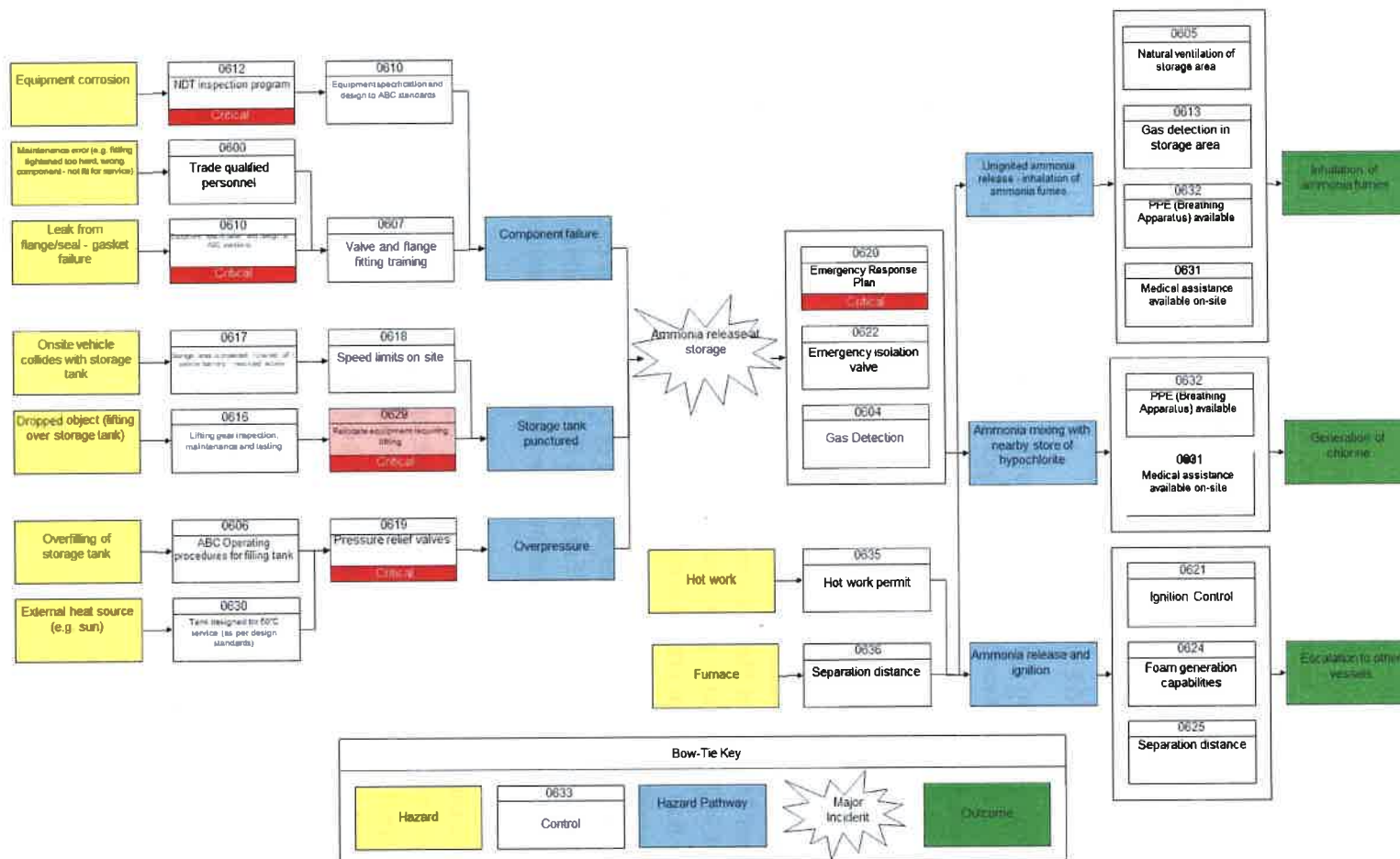
- 1) The selected firm would conduct a review of past and proposed chemical use, storage, handling, and disposal at the facility and develop a list of actions, potential adverse consequences, and the likelihood of occurrence of the adverse consequences. The summary would also include likely receptors (workers, first responders, public), and include a site inspection.
- 2) The selected firm would facilitate a workshop or workshops with Ri-Nu management and staff to rank the likelihood of occurrence and consequence level of accident conditions. A typical graphical tool supporting this facilitate workshop, and leading to a prioritization of process risks, is shown below. If no management or staff are available, the firm could conduct the ranking based on their experience and on their observations of the facility and future construction plans.

LIKELIHOOD:	CONSEQUENCES				
	1 Extreme	2 High	3 Medium	4 Low	5 Negligible
Frequent 1	Extreme	High	Medium	Medium	Low
Occasional 2	Extreme	High	Medium	Medium	Low
Possible 3	High	Medium	Medium	Low	Low
Unlikely 4	High	Medium	Low	Low	Low
Improbable 5	Medium	Low	Low	Low	Low

- 3) For the highest risk level actions, and specifically including those triggered by chemical incompatibilities that could lead to explosion, develop preventative measures. The measures are typically selected based on a preferred hierarchy of controls, with preference given to either elimination of the risk or to an engineering control to reduce the risk, followed by less preferable training and personal protective equipment as the only preventative measures. A typical graphic illustrating this is shown below.



- 4) For the specific causes, consequences, and likelihood of the sodium chlorite-triggered explosion, include a more detailed evaluation of the root cause, controls (including those that failed), and consequences. A typical graphic illustrating this is shown below.



Note that this graphic applies to an explosion related to a release from an ammonia tank, but the process depiction is applicable.

5) Develop designs, plans, and procedures that implemented the risk reduction measures. Such plans will in part depend on the outcome of the *Risk Management Analysis*, but at a minimum would include:

- a. *Risk Management Plan*, summarizing all of the proposed actions and control points; the plan should be suitable to allow inspection by VC EHD to ensure that all elements are in place and operational
- b. *Emergency Response Plan*, with contingency measures for such things as response actions under conditions of an accident-induced power outage
- c. *Training Plan*, with specific modules identified that reflect the outcome of the Risk Management Analysis and provisions for record keeping, available for inspection by VC EHD
- d. Provisions for an annual *Spill Drill* with the local first responders, to ensure that both facility personnel and first responders are aware of facility risks by location, safe response actions, and other components.

The material provided by the Applicant under this recommendation would be included in the Project Description as Applicant-proposed measures related to safety.

#### **Pipeline Condition Assessment and Repair**

The administrative record includes data that the pipeline connecting the facility to the City of Oxnard Wastewater Treatment Plant is impaired, in part because it failed a pressure test and experienced a leak in 2015, and in part owing to concerns related to internal corrosion. The inspections of the line after the pressure test, however, only appeared to evaluate external corrosion, not internal. The observations did, however, note sediment buildup in the line which would indicate low flow conditions and the buildup of chemicals and bacteria that could lead to deleterious levels of internal corrosion. There is no data in the administrative record indicating any further testing of the pipeline. The pipeline operates under a franchise agreement with the County of Ventura.

Prior to allowing further use of the pipeline, I would recommend that the County require testing for pipeline integrity by another pressure test, and an electromagnetic test of wall thickness using a smart pig too. The electromagnetic testing would identify “anomalies” with relatively low wall thickness that would be exposed and tested for actual wall thickness. If the anomaly level tested in the first round indicates inadequate wall thickness, then the contractor will evaluate anomalies at a lower level.

I understand that the City of Oxnard may have additional concerns related to odor, sedimentation that may restrict pipe flow, and other matters. These are not necessarily addressed by the pipeline integrity testing.



## **SAFETY HANDBOOK**

*Injury and Illness Prevention Program  
Code of Safe Practices  
Safety Standards (Procedures)  
General Safety Policies*

*Please note the following:*

*If the "the company" or "company" is written it always refers to  
Ri-Nu Services, LLC.*

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Revision Date: 6/20/2013  
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- 5.7     Hydrogen Sulfide (H<sub>2</sub>S)
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- 5.9     Respiratory Protection Program
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- 5.11    Waste Storage and Handling
- 5.12    Subcontractor Management

## **INTRODUCTION AND PURPOSE**

The Company will institute and administer a comprehensive and continuous occupational Injury and Illness Prevention Program. The health and safety of an individual employee takes precedence over all other concerns. In support of this commitment, the Company provides measures to control workplace hazards through communications, periodic inspections, incident investigation, mitigation, compliance audits and employee training. Under all circumstances, it is the intent of the Company to comply with all applicable federal, state and local regulations and to provide a safe and healthful work environment for our employees.

To help us achieve an injury-free workplace, we have developed this Safety Manual, an integrated plan to manage and improve Company safety performance. As part of this process, we intend to hire employees and contractors with an exemplary safety attitude. We do this knowing we must cooperate and work as a team to obtain the desired results.

This manual is divided into five sections (Foreword, Injury and Illness Prevention Program, Code of Safe Practices, Safety Standards, and General Safety Policies).

### **Section 1.00 Foreword**

Includes an overview of program contents, introduction and scope, and a policy statement endorsing the system as appropriate for the company.

### **Section 2.00 Injury and Illness Prevention Program (IIPP)**

An IIPP is an element required by California Code of Regulation 3203 for all employers. It consists of seven established criteria (responsibilities, compliance/disciplinary policy, communication, identification of workplace hazards, accident reporting and investigating, employee training and record keeping). The IIPP is the core of the administrative portion of the manual.

### **Section 3.00 Code of Safe Practices (Tailgate Safety-Meeting Topics)**

The written Safety Rules section of the program are not necessarily required by any regulatory body, however much of the contents reflect current laws and such should be used to complement independent study or assist in tailgate safety meetings.

**FOREWORD****Section: 1.01 Introduction and Purpose****Revision Number: 1****Revision Date: 6/20/2013****File Name: P101****Section 4.00      Safety Standards (procedures)**

Safety standards included in section 4.00 are written job procedures developed to be utilized in most of the daily activities of the company. Most of the written job procedures are regulatory required and reference applicable federal and/or state laws within the text of the documents.

**Section 5.00      General Safety Guidelines**

An attempt was made to encompass all other written safety material that was not necessarily a daily function of the business, however deemed important, into a group called General Safety Guidelines. Within this section you will find general information relating to a multitude of safety requirements.

DRAFT

## **POLICY STATEMENT**

To All Company Employees:

Safety is of primary importance in our operations. No business objective is so important that it will be pursued at the sacrifice of safety. Each of us has the responsibility to make the safety of our co-workers and ourselves a basic concern. This objective is fundamental to our well-being, as well as the efficient operation of our business. Every employee has the responsibility to prevent accidents and injuries by following established working rules, by practicing the principles taught in safety training and by providing ideas on how our safety efforts might be further strengthened.

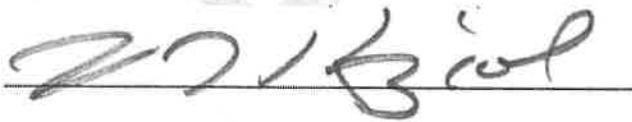
We have instituted this Environmental, Health and Safety (EHS) system which, with your help, will succeed in providing safe and healthy working conditions.

This program is designed to:

- 1) Assign Responsibilities to employees to carry out the necessary elements of the program;
- 2) Establish a Compliance/Disciplinary Policy for employees that fail to carry out their duties with regard to safe operations. Additionally, reward those that continue to work safely;
- 3) Develop a system to communicate with our employees concerning safety matters and to encourage feedback;
- 4) Identify and evaluate jobsite hazards;
- 5) Establish methods for investigating and correcting unsafe, or unhealthy conditions;
- 6) Establish a training and retraining program for employees and;
- 7) Maintain and continually improve the ongoing integrity of the system.

The cooperation of all people in our organization is expected. The results will be worth the effort.

Sincerely,



Tim Koziol, CEO

Implementation, administration and continual systematic improvement of this management program are the responsibility of the Company Safety Manager.

## **RESPONSIBILITIES**

### **SAFETY REPRESENTATIVE**

The Safety Representative has primary authority and responsibility to ensure company implementation of the management system and to ensure the health and safety of company personnel, subcontractors and customers. This is accomplished by communicating the company's emphasis on health and safety, analyzing work procedures for hazard identification and correction, ensuring regular workplace inspections, providing health and safety training, and encouraging prompt employee reporting of health and safety concerns without fear of reprisal.

The Safety Representative has responsibility for:

- Ensuring that the Safety Committee, if utilized, is aware of all accidents which have occurred, and all hazards which have been observed since the last meeting
- Working with employees and subcontractors to address safety concerns
- Assisting in the coordination of required health and safety training
- Serving as liaison for employees and others, on environmental, health and safety issues the company cannot immediately resolve
- Maintaining copies of safety meeting minutes and other safety-related records

The Safety Representative may seek assistance from other members of the company as necessary to meet these responsibilities.

### **SUPERVISORS**

Supervisors play a key role in the implementation of the company's environmental, health and safety management system. Supervisors may include Management, Superintendents, Field Supervisors, or any other lead man on a project. They are responsible for:

- Communicating to their subordinates and subcontractors the company's emphasis on protecting health and safety
- Ensuring periodic, documented inspection of workspaces under their authority
- Promptly correcting identified hazards
- Modeling and enforcing safe and healthful work practices
- Providing, where appropriate, safety training and personal protective equipment
- Implementing measures to eliminate or control workplace hazards

- Stopping any employee's work that poses an imminent hazard to either the employee or any other individual
- Encouraging employees to report health and safety issues to the Safety Representative without fear of reprisal

### **INDIVIDUAL EMPLOYEES**

It is the responsibility of individual employees to comply with all applicable health and safety regulations, company policies, and established work practices. This includes but is not limited to:

- Observing health and safety-related signs, posters, warning signals and directions
- Reviewing the area emergency plan and assembly area
- Learning about the potential hazards of assigned tasks and work areas
- Taking part in appropriate health and safety training
- Following all safe operating procedures and precautions
- Using proper personal protective equipment
- Warning coworkers about defective equipment and other hazards
- Reporting unsafe conditions immediately to a supervisor, and stopping work if an imminent hazard is presented
- Participating in workplace safety inspections

### **SUBCONTRACTORS**

Each subcontractor is responsible for working in a safe manner to prevent injuries. Subcontractors must adhere to the safety policy of the Company and take responsibility for their own safety programs which shall include:

- Safe work practices
- Safe equipment
- Implementation of accident prevention methods, and
- Maintaining a safe job site

## **COMPLIANCE/DISCIPLINARY POLICY**

All company personnel have the responsibility for complying with safe and healthful work practices, including applicable regulations, company policy, and safety procedures. Overall performance of maintenance in a safe and healthful work environment should be recognized by the supervisor and noted in performance evaluations. Employees will not be discriminated against for work-related injuries, and injuries will not be included in performance evaluations, unless the injuries were a result of an unsafe act on the part of the employee. Implementation of this policy will be by the president, safety department, project manager, project superintendent and/or combination thereof.

Standard progressive disciplinary measures in accordance with the applicable personnel policy or labor contract will result when employees fail to comply with applicable regulations, company policy, and/or company safety procedures. All personnel will be given instruction and an opportunity to correct unsafe behavior. Repeated failure to comply or willful and intentional non-compliance may result in disciplinary measures up to and including termination. Employees will be disciplined for unsafe practices in accordance with the company employee warning system.

### **Employee Warning System**

Willful violations of work practices will result in disciplinary action in accordance with the following company policy:

1. **Verbal Warning** - As the first step in correcting unacceptable behavior, the supervisor shall review the pertinent facts with the employee. The supervisor will consider the severity of the problem and the employees past performance. A verbal warning will be issued to the employee, which will be documented by the supervisor in the employees' personnel file.
2. **Written Warning** - If the unacceptable performance continues a written warning will be issued. The written warning will clearly state the policy that was violated and steps the employee must take to correct it. Probation will be part of the written warning. It may also include time off without pay. At the completion of the probation period, the supervisor will meet with the employee to determine if the employee has achieved the required level of performance.
3. **Termination** - The third step in solving unacceptable behavior is termination. The employee may be terminated if performance is not improved within a reasonable amount of time.

The Company reserves the right to bypass the company "Employee Warning System" and terminate employees "at will" for any reason management deems necessary.

### **General Requirements**

1. The site supervisors and/or foreman will be responsible for enforcement of the disciplinary policy.
2. The following is considered a safety violation. Not following verbal or written safety procedures, guidelines, rules, horse play, failure to wear selected PPE, abuse of selected PPE, accepting or placing waste materials in totes, etc.
3. After disciplinary action is taken management will meet with employee(s) to discuss the infraction and inform the individual(s) of the rule or procedure that was violated and the corrective action to be taken.
4. Company officials must conduct periodic inspections of work areas to ensure compliance with safety rules and policies. Supervisors must have a commitment to the safety goals of the company and take active role in the process. These actions shall include physical inspections by company officials that indicate violations showing overall lack of commitment to company safety goals. Action by supervisors shall be under the same level of disciplinary actions.

### **Safety Incentive Program**

Company Management enthusiastically supports the protection of employee safety and health. This support is demonstrated, in part, through programs to provide recognition and extra incentives for employees to work safely and efficiently. Management provides employees the opportunity to earn awards for their own safe, efficient work, and the safe efficient work of their team members. The make-up of the program is described below. Specific awards are described in management bulletins available from the Plant Manager.

The safety incentive awards are intended to help maintain constant safety and health awareness. They are not to be considered a substitute for any element of this EH&S Management system.

**Safety Incentive Programs change from time to time, but a typical list of incentives are listed below:**

- **Cash**
- **Company jacket**
- **Company shirt or hat**
- **Gift certificates**
- **Event tickets**
- **Other appropriate items**

### **Safety Award Eligibility**

The following requirements need to be fulfilled for an employee to be eligible for the company safety incentive award:

1. Employees will have no OSHA recordable injury during a six (6) month period, as defined below:
  - Any injury that results in a lost workday
  - Any other injury that does not result in a lost workday, but does require medical treatment (other than first aid); involves loss of consciousness; results in restriction of work or motion; or results in the termination of employment.
2. Employee has not caused any vehicle damage, or accidents
3. Employee has not caused damage to company tools or equipment
4. Employee must comply with all company safety rules, including personal protective equipment – hard hat, steel toed boots, safety glasses, hearing protection, etc...
5. Employee needs to attend all required safety meetings and training sessions
6. Employee must turn in all company paperwork, on time
7. No unexcused absences for scheduled work. You must call in if you are sick, otherwise it will be considered unexcused and you will forfeit your bonus for the given period.
8. If you are late to work one (1) time you will lose 25% of your bonus, two (2) times 50%, three (3) times 100%, if you are still employed.
9. Employee must work a minimum of 500 hours in each six- (6) month bonus period to stay eligible.
10. Employee must be working for the Company on the last day of the bonus period.

## EMPLOYEE WARNING RECORD

GENERAL INFORMATION			
Employee's Name			
Date of Warning			
<b>Check One:</b>			
<input type="checkbox"/> Attendance	<input type="checkbox"/> Insubordination	<input type="checkbox"/> Work Quality	
<input type="checkbox"/> Carelessness	<input type="checkbox"/> Lateness/Early Quit	<input type="checkbox"/> Unauthorized Absence	
<input type="checkbox"/> Safety Violation	<input type="checkbox"/> Willful Damage to Equipment	<input type="checkbox"/> Refusal to Work Overtime	
If other than above explain:			
<input type="checkbox"/> Verbal Warning	<input type="checkbox"/> Written Warning	<input type="checkbox"/> Termination	
EMPLOYER STATEMENT			
<b>DISCIPLINARY ACTION TAKEN</b>		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Explain:			
Supervisor Signature		Date	
Signature of Witness		Date	
EMPLOYEE STATEMENT			
	I have read this "WARNING" and agree with the statements		
	I disagree with the employer's description of the violation.		
The reasons are:			
Employee Signature		Date	

## **COMMUNICATIONS**

The elements of the Company Environmental Health and Safety (EHS) system shall be communicated to all employees in a readily understandable manner and shall include at a minimum, regularly scheduled monthly safety meetings, daily safety meetings for non routine projects, and anonymous communications.

### **A. Monthly Safety Meetings**

Monthly safety meetings are normally held at the shop. At times, the regularly scheduled monthly safety meetings may be postponed and/or held at other locations due to work schedules. If a scheduled safety meeting is postponed the company may require additional meetings to ensure a minimum of twelve are held throughout the year. These meetings will be organized and instructed by the facility supervisor and / or Safety Representative. At times the monthly safety meetings may be instructed by invited guest speakers, such as industry consultants or insurance representatives.

Planned monthly safety meetings may also include training sessions according to the company's required training schedule, or other related topics deemed necessary by the Safety Representative.

### **B. Daily Safety Meetings**

Daily safety meetings shall be required for any non-routine, hazardous, or large scale projects (i.e., spill clean up, confined space entry, lockout tagout, in service hot tapping, excavations greater than five feet deep.....). It shall be standard practice to include both subcontractor and company personnel into safety meetings relating to an effected project.

Documentation of required safety meetings shall be performed on the company "Safety Meeting/Training Record" (Form 2031) a copy of which shall be sent to the main office upon completion.

### **C. Anonymous Communication**

A system for communicating safety concerns without fear of reprisal has been established by the company. The purpose of which is to allow an employee a way to voice concerns about safety. Safety suggestions shall be evaluated daily and corrections shall be made in a timely manner.

In addition to these communication tools the Company shall use other bulletin board postings, inter-company memos and safety meeting minutes to inform employees of company safety performance.

## SAFETY MEETING/TRAINING RECORD

Date: \_\_\_\_\_

Type of Meeting:    ☐ Daily/Tailgate    ☐ Monthly    ☐ Other: \_\_\_\_\_

Topic of Meeting/Training Session: \_\_\_\_\_

Location: \_\_\_\_\_ Prepared by: \_\_\_\_\_

Other Issues/Suggestions Raised: \_\_\_\_\_

Follow-up  
Required: \_\_\_\_\_

Name	Company	Name	Company
1.		16.	
2.		17.	
3.		18.	
4.		19.	
5.		20.	
6.		21.	
7.		22.	
8.		23.	
9.		24.	
10.		25.	
11.		26.	
12.		27.	
13.		28.	
14.		29.	
15.		30.	

*Completed copies of this form must be routed to the Safety Representative  
and kept in the safety files for at least one year.*

## **IDENTIFICATION AND CORRECTION OF WORKPLACE HAZARDS**

Regular, periodic workplace safety inspections must be conducted by the company. The inspections should be noted on a "Action Item Matrix" *report* (Form 2041) or other documentation, and the company must maintain copies of this documentation for at least one year. These regular inspections will be supplemented with additional inspections whenever new substances, processes, procedures, or equipment introduced into the workplace represent a new occupational safety and health hazard or whenever supervisors are made aware of a new or previously unrecognized hazard.

Generally, supervisors are responsible for identification and correction of hazards that their employees and/or contractors are exposed and should ensure that the work areas they exercise control over are inspected regularly. Supervisors should check for safe work practices with each visit to the workplace and should provide immediate verbal feedback where hazards are observed.

A hazard Assessment report may also be complete and submitted by an employee anonymously, or as a referral to the Safety Representative as a result of a condition discovered during an inspection, or which the responsible supervisor could not determine an immediate remedy.

### **General Requirements**

1. In addition to the hazard assessment methods mentioned above the Company uses several other processes to identify potential hazards such as JSA's, JHA's, and facility wide or area specific analysis/inspections.
2. Employees and/or sub-contractors must be actively involved in the hazard identification process. Identified hazards must be reviewed with all employees concerned.
3. The hazard identification process is used for routine and non-routine activities as well as new processes, changes in operation, products or services as applicable
4. Hazards are classified/prioritized and addressed based on the risk associated with the task. Refer to the Action Item Matrix (attached) which outlines severity and probability.
5. Identified hazards are addressed and mitigated via the Action Item Matrix (attached). This form documents and assigns responsibilities to appropriate personnel until action items are completed.
6. Employees will be trained in the hazard identification process including the use and care of proper PPE.

## Action Item Matrix

### Action Item Priority Definitions:

1. High risk potential for injury, oil spill, other adverse environmental impacts, or significant property damage. Facility or equipment may exhibit serious degradation or misuse.
2. Moderate risk potential for injury, oil spill, other adverse environmental impacts, or property damage.
3. Low risk potential for injury, oil spill, other adverse environmental impacts, or property damage. Plans, drawings, manuals, or other documentation may be incorrect or outdated. Maintenance needed.

[illegible]

## **ACCIDENT REPORTING AND INVESTIGATING**

### **I. PURPOSE**

All accidents, injuries or potential accidents involving Company employees, subcontractors or properties shall be reported and investigated, and measures shall be taken to prevent reoccurrence of the incident. The following outlines the basic procedure for personnel to follow after an incident. This procedure defines specific responsibilities, incident reporting, and investigation criteria. Blank reports and instructions for reporting an incident online are included within the appendices.

### **II. RESPONSIBILITIES**

#### **FIRST RESPONDER MUST:**

1. Notify The Job Site Supervisor Of Any Accident, Injury, Unsafe Condition Or Practice
2. Control The Scene, i.e. Ensure Proper Care For Injured Personnel, Evacuate The Area, And Tag Unsafe Equipment.

#### **SUPERVISOR MUST:**

1. Ensure Local Emergency Services Are Provided, If Required,
2. Immediately Notify The Safety Representative
3. Issue Report, Investigate And Implement Corrective Measures
4. Route Reports To The Main Office Within 24 Hours.

#### **SAFETY REPRESENTATIVE MUST:**

1. Determine If A Post Accident Drug Test Is Warranted.
2. Review Reports For Accuracy,
3. Ensure Reports Are Routed To Specified Company Departments,
4. Determine Whether Further Investigation Is Warranted,
5. Ensure Appropriate Government Agencies Are Notified.
6. Notify appropriate clients; as required.

### **III. GENERAL REQUIREMENTS**

1. While all incidents should be investigated, the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method. Minor incident shall be investigated and root causes addressed. Serious incidents shall utilize Tap Root or an equivalent process.
2. Serious incidents must be verbally reported to OSHA within 8 hours of their discovery. Incidents must also be reported to the client as soon as possible, or in a timely manner (within 24 hours of incident).
3. Site Supervisors, with the assistance of the Safety Representative have the responsibility for reporting and investigation of an incident.
4. Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques. Training requirements relative to incident investigation and reporting (Awareness, First Responder, Investigation, and training frequency) should be identified in the program.
5. Proper equipment must be available to assist in conducting an investigation. Equipment may include some or all of the following items; writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, etc.
6. Supervisors must identify evidence immediately following the incident. This might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, and physical factors such as fatigue, age, and medical conditions.
7. Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment.
8. Witness interviews and statements must be collected. Locating witnesses, ensuring unbiased testimony, obtaining appropriate interview locations, and use of trained interviewers should be detailed. The need for follow-up interviews should also be addressed
9. All incidents that are investigated will result in corrective actions taken to prevent reoccurrence.
10. Written incident reports will be prepared and include an incident report form and a detailed narrative statement concerning the events. The format of the narrative report may include an introduction, methodology, summary of the incident, investigation board member names, narrative of the event, findings and

recommendations. Photographs, witness statements, drawings, etc. should be included

11. Lessons learned shall be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.

#### IV. INCIDENT REPORTING

Employees who are injured at work must report the injury to their supervisor **immediately**, regardless of severity. Subcontractors who are injured or involved in an accident must report the incident to Company personnel. In either case, if immediate medical treatment beyond first aid is needed, call 911, or refer to site-specific emergency phone list. The injured party must be taken to the appropriate hospital or medical center. If non-emergency medical treatment for work-related injuries, or illnesses, is needed you must still inform your supervisor as to the extent of the injury.

If the injured employee received medical treatment, the supervisor must obtain a medical release form before allowing the employee to return to work. The health care provider may stipulate work tasks that must be avoided or work conditions that must be altered before the employee resumes his or her full duties.

##### GUIDELINES FOR REPORTING AN INCIDENT:

- Gather all relevant information before beginning work on the report. It is important that every question on the report be answered thoroughly.
- Interview witnesses. Obtain the address and phone number of affected parties.
- Obtain a driver license number and insurance policy information from the other driver if the report is for an auto accident.
- Give specific and factual details of what took place. For example, stating "Injury to hand" is not as specific as "abrasions to right index finger."
- A copy of any Accident Report should always be placed in the safety file.

If an incident involves a subcontractor, request an internal report from the subcontractor and attach a copy of their accident report to the printed report. Documentation of an incident shall be performed on one of the following reports:

FORM	DESCRIPTION	USE
2051	Personal Injury Report	To report and investigate a Company employee work related illness or injury.
2052	Vehicle Accident Report	To report a Company vehicle accident
2053	Physical Damage Loss Report	To report and investigate any Company property damage or Loss.
2054	General Liability Report	To report and investigate any Subcontractor employee injury or Loss.

2055	Investigation Report	To Investigate all work related accidents and near misses. This report may also be used to investigate an incident further than the initial report, or investigate a vehicle accident.
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Following the report of every incident a thorough investigation must be performed.

## **V. INCIDENT INVESTIGATION**

Every incident including a near miss must be investigated to determine cause. Measures must then be taken to prevent reoccurrence. All of the company accident reports have a provision for identifying the root cause of an accident, and corrective action required to prevent any similar accident in the future. A separate Accident Investigation Report may be necessary for vehicle accidents and incidents deemed needing closer examination by the Safety Representative.

The site supervisor is responsible for ensuring an investigation is performed to determine and correct the cause(s) of the incident. Specific procedures that can be used to investigate workplace accidents and hazardous substance exposures include the following:

### **GUIDELINES FOR INVESTIGATING AN INCIDENT:**

- Interviewing injured personnel and witnesses.
- Examining the injured employee's work site for contributing factors.
- Reviewing established procedures to ensure they are adequate and were followed.
- Reviewing training records of affected employees.
- Determining all contributing causes to the accident.
- Recording all findings and actions taken.
- Follow up on findings to ensure hazards are abated.

The supervisor's findings and corrective action required shall be documented and presented to the Safety Representative. If the supervisor is unable to determine the cause(s) and appropriate corrective action, other resources should be sought. Available resources include the President, Superintendents, Safety Representative, and/or other local management personnel.

The Safety Representative will review each accident or injury report to ensure that the investigation was thorough and that all corrective action was taken. A report with incomplete data, or inconclusive root cause and corrective action identified will be routed back to the supervisor for further follow-up.

ID

## PERSONAL INJURY REPORT

Date of incident: Time of incident: Date reported: Time reported: Supervisor:

## AREA INFORMATION

Job Site: Region District Client

## PERSON INJURED

First Name: Last Name: Phone: Years in Industry:

Address: City: State: Zip: Job Title:

Social Security Number: Hire Date: Birth date: Sex: Marital Status:

## MEDICAL INFORMATION

Sent to Doctor? Name of Physician: Physician's Phone: Hospital Address:

## WITNESS 1

Witness First Name: Last Name: Phone:

Address: City: State: Zip:

## WITNESS 2

Witness First Name: Last Name: Phone:

Address: City: State: Zip:

## REPORT SUMMARY

## Description of Incident

## Root Cause

## Corrective Action

## INJURY STATISTICS

Type of Work Type of Injury Body Part Fatality OSHA LWD RWD

Person Responsible for Corrective Action

Report Prepared By:

ID

## VEHICLE ACCIDENT REPORT

Date of incident: Time of incident: Date reported: Time reported: Supervisor:

## AREA INFORMATION

Jobsite

Region

District

## INSURED (COMPANY) VEHICLE/DRIVER

First Name: Last Name: Phone: Driver's License Number:

Address: City: State: Zip: Job Title:

Year of Vehicle: Make: Model: License Plate Number: Vehicle ID Number:

Describe damage to company vehicle including exact point of impact:

## OTHER VEHICLE/DRIVER

First Name: Last Name: Phone: Driver's License Number:

Address: City: State: Zip: Job Title:

Year of Vehicle: Make: Model: License Plate Number: Vehicle ID Number:

Name of Owner (if different from driver)

Owner's Phone

Vehicle Insured? Insurance Company

Policy Number

Where can vehicle be seen?

When?

Describe damage to company vehicle including exact point of impact:

## INJURED PERSON(S) (including all passengers, continue on back if necessary)

First Name: Last Name: Phone: Age:

Address: City: State: Zip: Sex:

## WITNESS 1 (continue on back if necessary)

Witness First Name: Last Name: Phone:

Address: City: State: Zip:

## REPORT SUMMARY

Description of Incident

Root Cause

Corrective Action

Police Report Taken?

Police Division:

Report Prepared By:

ID

# PHYSICAL DAMAGE LOSS REPORT

Date of incident:  Time of incident:  Date reported:  Time reported:  Supervisor:

## AREA INFORMATION

Job Site:  Region:  District:  Client:

## AUTHORITY CONTACTED

Police Called?  Which One?  Contact Person:  Phone:

## LOSS INFORMATION

Kind of Loss (fire, theft, ect..)  Probable amount of loss

## REPORT SUMMARY

### Description of Incident

### Root Cause

### Corrective Action

Person Responsible for Corrective Action

Report Prepared By:

ID

## GENERAL LIABILITY REPORT

Date of incident:  Time of incident:  Date reported:  Time reported:  Supervisor:

## AREA INFORMATION

Job Site:  Region:  District:  Client:

## PERSON INJURED

First Name:  Last Name:  Phone:  Years in Industry:

Address:  City:  State:  Zip:  Job Title:

Social Security Number:  Hire Date:  Birth date:  Sex:  Marital Status:

## INJURED PERSON'S EMPLOYER INFORMATION

Employer:  Employer Contact:  Phone:

Address:  City:  State:  Zip:

## MEDICAL INFORMATION

Sent to Doctor?  Name of Physician:  Physician's Phone:  Hospital Address:

## WITNESS 1

Witness First Name:  Last Name:  Phone:

Address:  City:  State:  Zip:

## WITNESS 2

Witness First Name:  Last Name:  Phone:

Address:  City:  State:  Zip:

## REPORT SUMMARY

## Description of Incident

## Root Cause

## Corrective Action

## INJURY STATISTICS

Type of Work:  Type of Injury:  Body Part:  Fatality:  OSHA:  LWD:  RWD:

Person Responsible for Corrective Action: Report Prepared By:

ID

## INCIDENT INVESTIGATION REPORT

Date of incident:  Time of incident:  Date reported:  Time reported:  Supervisor:

## AREA INFORMATION

Job Site:  Region:  District:  Client:

## PERSON(S) INVOLVED

(1) First Name:  Last Name:  Phone:  Years in Industry:   
Address:  City:  State:  Zip:  Job Title:

(2) First Name:  Last Name:  Phone:  Years in Industry:   
Address:  City:  State:  Zip:  Job Title:

## REPORT SUMMARY

## Description of Incident

## Root Cause

## Corrective Action

## INJURY STATISTICS

Type of Work:  Type of Injury:  Body Part:  Fatality:  OSHA:  LWD:  RWD:

Person Responsible for Corrective Action: Report Prepared By:

## **TRAINING AND INSTRUCTION**

### **I. SCOPE**

Employee safety training is provided at no cost to the employee. Safety training may be presented by a knowledgeable Supervisor, other Company personnel, or by representatives from other relevant specialty companies. Regardless of the instructor, all safety training must be documented using the "Safety Meeting / Training Record" (Form 2031) or an equivalent record that includes all the information required on the Form. The company must retain this documentation for at least one year.

### **II. INITIAL TRAINING**

When the safety management system is first implemented, all company personnel will be trained on the contents, including individual responsibilities under the program, and the availability of the written procedures. Training will also be provided on how to report unsafe acts and conditions, how to access the safety related resources, and where to obtain information on workplace safety and health issues.

Personnel hired after the initial training session will be oriented on this material as soon as possible by the Safety Representative or appropriate supervisor. These individual training sessions will be documented using the, "New Employee Checklist" (Form 4071), or equivalent. The company must also keep this document for at least one year.

### **III. TRAINING ON SPECIFIC HAZARDS**

Supervisors require training on the hazards to which the employees under their immediate control may be exposed. This training aids a Supervisor in understanding and enforcing proper protective measures.

All Supervisors must ensure that the personnel they supervise receive appropriate training on the specific hazards of work they perform, and the proper precautions for protection against those hazards. Training is particularly important for new employees and whenever a new hazard is introduced into the workplace. Such hazards may include new equipment, hazardous materials, or procedures. Health and Safety training is also required when employees are given new job assignments on which they have not previously been trained and whenever a supervisor is made aware of a new or previously unrecognized hazard.

Specific topics which may be appropriate to company personnel include but are not limited to the company "Required Training Schedule (Form 2061).

## REQUIRED TRAINING SCHEDULE

Course			Required				
Tracking Code	Reference Regulatio	Description	Supervisor	Field	Dur	Freq	Man
<b>QUALIFIED EMPLOYEE TRAINING</b>							
QET01	CFR 1910.151, CCR 3400	Bloodborne Pathogens	ALL	ALL	N/R	1yr	Yes
QET02	CFR 1910.1030, CCR 5193	CPR/First Aid	ALL	ALL	N/R	2yr	Yes
QET03	CFR 1910.157, CCR 4848	Fire Equipment/Fire Watch	ALL	ALL	N/R	1yr	Yes
QET04	CFR 1910.1200, CCR 5194	Hazardous Communication	ALL	ALL	N/R	Initial	Yes
QET05	CFR 1910.252, CCR 4848	Hot Work	ALL	ALL	N/R	Initial	Yes
QET06	CFR 250.67, API-55	Hydrogen Sulfide & SCBA	ALL	ALL	N/R	1yr	Yes
QET07	CFR 1910.147, CCR 3314	Lockout/Tagout/Blockout	ALL	ALL	N/R	Initial	Yes
QET08	CFR 1910.146, CCR5157	Confined Space Awareness	ALL	ALL	N/R	Initial	Yes
QET09	CFR 1910.132, CCR 3380	Personal Protective Equipment	ALL	ALL	N/R	Initial	Yes
QET10	49 CFR 172, CCR 5164	Tote Safety Requirements	ALL	ALL	N/R	1yr	Yes
QET11	CFR 1910.119, CCR 5164	Chemical Reactivity	ALL	ALL	N/R	1yr	Yes
<b>JOB SPECIFIC TRAINING</b>							
JST01	CFR 1910.146, CCR5157	Confined Space	W/R	W/R	N/R	Initial	Yes
JST02	CFR 1910.146, CCR5157	Confined Space Rescue	W/R	W/R	N/R	Initial	Yes
JST03	CFR 1926.104, CCR 1670	Fall Protection	W/R	W/R	N/R	Initial	Yes
JST04	CFR 1910.38, CCR 3220	Emergency Response/Action Plan	ALL	ALL	ALL	Initial	Yes
JST05	CFR 1910.331, CCR 2982	Electrical Safety (lowvoltage)	ALL	ALL	N/T	Initial	Yes
JST06	CFR 1910.120, CCR 5192	Hazwoper – Onsite Worker	W/R	W/R	24/8 hrs	1yr	Yes
<b>REQUIRING THE USE OF RESPIRATOR</b>							
RUS01	CFR 1910.134, CCR 5144	Respiratory Protection Plan	W/R	W/R	N/R	1yr	Yes
RUS02	CFR 1910.134, CCR 5144	Respirator Fit Test	W/R	W/R	N/R	1yr	Yes
RUS03	CFR 1910.134, CCR 5144	Respiratory Medical	W/R	W/A	N/R	Initial	Yes
<b>HEAVY EQUIPMENT RELATED</b>							
HER01	CFR 1910.178, CCR 3668	Forklift Operating and Rules	W/R	W/R	N/R	3 yr	Yes
HER02	CCR 5006.1, API RP 2D	Rigger Training	W/R	W/R	N/R	W/R	Yes
<b>CALIFORNIA SPECIFIC</b>							
CAL01	CCR 3395	Heat Stress	W/R	W/R	N/R	1yr	Yes
CAL02	CCR 3203	IIPP (SB198)/Safe Practices	ALL	ALL	N/R	Initial	Yes
CAL03	AB 1825	Harassment	ALL	ALL	N/R	2yr	Yes
<b>DOT SPECIFIC</b>							
DOT01	49 CFR 199.19(c), & .241	Supervisor Drug/Alcohol	W/R	Supv.	N/R	Initial	Yes
<b>WORK AREAS EXCEEDING 85 DbA</b>							
HNA01	CFR 1910.95, CCR 5095	Hearing Conservation, Req.>85DbA	W/R	W/R	N/R	1yr	Yes
HNA02	CFR 1910.95, CCR 5095	Audiometric Testing	W/R	W/R	N/R	1yr	Yes
<b>OPTIONAL TRAINING</b>							
OPT01	BEST PRACTICES	Asbestos Awareness	W/R	W/R	N/R	W/R	No
OPT02	BEST PRACTICES	Back Injury Protection	W/R	W/R	N/R	W/R	No
OPT03	BEST PRACTICES	Benzene Awareness	W/R	W/R	N/R	W/R	No
OPT04	BEST PRACTICES	Defensive Driving	W/R	W/R	N/R	W/R	No
OPT05	BEST PRACTICES	Endangered Species	W/R	W/R	N/R	W/R	No
OPT06	BEST PRACTICES	Ergonomics	W/R	W/R	N/R	W/R	No
OPT07	BEST PRACTICES	Explosives	W/R	W/R	N/R	W/R	No
OPT08	BEST PRACTICES	Hazardous Waste Management	W/R	W/R	N/R	W/R	No
OPT09	BEST PRACTICES	Housekeeping	W/R	W/R	N/R	W/R	No
OPT10	BEST PRACTICES	Office Safety	W/R	W/R	N/R	W/R	No
OPT11	BEST PRACTICES	Safe Work Permits	W/R	W/R	N/R	W/R	No
OPT12	BEST PRACTICES	Slips, Trips, Falls	W/R	W/R	N/R	W/R	No
OPT13	BEST PRACTICES	Stairs and Ladders	W/R	W/R	N/R	W/R	No

### Abbreviation Key

Dur = Duration, Freq = Frequency, Man = Mandate by Agency, 8Ref. = Annual 8 Hr Refresher  
N/R = No Time Requirement W/R = When Required for Position

## **MAINTENANCE OF RECORDS**

Documents related to the Environmental, Health and Safety (EHS) system are maintained in the main office. Certain documents related to the program must be kept by the company for at least one year. These records include:

- Employee safety meeting / training records, including the names of all attendees and instructors, the training date, and material covered (Form 2031)
- Records of scheduled and periodic workplace inspections, including the persons conducting the inspection, any identified unsafe acts, or conditions, and corrective action taken (Form 2041)
- Incident/Investigations Reports  
(Forms 2051, 2052, 2053, 2054, and 2055)
- Applicable Training Records

Other records relating to this EHS management system shall be kept on file for a time frame deemed adequate by the Safety Representative.

### **ALCOHOL/DRUGS AND ILLEGAL WEAPONS**

The Company drug, alcohol and contraband policies are expressed in various forms in the Company Safety Manual, Employee Handbooks, and Drug/Alcohol Program.

Company Policies are intended to provide a work-place free of drugs, alcohol and contraband. They strictly prohibit the use, sale, distribution or possession of contraband, alcohol or unauthorized mind altering substances and/or being under the influence of alcohol or unauthorized mind altering substances while on Company premises, in Company vehicles or while on Company business.

Violations of these Policies may result in immediate discharge, and/or be reported to law enforcement authorities.

The Company will require a drug screen for new employees who may be assigned to Safety Sensitive Positions, employees transferred or promoted to Safety Sensitive Positions and employees returning to Safety Sensitive Positions after an absence of 90 days or more. The Company reserves the right to require employees to submit to alcohol or drug testing on a random basis as determined by government regulations and management and on periodic unannounced basis for reasonable cause as determined by management. If an employee tests positive, or refuses the testing, the employee will be discharged.

Contraband includes the unauthorized possession of Company or employee property and possession of deadly weapons, explosives, illegal drugs, drug paraphernalia and alcoholic beverages. Deadly weapons include a firearm or anything designed, made or adapted for the purpose of inflicting bodily harm. Ordinary pocketknives with a blade length of five inches or less are generally excluded from this definition. Explosives include all types except those required for specific, company requested operations. Entry onto Company property or work location, including parking areas and vehicles, is deemed consent to an inspection of person, vehicle, Company furnished living quarters and personal effects at any time. If an employee refuses this inspection, the employee will be discharged immediately.

Other than in statistical form, an individual's drug test results will be treated as confidential. The test results will not be released without the written consent of the individual. The exception is that individual's information must be released upon request by certain regulatory agencies.

All contractors working on Company premises or while on Company business are subject to the provisions of these Policies.

## COMPRESSED GAS CYLINDERS

### GENERAL REQUIREMENTS

1. Employees in charge of the oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems shall be instructed for this work before being left in charge.
2. Rules and instructions covering the operation and maintenance of oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems shall be readily available.
3. Specific procedures must be used when possible evolution's of hazardous fumes, gases or dust to the metals are involved. Any welding, cutting or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints not listed here shall have proper ventilation or respiratory protection.
4. A fire prevention and suppression procedure shall be established whenever any welding and cutting operations are taking place.
5. Cylinders must be kept in the upright position during use and storage. Welding fuel-gas cylinders shall be placed with valve end up whenever they are in use. Liquefied gases shall be stored and shipped with the valve end up.
6. Cylinders shall be handled carefully. Rough handling, knocks, and falls are liable to damage the cylinder, valve or safety devices and result in leakage.
7. Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The valve shall be opened while standing to one side of the outlet; never in front of it. A fuel-gas cylinder valve shall never be opened up, cracked near other welding work or near sparks, flame, or other possible sources of ignition.
8. Cylinders containing oxygen or acetylene or other fuel or gas shall not be taken into confined spaces.
9. Cylinders having leaking fuse plugs or other leaking safety devices shall be plainly tagged, and the supplier shall be promptly notified of the condition and his instructions followed. A warning shall be placed near the cylinders prohibiting any approach to them with a lighted cigarette or other source of ignition.

## **A. Handling Cylinders**

1. Do not move or store cylinders without properly installing the protective cap over the valve.
2. Cylinders are smooth, heavy and difficult to hand carry. When they must be moved without a cart, use a carrier or get help.
3. Cylinders moved by a crane or derrick should be secured in a basket or similar device and should not be dropped. Use of slings, ropes or electromagnets is prohibited.
4. Cylinders should not be allowed to strike each other.
5. Cylinders should not be used for rollers, supports, or any purpose other than to contain gas.

## **B. Using Cylinders**

1. Threads on a regulator or fitting must correspond to those on the cylinder valve outlet. Do not force or modify connections.
2. Never use a cylinder of compressed gas without a pressure-reducing regulator to the cylinder valve, except where the total system is specifically designed to handle maximum cylinder pressure.
3. Use regulators and pressure gauges only with gases and pressure ratings for which they are designed and intended.
4. Close the cylinder valve before attempting to stop leaks between the cylinder and regulator.
5. Never permit sparks, molten metal, electric currents, excessive heat or flames to contact the cylinder or attachments.
6. Never use oil or grease as a lubricant on valves or attachments to oxygen cylinders.

### **C. Storing Cylinders**

1. Cylinders should be properly secured with chain to prevent falling.
2. Oxygen cylinders should not be stored within 20 feet of combustible gas cylinders or near any other substance where a fire could result, unless protected by a wall at least five feet high having a fire resistance rating of at least 30 minutes.
3. Cylinders should be stored in a safe, dry, well-ventilated area that limits corrosion damage and deterioration. Hydro-test should be current.
4. Empty and full cylinders should be stored separately, and plainly identified.

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## **ELECTRICAL AWARENESS**

### **ELECTRICAL AWARENESS**

1. Training requirements for employees in safety related work practices that pertain to their respective job assignments include: (Employees who face a risk of electric shock but who are not qualified persons shall be trained and familiar with electrically related safety practices. Employees trained in safety related work practices that pertain to their respective job assignments. 3. Electrical clearance distances for personnel working around live feeds.
2. Safe work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized.
3. Conductors and parts of electrical equipment that have been deenergized but not been locked or tagged out shall be treated as live parts.
4. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both.
5. Employees shall not work on or near exposed energized parts. Applies to work performed on exposed live parts (involving either direct contact or by means of tools or materials) or near enough to them for employees to be exposed to any hazard they present.
6. Only qualified persons may work on electric circuit parts or equipment that have not been deenergized. Such persons shall be made familiar with the use of special precautionary techniques, PPE, insulating & shielding materials and insulated tools.
7. When working under overhead lines clearance distance must be provided or lines shall be deenergized and grounded.
8. Unqualified persons must maintain an approach distances of 10' for 50kV plus 4" for every additional 10kV.

9. Qualified employees must adhere to the approach distances in Table S5. Refer to table for higher line voltages. Unqualified personnel shall not approach live electrical.

TABLE S5

Voltage range (phase to phase)   Minimum approach distance	
300V and less .....	Avoid Contact
Over 300V, not over 750V .....	1 ft. 0 in. (30.5 cm).
Over 750V, not over 2kV .....	1 ft. 6 in. (46 cm).
Over 2kV, not over 15kV .....	2 ft. 0 in. (61 cm).
Over 15kV, not over 37kV .....	3 ft. 0 in. (91 cm).
Over 37kV, not over 87.5kV .....	3 ft. 6 in. (107 cm).
Over 87.5kV, not over 121kV .....	4 ft. 0 in. (122 cm).
Over 121kV, not over 140kV .....	4 ft. 6 in. (137 cm).

10. Vehicular and mechanical equipment must maintain clearance distances of 10 ft. at all times.
11. Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to work safely.
12. Protective shields, protective barriers or insulating materials as necessary shall be used when working in confined or enclosed work spaces where electrical hazards may exist.
13. Portable ladders shall have non-conductive side rails.
14. Conductive items of jewelry or clothing shall not be worn unless they are rendered non-conductive by covering, wrapping or other insulating means.

#### **GENERAL REQUIREMENTS (State specific)**

1. Only qualified persons shall work on electrical equipment or systems.
2. Work shall not be performed on exposed energized parts of equipment or systems until the following conditions are met:
  - Responsible supervision has determined that the work is to be performed while the equipment or systems are energized.
  - Involved personnel have received instructions on the work techniques and hazards involved in working on energized equipment.
  - Suitable personal protective equipment and safe guards are provided and used

3. Duties of the authorized person after the required work on an energized system or equipment include: (1) Removing from the work area any temporary personnel protective equipment and (2) reinstalling all permanent barriers or covers.
4. All electrical equipment and systems shall be treated as energized until tested or otherwise proven to be de-energized.
5. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both.
6. Suitable temporary barriers, or barricades, shall be installed when access to opened enclosures containing exposed energized equipment is not under the control of an authorized person.
7. Conductive measuring tapes, ropes or similar devices shall not be used when working on or near exposed energized conductors or parts of equipment. Conductive fish tapes shall not be used in raceways entering enclosures containing exposed energized parts unless such parts are isolated by suitable barriers.

#### **USE OF PORTABLE ELECTRIC EQUIPMENT (Cords and Plugs)**

1. All cord- and plug- connected electric equipment, flexible cord sets (extension cords), and portable electric equipment shall be handled in a manner that will not cause damage.
2. Company policy and the National Electric Code (NEC) requires the use of an approved ground fault circuit interrupter (GFCI) for used on all portable equipment tool cords.
3. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment.
4. Flexible cords may not be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.
5. Portable cord and plug connected equipment and flexible cord sets (extension cords) shall be visually inspected for external defects (such as loose parts, deformed and missing pins, or damage to outer jacket or insulation) and for evidence of possible internal damage (such as pinched or crushed outer jacket) before use on any shift. However, cord- and plug- connected equipment and flexible cord sets (extension cords) which remain connected once they are put in place and are not exposed to damage need not be visually inspected until they are relocated.

6. If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item shall be removed from service, and no employee may use it until necessary repair and tests have been made to render the equipment safe.
7. Whenever an attachment plug is to be connected to a receptacle (including any on a cord set), the relationship of the plug and receptacle contacts shall first be checked to ensure that they are of proper mating configurations.
8. A flexible cord used with grounding-type equipment shall contain an equipment grounding conductor.
9. Attachment plugs and receptacles may not be connected or altered in a manner that would prevent proper continuity of the equipment grounding conductor at the point where plugs are attached to receptacles. Additionally, those devices may not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the current-carrying conductors.
10. Adapters that interrupt the continuity of the equipment grounding connection may not be used.
11. Portable electric equipment and flexible cords used in highly conductive work locations (such as those inundated with water or other conductive liquids), or in job locations where employees are likely to contact water or conductive liquids, shall be *approved* for those locations.

### **HEALTH AND PHYSICAL REQUIREMENTS**

1. All personnel must be physically and mentally fit for duty. Fitness for duty is the ability to work safely.
2. Workers who are not fit for duty will not be allowed on the job site.
3. Personnel shall NEVER work under the influence of any form of intoxicant or drug.
4. Personnel may never perform work if they are under the influence of a medicine that could affect their ability to work safely.
5. Employees must never come to work if they are feeling tired, or sick.
6. Personnel taking prescription medicine must notify their supervisor and have a valid prescription or label for use of their medicine.
7. Supervisors shall watch for workers that are unfit for duty. They will take appropriate steps, such as, take a worker home, or arrange for other transportation when he or she seems unfit for duty.

### **HEAVY EQUIPMENT**

1. When working near any piece of operated equipment such as a stinger truck, backhoe, crane, tractor, A-frame or pick-up truck, make sure the operator of the equipment is aware that you are in the vicinity of the work area. You should always try to make eye contact with an operator so as to be sure that they see you.
2. When working with or near heavy equipment, frequently check around yourself and make sure you are not between the equipment or load and a stationary object. If you see others in a potential "pinch point" warn them immediately.
3. Standing under any suspended load is strictly prohibited.
4. Heavy equipment always has the right-of-way.
5. Anybody riding on a backhoe other than the operator is prohibited.
6. Keep a safe distance while a backhoe is operating or moving the stabilizers. Individuals should remain a minimum of 20 linear feet from the backhoe end of the tractor while it is operating, especially in trenches or other excavations where the ability to move quickly and freely is adversely effected. No one is allowed in a bell hole while a backhoe is excavating.
7. Locate utility lines and overhead power lines before starting to dig. Do not operate a backhoe within fifteen feet of overhead electrical lines.
8. Never attempt to lift loads in excess of the backhoe capacity.
9. Never get under the backhoe bucket or reach through the lift arms when the bucket is raised.
10. Use care in attaching towing lines to the backhoe. Pulling from the tractors rear axle or any point above the tractors rear axle may cause an accident.
11. When working with a crane never place any part of the machine or load within Fifteen feet of a power line.
12. Never exceed load capacities specified by the manufacturer.
13. A crane is least stable when operating from the side position.
14. A qualified spotter should assist the operator in placing or retrieving a load. Use only one spotter. A confused operator is more likely to have accidents.

15. The crane operator is responsible for the condition of the cable and associated rigging.
16. When equipment is moved with a crane a tag line must be attached to the load, so the oiler/helper can stand in the clear and still control the load. An exception to this rule is when a tag line presents additional hazards such as catching on a stationary object.
17. Never attempt to operate a crane without management approval and proper training.
18. All crane operators must have a valid California Commercial driver's license.

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### HOUSEKEEPING

1. Scrap lumber and debris must be kept reasonably clear from work surfaces, passageways and stairs.
2. Every job site, shop or office shall be kept in an orderly manner.
3. Storage facilities, vehicles and equipment shall be kept in a safe, clean condition.
4. Combustible scrap and debris shall be removed at regular intervals during the course of construction.
5. Proper containers shall be provided for the collection and separation of waste, trash and oily rags.
6. Piping shall be properly stored on racks, or chocked to prevent movement.
7. Materials for the job shall be kept in an orderly fashion not to interfere with the work at hand.

### LADDERS

1. Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
2. Ladder safe work practices must be followed. This includes not standing on the top two rungs of a step ladder, facing the ladder when ascending or descending, and instructing employees to not carry objects that could cause injury in the event of a fall.
3. Ladders shall not be loaded beyond the maximum intended load for which they were built, nor beyond the manufacturer's rated capacity.
4. Ladders shall be used only for the purpose for which they were designed. Never use ladder in a horizontal position or as scaffolding, do not place ladders on top of boxes, barrels, crates, etc.
5. Ladders shall be inspected by a competent person for visible defects prior to each use, on a periodic basis and after any occurrence that could affect their safe use.
6. Portable and fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and shall be withdrawn from service until repaired.
7. The ladder side rails shall extend at least 3 feet (.9m) above the upper landing surface. When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.
8. Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter (1/4) of the working length of the ladder. (The distance along the ladder between the foot and the top support.)
9. Ladders shall be placed on stable, level surface. Employees may not stand on top two rungs, or top of step ladders. Employees may not carry anything in hands that could cause injury in case of fall. Employees must face the ladder when ascending or descending.
10. Always face the ladder when climbing or descending.
11. Never stand on the top three rungs of a ladder.

12. No ladder shall be erected within 10 feet of a power line.
13. All ladders must be secured from movement.
14. Extension ladders must have both top and bottom tied off before work is performed.
15. Metal ladders must never be used where there is an exposure to electrical hazards. They shall have non-conductive side rails.
16. All ladders shall be erected so at least three feet of the rails extend over the landing.
17. Ladders shall be of the proper size and design for which it is used.
18. Any ladder found in an unsafe condition shall be removed from service.
19. It is prohibited to place a ladder in front of doors opening toward the ladder except when the door is blocked open, locked or guarded.
20. It is prohibited to place ladders on boxes, barrels, or other unstable bases to obtain additional height.
21. Employees are prohibited from using ladders that are broken, missing steps, rungs, or cleats, broken side rails or other faulty equipment.
22. It is required that when portable rung or cleat type ladders are used the base is so placed that slipping will not occur, or it is lashed or otherwise held in place.
23. Employees are prohibited from using ladders as guys, braces, skids, gin poles, or for other than their intended purposes.

### LIFTING

1. No employee shall be required to lift more than they can easily manage.
2. Use a forklift or other lifting device on heavy lifts.
3. When material must be carried, use proper lifting and carrying techniques:
  - a. Keep feet apart, one along side and one behind the object to be lifted. Feet should be comfortably spread to give stability.
  - b. Keep back arched. An arched back means the spine, back muscles and body are in correct alignment.
  - c. Grip the object with your whole hand, both the palm and fingers.
  - d. Keep the elbows and arms tucked to side of body. This reduces fatigue in chest and arm muscles and is the position where the most power can be generated for lifting. This position also helps control the body's center of gravity.
  - e. Keep head high and chin tucked in.
  - f. Keep your body weight (center of gravity) directly over your feet. Start the lift with the thrust of the foot behind the object being lifted. Bring the load close to your body for the most efficient carrying position. Lift smoothly. Do not jerk up, back or rotate quickly.
  - g. To raise an object above shoulder height, first lift the waist height.
  - h. To change direction, turn the entire body, including the feet. DO NOT twist your body at the waist while lifting.
  - i. Do not carry an object that is too big to see over or around.
  - j. For objects that are too large or bulky to be carried by one person, use proper moving equipment or GET HELP.

### **General Requirements**

1. Before manual lifting is performed, a hazard assessment must be completed. The assessment must consider size, bulk, and weight of the object(s), if mechanical lifting equipment is required, if two-man lift is required, whether vision is obscured while carrying and the walking surface and path where the object is to be carried.
2. Training on proper lifting techniques shall be provided. The intent is to avoid musculoskeletal injuries. Training must include general principles of ergonomics, recognition of hazards and injuries, procedures for reporting hazardous conditions, and methods and procedures for early reporting of injuries. Additionally, job specific training shall be given on safe lifting and work practices, hazards, and controls.
3. Any injury caused by improper lifting shall be investigated. Investigation findings shall be incorporated into work procedures to avoid future injuries. Musculoskeletal injuries caused by improper lifting must be investigated and documented.
4. Where use of lifting equipment is impractical or not possible, two man lifts must be used.
5. Site supervision must periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries. New operations shall be evaluated to engineer out hazards before work processes are implemented.
6. Manual lifting equipment such as dollies, hand trucks, lift-assist devices, jacks, carts, hoists must be provided for employees. Other engineering controls such as conveyors, lift tables, and work station design should be considered.
7. Use of provided manual lifting equipment by employees must be enforced by site supervisors.

**LOADING AND HAULING EQUIPMENT**

1. All loads hauled on vehicles MUST be securely tied down with approved rope, straps or chains.
2. Under no circumstances shall a load be hauled with out proper tie downs.
3. When loading a flat bed place load as far forward as possible preferably against a stationary object such as a head ache rack. When this is not feasible place the load centered over the rear axle.
4. Before hauling a load make a quick walk around the vehicle to assure all tool boxes are closed and that the load is secure.
5. When hauling a load check to be sure the load stays secure while under way. It's a good idea to pull over and re-tighten your load periodically.
6. It's the driver's responsibility to assure that the vehicle is rated for the weight that is carried on it.

## **OFFICE SAFETY RULES**

Many people have the misconception that office work is not hazardous and consider office injuries inconsequential. The listed precautions, along with each individual's safe behavior, can serve as a basis for an effective office safety program and the prevention of unsafe acts and conditions.

### **A. Examples of Office Incidents**

- Falls from chairs
- Slips, trips and falls on the same level or from elevations
- Lifting or moving heavy or bulky objects
- Repetitive or awkward movements (ergonomics)
- Falling objects or encounters with fixed or moving objects
- Pinches, mashes or abrasions
- Eye strain or muscle aches

### **B. Precautions**

1. Safety meetings should be held at regular intervals by office supervisors.
2. Office personnel going to field locations should be aware of the training and personal protective equipment that will be required for their visit. Ensure you bring the equipment with you, or make arrangements for the field to furnish the equipment before you arrive.
3. Be familiar with the location of the fire alarm pull station nearest to your work station.
4. Become familiar with emergency procedures and know the appropriate evacuation route for your work station. Evacuation routes for each floor and building area are clearly marked. Personnel are responsible for visitor orientation and evacuation.
5. Properly position a chair before sitting down, and once seated, keep at least one foot and all chair legs on the floor at all times.
6. Keep all passageways, entryways, aisles, storerooms, service rooms and work areas clean, orderly, sanitary and well maintained, with no obstructions.

7. Aisles and hallways shall provide unobstructed movement and immediate access to emergency exits and to fire protection equipment.
8. Safely stack materials and boxes to avoid creating a hazard.
9. File drawers and desk drawers should not be left open. Do not overload top drawers so that files tip over. Secure file cabinets and bookcases as appropriate. Keep heavy files in lower drawers.
10. Do not open a file drawer if someone is working underneath.
11. Each work station should be arranged to meet specific individual needs. Select the proper chair, adjust the chair height, organize the desk, position the video display terminal (VDT) screen, and position the keyboard to suit the individual.
12. When working at a VDT or PC for long hours, periodically change position, stand up, or stretch to relieve muscle tension and eye strain.
13. Lighting should be installed or positioned to minimize direct or reflected glare or harsh shadows and to counteract potential stress and eye fatigue in VDT users.
14. Use of extension cords should be minimized and arranged to avoid tripping hazards and electrical overload.
15. Do not pull an electrical cord to shut off power to any equipment.
16. Disconnect (unplug) the power source before trying to remove jammed materials from a machine.
17. Installation or repair of any electrical equipment shall be done by qualified workers using only approved materials.
18. Office machines with moving parts, high temperature hazards, and electrical shock potential shall not be operated without proper safeguards in place.
19. Keep flammable or combustible material and residue in a building or operating area to a minimum. Stored in metal safety cans or storage cabinets which meet Underwriter's Laboratories, Inc. or Factory Mutual approval.
20. Keep food, drink and excessive combustible materials away from electrical equipment, computers, work stations or PC's. Damage to circuitry or destructive fires may result.
21. Secure paper cutter blades in the down position when not in use.

22. Store Xacto knives, thumb tacks and other sharp objects in proper containers or with the blades and points covered or shielded. Secure sharp edges before disposing of these items.
23. Do not scoot across the floor while sitting in a chair and do not lean sideways from a chair to pick up an object.
24. Use only stools or step ladders to reach materials stored above eye level. Rolling stools and ladders should be equipped with brakes that operate automatically when weight is applied. Chairs are unacceptable to use as climbing devices.
25. When moving equipment, furniture, or boxes, use proper carts, dollies or trucks.

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## **PERSONAL PROTECTIVE EQUIPMENT**

Personal Protective Equipment (PPE) is among the most obvious forms of controlling incidents in the work place. Each person employed at the Company shall be made available the proper PPE for the task at hand. It is the employee's responsibility to then follow proper maintenance, and replacement procedures to ensure paramount protection during their course of employment. There are no excuses for not donning the proper PPE. When in doubt an employee should consult a Supervisor, Safety Representative, or simply look up requirements on a safety data sheet.

PPE shall be provided, used and maintained in a sanitary and reliable condition. PPE hazard assessments shall be via appropriate Job Safety Analysis (JSA) and/or applicable safe work procedures. It is essential that each employee is properly fitted to the PPE selected. Defective or damaged PPE shall NOT be used. Employee owned equipment shall be maintained in accordance with the provisions outlined below:

### **EYE and FACE PROTECTION**

1. ANSI Z 87.1 approved, safety glasses with side shields are required on all job sites by all personnel.
2. Full face shields in combination with ANSI approved safety glasses are required when engaging in any activity that includes hazards to the unprotected face and eyes from chipped or flying particles. Some examples are chipping, scraping, buffing, grinding, etc.
3. Contact lenses should not be worn on job sites where there is a risk of liquid spray from hydrocarbons, chemicals, acid, caustics, or any liquid substances that can burn, or be corrosive to the eye. Wearers of contact lenses must inform their supervisors and co-workers that they wear the lenses so that the proper emergency treatment can be given if necessary.
4. Splash proof goggles are required when handling hazardous chemical liquids, powders, or vapors. Goggles are also required when an individual is in the immediate vicinity of these chemicals.
5. Beards that constitute a hazard while a person is near moving machinery or rotating tools are not permitted.

### **FOOT PROTECTION**

1. ASTM Rated F2413-05 M I/75 C75 approved steel toe boots must be worn on all job sites.
2. Hobnailed boots, or boots with protruding nails or metal taps are PROHIBITED.

3. Non-slip soles that are oil resistant are recommended.
4. Lace up boots are highly preferred to slip on type, due to the increased ankle support.

### **HAND PROTECTION**

1. Heavy leather gloves shall be worn any time an employee is using an abrasive grinder.
2. Leather or leather palm gloves should be worn when wire rope is being handled.
3. Chemical resistant gloves must be worn when acids, solvents, caustic soda, and soda ash are handled.
4. Insulated gloves must be worn when regular work gloves cannot adequately protect against burns.

### **HEAD PROTECTION**

1. Hardhats must meet ANSI-Z89.1, type I or Type II, specifications.
2. Hard hats must be worn by all employees on all job sites. No exceptions!
3. They must be worn in the appropriate manner. Not Backwards!
4. Metal hard hats are not allowed under any circumstances.
5. Long hair enough to constitute a hazard while a person is working near moving machinery or rotating tools and equipment must be secured by a net or tied back. Hair styles that make it impossible for a person to properly wear a hard hat are NOT PERMITTED.

### **BODY PROTECTION**

1. Nomex (fire proof) coveralls may be required inside any gas plant or receiving facility.
2. The wearing of jewelry such as rings, watchbands or neck chains on the job is discouraged because it can cause or contribute to accidents and injury.

3. Loose clothing is strictly prohibited. This includes neck ties, over sized jackets, and baggy clothes.
4. In the event an employee's clothing becomes saturated with oil, gasoline, or other chemicals the employee should immediately wash the exposed skin area with soap and water and change clothes to prevent skin irritation and risk of combustion.

## **HEARING PROTECTION**

1. Noise levels above 90 dBA require hearing protection. If a person has to speak up to be heard then hearing protection will be required.
2. Appropriate hearing protection is provided by the Company and must be worn by all personnel in areas where signs are posted warning of excessive noise levels. Hearing protection must also be worn in areas that are not posted, but suspected of temporary excessive noise, such as where jack hammering or sand blasting are taking place.
3. Refer to Hearing Conservation Program section for additional information regarding hearing protection.

## **RESPIRATORY PROTECTION**

1. When appropriate engineering, or operational controls are not practical to limit harmful exposure to air borne contaminants, a MSHA or NIOSH approved respirator must be worn by employees.
2. Refer to Respiratory Protection Program section for additional information on Respiratory Protection.

## **TRAINING**

When PPE is necessary for work assignment training will be provided.  
Appropriate training will cover:

- What PPE is necessary;
- How to properly don, doff, adjust & wear PPE;
- The limitations of PPE;
- The proper care, maintenance, useful life & disposal of PPE.

Retraining is required when the workplace changes, making the earlier training obsolete; the type of PPE changes; or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding. Certification records must include the employee name, the dates of training, and the certification subject.

## **HAZARD ASSESSMENT AND EQUIPMENT SELECTION**

The Company shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the Company shall:

- Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;
- Communicate selection decisions to each affected employee; and,
- Select PPE that properly fits each affected employee.

The Company shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.

## **DEFECTIVE AND DAMAGED EQUIPMENT**

Defective or damaged personal protective equipment shall not be used. Any damaged or defective PPE shall be removed from service and properly disposed.

## **PPE HAZARD ASSESMENT RESPONSIBILITIES**

It is a management responsibility to identify the need for, and to provide personal protective equipment for the work force. OSHA requires formal analysis and definition of such equipment, as well as training on how to use, and when and where such equipment is required.

In order to meet these requirements, and in order to maintain a safe working environment, it will be necessary for all supervisors and managers to analyze the potential job hazards within their area.

Each job must be evaluated for Personal Protective Equipment needs. The following table shall be used to evaluate core tasks within the Company. Contact the Company Safety Representative to evaluate PPE needs for tasks not found on the assessment form.

### PPE HAZARD ASSESSMENT

<b>Tasks, Job Classification or Workstation</b>	<b>Potential Hazard</b>	<b>Type of PPE Required</b>
Arc Welding or Cutting	Electric shock, metal sparks, molten and hot metal, UV, IR, arc visible light, falling, dropping, rolling and sharp objects.	Insulated/heat and puncture resistant gloves, steel toed boots, hard hat, safety glasses, welding shield or helmet with appropriate eye shade.
General Mechanical	Flying particles, falling, falling objects, cuts/puncture, lifting/carrying, noise	Safety glasses, steel toed boots, hard hat, cut/puncture resistant gloves, fall protection when working at elevations. Appropriate respirator. When using high speed power tools, a face shield.
Metal Grinding	Flying particles, falling, falling objects, cuts/punctures, lifting/carrying	Safety glasses, steel toed boots, hard hat, cut/puncture resistant gloves, fall protection when working at elevations. When using high speed power tools, a face shield.
General Maintenance Work	Rough surfaced materials, lifting/carrying	Cut/puncture resistant gloves, safety glasses, steel toed boots.
Welder Helper	Flying particles, falling, falling objects, cuts/puncture, lifting/carrying, noise	Safety glasses, steel toed boots, hard hat, cut/puncture resistant gloves, fall protection when working at elevations. When using high speed power tools, a face shield.
Painting Work	Flying particles, falling, falling objects, cuts/puncture, respiratory hazards, lifting/carrying, cleaning solvents	Safety glasses, steel toed boots, hard hat, cut/puncture resistant gloves, fall protection when working at elevations. Appropriate respirator. When using high speed power tools, a face shield.
Working with chemicals (corrosives, solvents, toxics, etc.)	Refer to chemical specific MSDS for health and physical hazards.	Safety glasses, goggles for splash hazard Light chemical resistant gloves Lab coat, closed shoe, pants Use PPE for applicable tasks as identified on the specific MSDS.
Working with small volumes of human blood, body fluids or other potentially infectious materials (OPIM) as defined in the Bloodborne Pathogen Exposure Control Plan	Potentially infected with infectious disease (BBP) Potential spread of infectious disease	Safety glasses, disposable nitrile gloves, closed shoe, pants.

The Company Safety Representative will assess the workplace to determine if hazards are present or likely to be present which requires the use of Personal Protective Equipment (PPE). If hazards are present or likely to be present, the you must:

- Select the type of PPE that will protect the employee
- Require the employee to use the PPE
- Communicate selection decisions to each affected employee

The Company Safety Representative shall verify the hazard assessment has been performed through a written certification. The certification shall:

- Identify the workplace where assessment was performed.
- Name the person certifying that the assessment was performed.
- Give the date(s) that the hazard assessment was performed.
- Be identifiable as a document of certification of hazard assessment.

Assure that defective or damaged PPE not be used.

The Company Safety Representative will provide training to each employee who is required by this section to use PPE. Each employee shall be trained to know at least the following:

- When PPE is necessary;
- What PPE is necessary;
- How to put on, take off, adjust, and wear PPE;
- Limitations of PPE; and
- Proper care, maintenance, useful life, and disposal of the PPE.

Before being allowed to perform work that requires the use of PPE, each employee shall;

- Demonstrate an understanding of training provided;
- Demonstrate ability to properly use PPE.

When the anyone has reason to believe that an employee does not understand the training or possess the skill required to wear the PPE the employer shall retrain the employee. Other circumstances where retraining is required include, but not limited to:

- Changes in the workplace that render previous training obsolete.
- Changes in PPE that render previous training obsolete.
- Employee does not retain understanding or skill to use PPE.

The site supervisor shall verify that each affected employee receives and understands the required training. The verification shall:

- Be a written certification.
- Show the name of the employee trained.
- Show the date(s) of training.
- Identify the subject of certification.

The hazard assessment must indicate a determination if hazards are present or are likely to be present, which necessitate the use of PPE. Documentation of assessments and certifier's name, signature, date(s) & identification shall be on each JSA documents

### **General Requirements**

1. Each employee who may need to wear PPE shall be properly trained. Proper training includes at least, when PPE is necessary, what PPE is necessary, how to properly don, doff, adjust & wear PPE, the limitations of PPE, the proper care, maintenance, useful life and disposal of PPE.
2. Retraining will be conducted when the workplace changes making the earlier training obsolete, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding. Retraining of the employee is required when the workplace changes, making the earlier training obsolete, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding.
3. PPE training must be documented. The certification must include the employee name, the dates of training, and the certification subject.
4. Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.
5. If employees provide their own PPE, the Company shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment. If used, it must be adequate for use, inspected, maintained, and kept sanitary as per Company policy

6. A written hazard assessment must be performed and signed. The hazard assessment must indicate a determination if hazards are present or are likely to be present, which necessitate the use of PPE. Certifier's name, signature, date(s) and identification of assessment documents
7. Selected PPE must be fitted to each affected employee. Fitting must include proper donning, doffing, cleaning, and maintenance.
8. Defective or damaged PPE shall not be used

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**PUBLIC PROTECTION**

1. No visitors are allowed onto any job sites without expressed permission from Company management.
2. No visitors shall be allowed on to any job site without proper personal protective equipment, i.e., hard hat, safety glasses, steel toed boots.
3. Warning signs, barriers or devices shall be placed where necessary to provide adequate warning of hazards to the public.
4. Heavy equipment and tools will be secured when company personnel are not present.
5. Job sites will be left clean and free of obvious hazards to the public prior to the end of each shift.

## **RADIATION**

Radiation from X-rays is one of the most over looked safety hazards in the industry. If an employee is too close to the source of radiation at the time a radiographer snaps a shot it can cause severe burns, gang green and death. Know what the radiation warning sign looks like.

1. Only qualified radiographers shall be allowed to operate X-ray equipment. Company personnel are strictly prohibited from operating, or handling any X-ray equipment.
2. Employees shall not expose themselves to radiation from X-rays. A competent radiographer shall calculate a safe distant perimeter from the source of radiation. The safe distance perimeter shall be roped off and with radiation warning signs posted. Radiation warning cones may replace the need for rope if appropriate measures have been taken to warn other workers of the radiation hazard.
3. No employee shall place any part of their body inside the safe distance perimeter designated by the radiographer. Violating the safe distance perimeter is against the law and grounds for dismissal. An exception to this safety rule is allowed when a radiographer sets up in a position where it is not feasible for an employee to pass by with out crossing through the safe distance perimeter. In this case, if it is not feasible for the radiographer to adjust his equipment to allow safe access. The employee **MUST**, from outside the perimeter, ask the radiographer if it is safe to pass through the boundaries.
4. If conditions require an employee to work within a close proximity of any active radiation source, then the Safety Manager **MUST** be notified prior to commencing work and appropriate radiation surveillance methods shall be instrumented. Employees may be required to wear radiation detection badges.

### **RIGGING EQUIPMENT**

1. Rigging equipment shall be inspected to ensure it is safe. Rigging equipment for material handling shall be inspected prior to use and on each shift and as necessary during its use to ensure that it is safe.
2. Defective equipment shall not be used and removed from service immediately.
3. Rigging equipment shall not be loaded beyond its recommended safe working load and load identification shall be attached to the rigging.
4. Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.
5. Tag lines shall be used unless their use creates an unsafe condition.
6. Latches will be in place on all hooks, eliminating the hook throat opening. Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used
7. No employee will be allowed under a suspended load All employees shall be kept clear of loads about to be lifted and of suspended loads.
8. Know the safe carrying capacity of sling chains, wire rope and other lifting apparatus and do not overload them.
9. Immediately discard defective lifting equipment.
10. Do not tie knots in sling chains, rope slings or wire cables to shorten them.
11. Do not place bolts or other material between links of chain to shorten or splice it.
12. Do not exceed the hoist load rating and check the general condition before using the hoist.
13. Do not use rope for rigging or lifting loads except where it is impractical to use other methods.
14. Modify lifting equipment only after Engineering approval.
15. Use stingers on load and whip lines to prevent the block and headache ball from swinging into the rigger.

**SANITATION REQUIREMENTS**

1. An adequate supply of portable water shall be provided in all places of employment.
2. Portable containers used to dispense drinking water shall be capable of being tightly closed, and equipped with a top. Water shall not be dipped from containers.
3. Drinking cups shall be provided.
4. Outlets for non-potable water shall be identified by signs to indicate clearly that the water is unsafe to drink.
5. Washing facilities will be provided in near proximity to the work site to enable employees to remove substances, such as, paints, coatings and herbicides.
6. Toilets shall be provided for employees as follows:

<b>Number of Employees</b>	<b>Number of Facilities</b>
20 or less	1
20 or more	1 toilet seat, 1 urinal per 40 Workers
200 or more	1 toilet seat, 1 urinal per 50 Workers

Toilet facility requirements do not apply to mobile crews where a rest room is within a short drive from the location.

### **SCAFFOLDING AND PLATFORMS**

**Employees required to perform work while on a scaffolding** shall be trained by a person "qualified" in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. Qualified training personnel shall be from a pre-approved vendor, i.e. Rolls Scaffolding, or equivalently experienced.

**Appropriate training shall include the following areas, as applicable:**

1. The nature of any electrical hazards, fall hazards and falling object hazards in the work area;
2. The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used;
3. The proper use of the scaffold, and the proper handling of materials on the scaffold;
4. The maximum intended load and the load-carrying capacities of the scaffolds used; and
5. Any other pertinent requirements of the Construction Industry Scaffold Standard, 29 CFR 1926 subpart L and General Duty Scaffolding Standard, 29 CFR 1910.28.

**Employees who are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold shall also be trained by a "competent person" to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:**

1. The nature of scaffold hazards;
2. The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question;
3. The design criteria, maximum intended load-carrying capacity and intended use of the scaffold;
4. Any other pertinent requirements of the Construction Industry Scaffold Standard, 29 CFR 1926 subpart L and General Duty Scaffolding Standard, 29 CFR 1910.28.

### **GENERAL REQUIREMENTS (State specific)**

1. The design load of all scaffolds shall be calculated on the basis of:
  - Light--Designed and constructed to carry a working load of 25 pounds per square foot.
  - Medium--Designed and constructed to carry a working load of 50 pounds per square foot.
  - Heavy--Designed and constructed to carry a working load of 75 pounds per square foot.

2. The maximum work level height shall not exceed 3 times the least base dimension below the platform. Where the basic mobile unit does not meet this requirement, outrigger frames shall be employed to achieve this least base dimension, or provisions shall be made to guy or brace the unit against tipping.
3. All scaffold work levels 6 feet or higher above the ground or floor shall have a toe board at locations where persons are required to work or pass under the scaffold. (See Section 3210.)
4. All scaffold work levels 30 inches or higher above the ground or floor shall have guardrail protection that meets the requirements of Section 3209 and 3210.
5. Wheels or casters shall be properly designed for strength and dimensions to support 4 times the design working load. All scaffold wheels, casters and swivels shall be provided with a positive locking device, or other effective means to prevent movement of the scaffold.
6. Where leveling of the elevated work platform is required, screw jacks or other similar means for adjusting the height shall be provided in the base section of each mobile unit. The screw jack shall extend into its leg tube at least 1/3 its length, but in but in no case shall the exposed portion of the screw jack exceed 12 inches.

#### **GENERAL REQUIREMENTS**

1. Training shall be provided to all employees regarding hazards by "qualified" persons in the subject matter of scaffolding.
2. Scaffolding training program must include hazards (fall, electrical, falling objects), fall protection, use and load capacity.
3. Anytime the company has reason to believe that an employee lacks the skill or understanding needed for safe work involving scaffolding employees shall be retrained. Retraining is required: where changes at the worksite present a hazard about which an employee has not been previously trained; or where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained; or where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.
4. Scaffold inspections must be conducted by a competent person prior to use and periodically throughout the shift. Competent person must ensure scaffolds are safe prior to and during use,

5. Tags must be used when defective equipment or unsafe conditions are found. Unsafe equipment or conditions must be tagged out by Competent Person, and must be complied with.
6. Appropriate scaffolding inspections shall be performed by "competent persons" prior to, and during, each use.
7. Modifications of scaffolding equipment shall only be performed by qualified "competent persons" because non-qualified personnel may create additional hazards. Violations of this policy will result in disciplinary action up to and including termination.
8. Defective equipment shall be tagged "Danger Do Not Operate" (refer to appendix).
9. All scaffolding must be secure prior to utilization. Rolling towers must have the wheel brakes set.
10. Under no circumstances shall a rolling tower be moved with a worker on top of the scaffolding.
11. All work areas shall have a means of safe access and egress.
12. All platforms, suspended scaffolding or rolling towers shall be properly designed for the intended use.
13. Standard guardrails must be installed on all scaffolding or platforms six feet or higher above the ground. Top rails should be 42 inches high and a mid rail must be installed.
14. Toe boards 4 inches high shall be installed on all scaffolds, elevated platforms, and wall openings six feet above the ground.

APPENDIX

SAMPLE "DANGER" TAG

A sample "DANGER" tag. It is a vertical rectangular tag with rounded corners and a small circle at the top center for a hole. The tag has a black header bar with the word "DANGER" in white, bold, sans-serif capital letters. Below the header, the text "DO NOT OPERATE" is printed in large, bold, black, sans-serif capital letters. Underneath that, "MAINTENANCE DEPARTMENT" is printed in smaller, bold, black, sans-serif capital letters. At the bottom, there are two lines for text: "SIGNED BY" followed by a horizontal line, and "DATE" followed by a horizontal line. A large, faint, diagonal watermark reading "SAMPLE" is visible across the background of the tag.

### **SLIPS, TRIPS AND FALLS**

Slips, trips, and falls are a major contributor to injuries and lost time accidents. Be careful and observe the following rules.

1. The following situations should be avoided to help prevent slipping:
  - A. wet floors/decks
  - B. oily floors/decks
  - C. highly waxed and polished floors
2. Remove any spilled liquid from the floor immediately.
3. Good traction helps prevent slipping. The soles of some boots may increase the chance of slipping; therefore, wear boots that provide good traction.
4. When exerting extreme force on wrenches, make sure that your footing is stable in case the wrench slips or releases quickly.
5. Good housekeeping helps prevent tripping.
6. In addition to tools used in day-to-day operations, many items can cause tripping. Be alert for tripping hazards such as garden hoses, shovels, rakes, concrete bumpers in parking lots, uneven grating in catwalks, extension cords, loose shoe laces, etc. Take action to prevent tripping hazards where possible.
7. Every opening in a deck, a floor, or the ground, and pits which a person could accidentally step into should be constantly attended, protected by barricades or standard railings, or roped off before any grating or boards are removed, or before any holes are opened.
8. Employees **MUST** wear safety harness when working four feet or more above the ground, unless other adequate protection against falling is provided.
9. Safety climbs that are installed on ladders attached to vessels or other equipment **MUST** be used. Safety climbs have safety harness attachments that allow personnel to climb without detaching their safety belts after each step.
10. Tools, equipment, and materials **MUST NOT** be left on walkways or stairs.

**TOOLS (HAND, POWER, AND PNEUMATIC)**

1. All hand and power tools shall be maintained in a safe condition.
2. Guards shall be in place and operable at all times while the tool is in use. The guard may not be manipulated in such way that will comprise its integrity or compromise the protection in which intended. Guarding shall meet the requirements set forth in ANSI B15.1. Never remove safety guards from power tools.
3. Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dust, fumes, mists vapors, or gases shall be provided with particular PPE, necessary to protect them from the hazard.
4. Any tool which is not in compliance with any applicable requirement of this part is prohibited. Such tool shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.
5. Pneumatic power tools shall be secured to the air hose either by an approved quick connect fitting or by Chicago fittings with safety clips.
6. Before servicing any power tool, such as changing drill bits, saw blades, or grinding wheels, you must unplug the tool first.
7. NEVER plug in a wheel grinder or wire brush without first making sure the power switch is in the "off" position.
8. All tools and equipment shall be maintained in good condition.
9. Damaged tools or equipment shall be removed from service and tagged "DEFECTIVE."
10. Pipe or Stillson wrenches shall not be used as a substitute for other wrenches.
11. Only appropriate tools shall be used for the job.
12. Files shall be equipped with handles and not used to punch or pry.
13. A screwdriver shall not be used as a chisel.
14. Wheelbarrows shall not be pushed with handles in an upright position.
15. Portable electric tools shall not be lifted or lowered by means of the power cord. Ropes shall be used.

16. Opening, closing, or tampering with any valve on the job site, without management approval, is strictly prohibited.
17. Boards must not be thrown or left around with nails protruding. The nails should be removed or bent down.
18. The following situations should be avoided to help prevent slipping: wet, oily, or highly waxed floors.
19. Electric cords shall not be exposed to damage from vehicles driving over them.
20. In locations where the use of a portable power tool is difficult, the tool shall be supported by means of a rope or similar support of adequate strength.

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## **MARINE PORTABLE TANKS (MPT)s**

### **PURPOSE**

This policy contains rules concerning transfer of combustible liquids, certain flammable liquids, and other hazardous materials to or from Marine Portable Tanks (MPT)s. The purpose of this policy is to standardize the steps utilized when loading and unloading MPTs. The goal is to significantly reduce the likelihood of an incident while making transfers.

### **OVERVIEW**

An MPT may contain substances or material that could adversely affect the safety of the public, handlers or transporters. The specific hazardous materials that may be present in a MPT include:

- Flammable Liquids
- Flammable Gas
- Corrosive liquid
- Toxic Material
- Any other substance that meets the definition of hazardous material.

Hazardous materials authorized for transfer to and from portable tanks include:

- Acetone
- Alcohols
- Benzene
- Gasoline
- Hydrocarbon Mixtures
- Hydrochloric acid Mixtures

It is not uncommon to find additional hazards such as detectible levels of radioactivity and hydrogen sulfide in these tanks.

### **GENERAL**

1. No person may smoke within 50 feet of any portable tank on site.
2. No person may stow a portable tank in the vicinity of another tank that contains a chemically incompatible product.
3. No person may store a portable tank near (within 50 feet) of live electrical devices, unless all electrical equipment is explosion-proof or intrinsically safe.

**CODE OF SAFE PRACTICES****Section: 3.19 Marine Portable Tanks (MPT)s****Revision Number: 1****Revision Date: 7/08/2015****File Name: P319**

4. No person may transfer a hazardous material to or from a portable tank, unless the tank has been properly grounded via a separate grounding wire until the transfer hose is drained and disconnected.
5. No person may operate a cargo pump to transfer a product to or from a portable tank unless the pump is electrically grounded.
6. No welding, burning, or other hot work is allowed within the vicinity of a portable tank unless approved by the site supervisor. And, only upon strict adherence to the company hot work procedure.
7. No person may transfer a product to or from a portable tank unless:
  - Transfer hoses are long enough to not **allow** strain on the hose, or transfer piping system.
  - Each transfer hose is supported in a manner that prevents strain on its coupling;
  - Each transfer hose has no loose covers, kinks, bulges, soft spots, and no gouges, cuts, or slashes that penetrate the hose reinforcement;
  - Each coupling is maintained in accordance with manufacturer's requirements.
  - Each drain in a discharge containment system is closed;
  - The person in charge of the transfer operations, and all personnel involved in the transfer operations hold a conference, to discuss the specific safety precautions (fire protection, spill clean up, ect..) to be taken prior to transfer.
8. Each person who makes a connection for a transfer operation shall:
  - Use suitable material in joints and couplings to make a tight seal;
  - Use a bolt in at least every other hole and in no case less than four bolts in each temporary connection utilizing an American National Standards Institute (ANSI) standard flange coupling;
  - Use a bolt in each hole of couplings other than ANSI standard flange couplings;
  - Use a bolt in each hole of each permanently connected flange coupling;
  - Use bolts of the same size in each bolted coupling; and
  - Tighten each bolt and nut uniformly to distribute the load.
9. Warning signs shall be posted within the vicinity of transfer operation which contain letters 2 inches in height or larger and read:
10. Solid, liquid or waste materials must never be placed in a portable tote.

**WARNING**

No open lights

No smoking

## **MPT TRANSFER PROCEDURE**

### **1) Verify Chain of Custody**

Prior to accepting an MPT for transfer, review the "*Chain of Custody*" form to ensure the product you are receiving is acceptable for your location. Do not accept a load with out proper documentation.

Consult with the driver and review the "*Chain of Custody*" form to ensure you are aware of the proper personal protective equipment (PPE) requirements. Do not unload a tank without proper PPE.

If the hazardous contents of an MPT are unknown you must assume the product is immediately dangerous to life and health (IDLH). Special precautions must be taken if the contents are unknown. It may require the use of supplied air and an increased level of face and skin protection.

While donning the appropriate PPE, pull a vapor test at an inspection point on the tank utilizing an approved monitor. At a minimum, the load should be tested for Oxygen content, Lower Explosive Levels and Hydrogen Sulfide. Other tests may be warranted given conditions.

### **2) Verify Fire Protection**

Prior to making a transfer ensure adequate fire extinguisher and /or charged fire hose is at the site. Two fire protection devices must be immediately available prior to transfer. Fire hoses, must be fitted with approved fire nozzles. Fire extinguishers of a dry chemical type must be "purple K" or equivalent rated for ABC.

### **3) Utilize Grounding and Bonding Techniques**

The complete transfer system must be suitably grounded so that there is a continuous conductive path from the MPT through the hose and nozzle to the discharge tank, or source container. Bonds and grounds shall not be removed until all transfer operations are completed and hoses, nozzles, ect., are disconnected.

The MPT must be bonded, with a bonding cable and connected from the MPT to the receiving container. This will reduce the likelihood of a spark being created in the vicinity of flammable vapors when the suction, or discharge, nozzles are removed.

### **4) Make the Transfer**

Make the transfer, only after all personnel involved in the transfer operations hold a conference, to discuss the specific safety precautions (fire protection, spill clean up, ect..) to be taken prior to transfer.

## **5) Completing the Transfer**

- Upon completing the transfer flush and remove all transfer hoses and associated equipment.
- Remove all grounding rods and bonding wires.
- Close all open or exposed openings in the tanks and piping.

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### APPENDIX A

CONFINED SPACE ENTRY PERMIT INSTRUCTIONS (Completing the Form)

CONFINED SPACE ENTRY PERMIT

## **CONFINED SPACE ENTRY PROCEDURE**

### **I. PURPOSE**

This standard establishes procedures necessary for preparation, entry and restoration of a confined space to be entered by personnel. It is designed to maintain a safe environment for personnel working in a confined space.

### **II. SCOPE**

This standard applies to any vessel, confined space or excavation greater than four (4) feet deep and to any vessel, or confined space that is large enough to be entered bodily and has one or more of the following characteristics: has a limited or restricted openings for entry and exit, contains or has potential to contain a hazardous atmosphere, is not intended for continuous occupation, has insufficient natural ventilation, and may contain known or potential hazards.

### **III. REFERENCE**

TITLE 8 CCR, subsection 5157, *Permit-Required Confined Space*  
29 CFR 1910.146, *Permit-Required Confined Spaces*

### **IV. DEFINITIONS**

**Acceptable Entry Conditions:** Are the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

**Attendant:** An individual stationed outside a permit space who is to monitor the authorized entrant(s), permit space and surrounding area. Responsibilities include, but are not limited to, knowing the hazards that may be encountered during entry, remaining outside the permit space during entry operations, maintaining adequate communication with the entrant(s), monitoring the permit space and insuring that unauthorized personnel stay out of the area. If conditions warrant, the Attendant must order the entrants to evacuate the confined space and may be required to summon rescue or emergency services to the scene.

**Authorized Entrant:** An employee authorized by the employer to enter a permit space. An Authorized Entrant must know the hazards that may exist during entry, the proper use of personal protective equipment (PPE), and proper communication procedures. In addition, an Authorized Entrant must recognize unsafe conditions that may arise in a confined space and be able to follow through with associated evacuation procedures in the event of an emergency.

**Confined Space:** A Confined Space is a space that: 1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and, 2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits), and 3) Is not designed for continuous employee occupancy.

**Entry:** The action by which a person passes through an opening into a permit required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

**Entry Supervisor:** The person responsible for determining if acceptable entry conditions are met prior to allowing entry into the confined space. The Entry Supervisor will authorize and oversee operations, terminate entry as required, and conduct a pre-entry safety briefing.

**Non-Permit Confined Space:** A space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazards capable of causing death or serious physical harm.

**Permit Required Confined Space:** A confined space that has one or more of the following:

- Contains a hazardous atmosphere (or has potential to contain one).
- Contains a material that has potential for engulfing an entrant.
- Has an internal configuration in which an entrant could be trapped or asphyxiated.
- Contains any other recognized serious safety or health hazard.

**Rescue Person:** The person available on site when a permit required confined space is entered by an employee. A Rescue Person shall be trained equivalent to that of an Authorized Entrant. In addition, complete training in confined space rescue, First Aid / CPR, and the use of rescue and personal protective equipment required for the job. Rescue personnel must have PPE and training at no cost and practice rescues at least once every 12 months.

## **V. GENERAL REQUIREMENTS**

1. Each affected employee must be trained prior to initial assignment, prior to a change in assigned duties, if a new hazard has been created or special deviations have occurred.
2. Training certifications shall include employee name, trainer signature/initials, and dates of training. Certifications must be made available to employees and their authorized representative.

3. When performing confined space entry protection must be maintained from external hazards for employees including pedestrians and vehicles. Warning signs such as the one shown below must be posted on any open permit required confined space. Vehicle barriers such as k-rails and/or warning signs, caution tape, cones and delineators must be in place, if vehicles could enter the work area. These barriers are necessary to protect entrants from external hazards and to ensure conditions in the permit space are acceptable for entry during its duration.



4. An attendant must be on duty, as described within the Definitions section of this plan, outside the confined space for the duration of permit entry operations.
5. One or more properly equipped and trained attendant(s) shall be posted outside the space to remain in direct communications with workers inside. The practice of allowing one attendant monitoring more than one permit space is not allowed.
6. Duties of authorized entrants, attendants and entry supervisors are defined within the definitions section of this plan.
7. Rescue services shall be either provided by the host facility, or outside services, and for any IDLH conditions. If provided by the host facility: it must be noted on the confined space permit and safety program and it must be agreed upon by both parties. If outside services are used, outside services must be given an opportunity to examine the entry site, practice rescue, and decline as appropriate. IDLH Conditions require trained rescue on site while work is being performed. Outside services must also be given an opportunity to examine the entry site, practice rescue, and decline as appropriate.
8. All permit required confined space entries shall be in accordance with Confined Space Entry Permit within the appendices of this plan. Means of preparation, issuance, use, and cancellation of entry permits are described within the Appendix A, Confined Space Entry Permit Instructions.

9. When contractors perform work at company facilities that involve a permit required confined space entry, the Company representative inform the contractor of the provisions illustrated within the Contractor Permit Confined Space Entry part of this plan. This section includes procedures for coordinating entry operations for multi employers so that employees of one employer do not endanger the employees of any other employer.
10. Procedures for terminating a confined space entry permit and closing it out after job completion are located within the Restoration of Vessel or Confined Space section.
11. A review of the permit space program will be done using the canceled permits retained within 1 year after each entry. These reviews will be done within 1 year after each entry and the program will be revised as necessary, to ensure that employees are protected. If no entry is performed during a 12-month period, no review is necessary.
12. Upon monitoring of the space the site supervisor must inform the entrants of the potential hazards and results; additionally entrants must participate in the permit review and signing. Ventilation must always be used during a permit required entry and testing must be conducted before entry and during work at intervals specified by the site supervisor.
13. Employees, or their representatives, must be given an opportunity to request the space be re-evaluated as needed.
14. Rescue services must be provided on site during permit required entry. They must be either:
  - Provided by the host facility; or
  - provided by an outside service which is given an opportunity to examine the entry site, practice rescue and decline as appropriate; or
  - Provided by the employer by selecting a rescue team that is equipped and trained to perform the needed rescue services.
15. Rescue service must always be on-site for immediately dangerous to life and health (IDLH) conditions while confined space entry work is being performed.

## VI. PRE-ENTRY PROCEDURE

The entry supervisor is responsible for proper preparation of the vessel or permit confined space to be entered. Prior to entry, a pre-entry safety meeting will be conducted by the supervisor with all affected personnel.

In preparation for entry, the checklist on the **Confined Space Entry Permit (attached)** shall be initiated and completed by a qualified person. In addition, the following steps must be adhered to:

- The vessel and confined space must be properly isolated through blinding or disconnection as outlined in the SAFETY STANDARD - Lockout/Tagout and SAFETY STANDARD - Blinding procedure. Every line, including sight glasses, connected to the vessel must be blinded or disconnected as close to the vessel as possible. A sketch or drawing is recommended for identifying lines.
- The vessel must be purged, steamed, washed, etc., as much as necessary to properly free the vessel of all hazardous atmospheres.
- Signs and/or barricades shall be posted outside to notify personnel of permit-required confined space entry and prohibit unauthorized entry.
- Establish ventilation to ensure movement of fresh air in the vessel. Natural ventilation is considered insufficient. Air driven or explosion-proof electric fans are required if flammable gas or vapors are present. An approved breathing air line and escape air cylinder may be used only as an additional precaution for entry after attempts to normalize the atmosphere are complete.
- Fire extinguisher(s) and other fire fighting equipment shall be available where needed.
- Proper personal protective equipment should be available -- coveralls, goggles, gloves, respirators, etc.
- At least one person trained in CPR and first aid must be available on-site, along with a first-aid kit.
- Lighting conditions, temperature, the need for climbing, scaffolding or the presence of water in deep excavations should be considered. All lighting equipment shall be explosion proof (Class 1, Division 1) and have a ground fault circuit interrupter (GFCI) device installed.
- Equipment such as air movers and vacuum truck hoses shall be properly grounded or bonded to prevent static sparks.

- Lifelines, harnesses and other rescue equipment (hoist, etc.) shall be provided for top openings on large vessels, spaces or deep excavations where rescuing workers would be difficult.
- A self-contained breathing apparatus (SCBA - 30 minute rescue type) shall be immediately available outside should rescue be necessary.
- A communication system (electronic, voice, hand signals, etc.) shall be established between workers and standby personnel prior to entry.
- All affected personnel shall be trained in and familiar with their assigned duties, any hazardous materials that may be present in the confined space, rescue equipment, procedures and emergency contacts.
- Outside services which should be summoned in the event of an emergency and the means of communication with those services shall be listed on or attached to the permit.
- A pre-entry briefing shall be held and documented for all personnel involved in permit-confined space entries. All precautions and concerns should be discussed.
- Check the atmosphere for oxygen level (should be 19.5% to 23.5%), combustible vapors (should be 0% LFL/LEL), and toxic gases in this order. Record those results on the permit. Possible toxic gases may include, but are not limited to, hydrogen sulfide, carbon monoxide, carbon dioxide, mercaptan and benzene.
- One or more properly equipped and trained attendant(s) shall be posted outside the space to remain in direct communications with workers inside. The practice of allowing one attendant monitoring more than one permit space is not allowed.
- One trained standby person shall be available at the site and immediately available to perform rescue and emergency services.

When all of the preparation steps on the confined Space Entry Permit are complete and any additional precautions are taken, the permit to enter a space may be then signed and issued.

## **VII. ENTRY PROCEDURE**

- Entry may be made by authorized entrants after preparation requirements have been met and a Confined Space Entry Permit has been signed and issued.

- The attendant must not leave the confined space with someone inside without first ensuring another standby person is present. In addition, the attendant must maintain communication with the entrants.
- Unauthorized personnel shall not be allowed entry, and if the vessel or confined space is left unattended, the signs barricades etc. shall be left in place.
- The atmospheric conditions shall be **RECHECKED** as often as necessary during entry to ensure a safe work environment.

If subsequent repairs require hot work, a separate Hot Work Permit must be issued in accordance with the SAFETY STANDARD - Hot Work Procedure.

#### **VIII. RESTORATION OF VESSEL OR CONFINED SPACE**

When all work is complete and the vessel or confined space is ready to be returned to service, this checklist should be used for proper restoration. Additional questions to consider while restoring a confined space include:

- Are all personnel out of the space?
- Are all blinds removed using the blind list?
- Are all equipment and tools removed?
- Are all man-ways and flanges closed and sealed?
- Has the atmosphere been purged and returned to normal?
- Have start-up procedures been reviewed?

#### **IX. CONTRACTOR PERMIT CONFINED SPACE ENTRY**

When contractors perform work at company facilities that involve a permit required confined space entry, the Company representative shall notify the contractor of:

- The work which involves a permit confined space entry. The contractor can use their own entry permit as long as it meets the requirements of the Company SAFETY STANDARD - Confined Space Entry Procedure and State and Federal regulations. Utilizing a contractor's permit does not exempt the use of a Company permit.
- The hazards associated with the vessel or confined space.
- The actions required to coordinate Company and the contractors activities in the area where the contractor's employees will be working.

In addition, the contractor will:

- Obtain available information regarding the vessel or confined space hazards from the Company representative before beginning work.
- Coordinate entry with other activities in the area of his operations.

- Inform the Company representative of the vessel or confined space entry program that the contractor will follow.
- Immediately inform the Company representative of any hazard confronted in the vessel or confined space entry.

## **X. CLASSIFICATION OF A NON-PERMIT CONFINED SPACE**

At times a Confined Space may be entered without the need for a written permit provided the space is determined not to be a permit required confined space. All spaces must be considered permit required confined spaces until pre-entry procedures determine otherwise.

If it is necessary to enter a space to eliminate hazards, such entry must be performed under permit required confined space procedures. If testing and inspection during the entry demonstrate that the hazards within the space have been eliminated, and there is no potential for hazards to develop, the space can be reclassified as a non-permit space.

As conditions, use or configuration of a confined space change over time the space can be reclassified from a permit to a non-permit space or vice-versa. This means that sometimes a non-permit space will be reclassified as a permit space because hazards have risen within the space.

The entry supervisor must document the basis for the decision that all hazards have been eliminated. Documentation must contain the date, the location of the space and a signature. The Safe Work permit must be used for this purpose.

## **XI. TRAINING**

The Company shall provide training to all employees whose work is regulated by this program. Each affected employee must be trained prior to initial assignment, prior to a change in assigned duties, if a new hazard has been created or special deviations have occurred. The employer must certify that the required training has been accomplished. The certification shall include employee name, trainer signature/initials, and dates of training. Certification must be made available to employees & their authorized representative.

## **APPENDIX A**

### **CONFINED SPACE ENTRY PERMIT INSTRUCTIONS (Completing the Form)**

#### **SECTION I WORK**

This section of the permit is to be completed by the Permit Initiator/Entry Supervisor and/or Site Supervisor. The effective and expiration date/time must be listed. A permit is not valid beyond the duration of the job scope, or beyond a shift change, whichever is less. All Authorized Entrants, Attendants and Rescue personnel must be listed and a complete description of the proposed task and work location must be identified.

#### **SECTION II HAZARDS/VAPOR TEST**

The vapor test portion of this section is to be completed and initialed by a Company employee or contract personnel who is qualified by training to perform the required tests. Tests shall be repeated at sufficient intervals of time to ensure that conditions do not change during the work activities. Sufficient time intervals range from continuous monitoring, while personnel are inside the confined space, to every four hours depending on hazard potential.

#### **SECTION III EMERGENCY**

The emergency service section is to be completed by the Site Supervisor, and discussed with all affected parties prior to commencement of work. Appropriate emergency service providers must be identified and means of contacting them in the event of an incident. Rescue personnel must be staged on site during permit entry operations. Additionally, this section will must state the name and phone number of the nearest fire department, hospital and/or ambulance service (medivac if remotely located or offshore).

The type of communication means the Attendant will utilize to signal an emergency evacuation of the confined space shall be provided/listed. If all of the Authorized Entrants will be within plain site of the Attendant, state "Visual Communication".

#### **SECTION IV SITE INSPECTION**

This section is to be completed by the Site Supervisor and Entry Supervisor performing the Confined Space Work. The Person's initials indicate that an inspection has been made and that applicable precautions have been taken and will remain in effect until the work listed is completed or until the permit expires.

## **SECTION V PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Appropriate Personal Protective Equipment (PPE) to be used shall be specified in this section. The Site Supervisor must review this section prior to authorizing the work permit.

## **SECTION VI SIGNATURES**

This section requires signatures described below:

1. Permit Initiator/Entry Supervisor -The person to whom the permit is issued shall acknowledge that they understand and will comply with all conditions, precautions and restrictions of the permit by signing their signature to the permit.
2. Authorized Entrant/Attendant/Rescue - All Authorized Entrants, Attendants and Rescue personnel must provide signatures acknowledging precautions will be followed.
3. Simultaneous Operation/Co-Signature - If a simultaneous operation is in effect at one facility, each of the individual Job Supervisors must also sign the co-authorized section. The co-authorized signature ensures all appropriate parties are informed of additional work activities.
4. Site Supervisor - The person responsible for the job site/ location shall authorize the work by signing their signature only after:
  - ◆ Ensuring all elements of the "Confined Space Entry Procedure" are followed.
  - ◆ Conducting a site inspection (refer to Site Inspection checklist on the Confined Space Entry Permit).
  - ◆ Ensuring the atmospheric tests for safe Oxygen content, flammables, and toxics (O<sub>2</sub>, LFL/LEL, and H<sub>2</sub>S) are performed.
  - ◆ Ensuring permit initiator has signed applicable simultaneous work permits, i.e. (Safe Work, Hot Work, Confined Space).
  - ◆ Ensuring that the person to whom the permit is issued fully understands the conditions, restrictions, and precautions of the permit.

## **DISTRIBUTION OF PERMIT**

- COPY 1** Post with Site Supervisor until work is completed, usually in the control room or office.
- COPY 2** Keep on file for a minimum of 5 years.
- COPY 3** Post at the Job Site.

# CONFINED SPACE ENTRY PERMIT

<b>SECTION I</b>	<b>WORK</b>	Effective _____ Time _____ AM/PM Expires _____ Time _____ AM/PM <b>(PERMIT VALID FOR DURATION OF JOB, OR UNTIL SHIFT CHANGE, WHICHEVER IS LESS)</b>																																																							
		Permit Issued To: _____ Authorized Entrants: _____ _____ Name _____ Company _____ Description of Work _____ Specific Location _____ No. of Workers _____ Attendant: _____ Rescue: _____																																																							
<b>SECTION II</b>	<b>HAZARDS/ VAPOR TEST</b>	<b>PERMIT SPACE HAZARDS</b> (Indicate specific hazards with initials) _____ Oxygen Deficiency (less than 19.5%) _____ Oxygen Enrichment (greater than 23.5%) _____ Flammable Gases (greater than 10% LFL/LEL) _____ Toxic Gases/Vapors (H <sub>2</sub> S, Benzene, SO <sub>2</sub> , etc.) _____ Mechanical Hazards _____ Electrical Shock Hazards _____ Heat Stress Hazards _____ Slip, Trip and Fall Hazards _____ Engulfment _____ Skin Irritants _____ Other _____		<b>ATMOSPHERIC TESTING RECORD</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Time</th> <th style="width: 15%;">Acceptable Range</th> <th style="width: 15%;">Oxygen</th> <th style="width: 15%;">Flammables</th> <th style="width: 15%;">H<sub>2</sub>S</th> <th style="width: 15%;">Toxic</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>19.5% - 23.5%</td> <td>0 - 10% LFL/LEL</td> <td>0 - 10 PPM</td> <td>0 - PEL</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Specify Toxic Gas/Vapor _____ PEL _____ Tester's Initials _____		Time	Acceptable Range	Oxygen	Flammables	H <sub>2</sub> S	Toxic			19.5% - 23.5%	0 - 10% LFL/LEL	0 - 10 PPM	0 - PEL																																								
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<b>SECTION III</b>	<b>EMERGENCY</b>	<b>EMERGENCY SERVICE</b> Name of Service _____ Phone Number _____ Method of Contact _____ <b>COMMUNICATION PROCEDURES</b> to be used by attendants and entrants: _____ _____ Rescue service availability verified by Entry Supervisor? _____ yes _____ no																																																							
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		We have received instructions on safety procedures and hazards of this job and the permit is complete. Permit Initiator/Entry Supervisor _____ Attendant _____ Authorized Entrants _____ _____ Simultaneous Operations _____ Co-Signatures _____ Site Supervisor / Designee _____ Rescue _____																																																							
<b>SECTION VI</b>	<b>SIGNATURES</b>																																																								

## Air Test Log

Document air test readings every \_\_\_\_\_ minutes.

[illegible]

## TEST EQUIPMENT INFORMATION

Analyzer type:	
Serial Number:	
Calibration Date:	

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## **I. PURPOSE**

To ensure that all cranes, hoists and rigging devices are properly inspected, maintained and operated in accordance with manufacturers' recommendations, federal, state, and local regulations.

## **II. APPLICABILITY**

This policy applies to all company owned cranes. Compliance with this program is mandatory.

## **III. REFERENCE**

29 CFR 1910.184, *Slings*

29 CFR 1910.179, *Overhead and Gantry Cranes*

29 CFR 1926.550, *Cranes and Derricks*

TITLE 8 CCR, subsection 4999, *Handling Loads*

TITLE 8 CCR, subsection 5004, *Crane or Derrick Suspended Personnel Platforms*

TITLE 8 CCR, subsection 5006.1, *Crane Operator Qualification and Certification*

## **IV. GENERAL**

The Company has the potential to work with cranes capacities ranging from 5 ton to 175 ton and as a part of our hazard assessment has determined the need for a written crane hazard prevention plan in accordance with (29 CFR 1910.179-. 181). Crane operation requires careful attention to safety details, as they can be a source of serious injury to operators and to those in the vicinity of the crane.

## **V. RESPONSIBILITIES**

Management: provide support and endorsement

The Safety Representative – program, qualifications of operators/riggers, certifications, records, and safety equipment

Site Supervisors: daily operations - safety inspections, personnel fitness and direction, and safety equipment use

## **VI. OPERATORS/OILERS QUALIFICATIONS:**

Potential crane operator/oilers must meet company and Department of Transportation (DOT) specific guidelines including:

- Physical and mental examination including drug screening prior to assignment.

- Be 21 years of age, speak and read English well enough to converse with the general public, understand and read all traffic signs/signals, read and understand all safety related material, and to make entries on required reports.
- Possess current valid commercial driver's license issued from the State of California.
- Provide a DMV printout of driving record.
- Demonstrate through testing the required knowledge and understanding of crane operations including its characteristics, capabilities, and capacity.
- Pass a written exam.
- Meet all the physical and mental requirements of the job description for crane operator/oiler.

## **VII. GENERAL REQUIREMENTS**

1. Equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.
2. The manufacturer's procedures and prohibitions must be complied with when assembling and disassembling equipment.
3. The assembly/disassembly of equipment must be directed by a competent and qualified person.
4. The work zone shall be identified by demarcating boundaries such as flag and range limiting devices, or defining the work zone as 360 degrees around the equipment up to the maximum working radius. The hazard assessment must determine if any part of the equipment could get closer than 20 feet to a power line.
5. If it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line then at least one of the following measures must be taken:
  - Ensure the power lines have been deenergized and visibly grounded.
  - Ensure no part of the equipment, load line or load gets closer than 10 feet to the power line.
  - Determine the line's voltage and minimum approach distance permitted in Table A (page 14)
6. A competent person must conduct a visual inspection of equipment prior to each shift. The inspection must consist of observation for apparent deficiencies. Some inspection items shall include control mechanisms, pressurized lines, hooks and latches, wire rope, electrical apparatus, tires (when used), and ground conditions

7. Equipment must be inspected monthly by a competent person. The inspection must be documented. Documentation must include the following: items checked, results of inspection, and name and signature of the inspector. Documentation must be retained for 3 months. (Documented monthly inspection not required if the daily inspection is documented and records are retained for 3 months)
8. Safety devices are required to be on all equipment and must be in proper working order before operations begin. If any of the devices are not in proper working order the equipment must be taken out of service and operations must not resume until the device is working properly again. Examples of safety devices may include: crane level indicator, boom stops, jib stops, foot pedal brake locks, horns, etc
9. All manufacturer procedures applicable to the operational functions of equipment, including its use with attachments, must be complied with.
10. The operator shall have access to procedures applicable to the operation of the equipment. Procedures include rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions and operator's manual.
11. Whenever there is a safety concern, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.
12. A signal person must be provided for the following situations:
  - The point of operation is not in full view of the operator
  - The view is obstructed when the equipment is traveling
  - The operator or the person handling the load determines it is necessary due to site specific concerns
13. The program must address safety measures to be used when the equipment has the potential to strike and injure an employee or pinch/crush an employee against any other object.
14. Only those employees qualified by training or experience shall be allowed to operate equipment and machinery. Within 4 years of November 8th 2010, employers must ensure operators be qualified/certified by one of the following methods:
  - Certification by an accredited crane operator testing organization
  - Qualification by an audited employer program
  - Qualification by the U.S. military
  - Licensing by a government entity.

15. The manufacturer must approve all modifications/additions in writing. A registered professional engineer must be qualified with respect to the equipment involved, and must ensure the original safety factor of the equipment is not reduced.

## **VIII. TRAINING**

Only designated, prescreened and trained employees are allowed to operate, drive and/or set up cranes. Operators, oilers, riggers, and signal/ground personnel must be trained in the operation, limitations and emergency procedures of the cranes they operate or work with. All personnel associated with crane operation must be trained prior to assignment, when an injury/accident involving a crane has occurred and annually thereafter. Training will include:

- Site Hazards and Inspection.
- Characteristics of the equipment, including manufactures requirements and recommendations for safe operation.
- Characteristics of the loads and potential dangers.
- Operation procedures, including emergency procedures.
- Inspections, including pre-start up and regular inspections.
- Proper preventative maintenance.

A Certificate of Training Completion will be given to those that have satisfactorily completed the training course. Retraining must be done in a timely manner and will include a re-certification exam.

## **IX. RECORD KEEPING**

All records regarding application for employment, references – background checks, DMV records, and evaluations must be retained in a personnel file.

Information involving I-9 Applicants eligibility to work in the United States must be kept in a separate locked file.

All records involving physical examination, drug screening and anything involving physical or medical information must be retained in a separate locked medical file. Due to the sensitivity of the material only the Safety Representative should be allowed access.

Safety records such as program, meetings, exams, certifications, OSHA 300 log and inspections must be retained by the Safety Representative.

Permits and Crane certification must be obtained and retained by the Safety Representative.

## **X. CRANE CERTIFICATION AND GUIDELINES**

All employers must comply with the manufacturer's specifications and limitations applicable to the operation of all cranes and derricks. Where such specifications are not available, the limitations assigned to the equipment must be based on the determination of a qualified engineer competent in the field and such determination must be documented. Attachment used with the cranes must not exceed the capacity, rating or scope recommended the manufacturer. Rated load capacities, recommended operating speeds, and hazard warnings or instruction must be posted on all equipment and visible to the operator while at his control station.

All truck cranes (and crawler and locomotive cranes) must meet the applicable requirements for design, inspection, construction, testing maintenance, and operation prescribed in ANSI B30.5-1968, Safety Code for Crawler, Locomotive, and Truck Cranes. The manufacturer's specifications regarding design, erection, operation and safety must be available at the job site.

A thorough annual inspection of the hoisting machinery must be made by a competent person or by a government or private agency recognized by the U.S. Department of Labor. A record of the date and results of the inspections for each hoisting machine and piece of equipment must be retained. Cranes rated over 3 tons must be Proof Load tested and certified annually.

Hand signals to crane operators must be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals must be posted at the job site and on the crane.

Wire rope must be taken out of service in:

- (1) Running rope - when there are six randomly distributed broken wires in one strand in one lay, or three broken wires in one strand in one lay; or there is wear of one-third of the original diameter of outside individual wires or kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure; or evidence of heat damage from any cause.
- (2) Standing rope - when there are more than two broken wires in one lay in sections beyond end connections or more than one broken wire at end connection.

All wire rope factors shall be in accordance with ANSI B 30.5-1968 or SAE J959-1966.

Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, or moving parts or equipment must be guarded if such parts are exposed to contact by employees or otherwise create a hazard. Guarding must meet the requirements of ANSI B15.1-1958 Rev., Safety Code for Mechanical Power Transmission Apparatus. Cabs, guardrails, handholds, and steps must conform to ANSI B30.5. Platforms and walkways must have antiskid surfaces.

Material and personnel hoists and platforms must comply with the manufacturer's specifications and limitations applicable. Rated load capacities, recommended operating speeds, and hazard warnings or instructions must be posted on cars and platforms. Car arresting devices must be installed in case of rope failure. All hoists must meet with ANSI A10.5-1969 and safety requirements in (CFR 1926.552)

No modifications or additions that affect the capacity or safe operations of the equipment may be made without the manufacturer's written approval. If modifications are made, the capacity, operation, and maintenance instruction plates, tags, or decals should be changed accordingly. The employer must comply with Power Crane and Shovel Association Mobile Crane Hydraulic Standard No. 2. All sideboom cranes mounted on wheels or crawler tractors must meet SAE J743a-1964 requirements.

## **XI. PERSONNEL PROTECTIVE EQUIPMENT**

1. Eye and Face protection (8 CCR 3381): ANSI approved Safety glasses (safety goggles may be required for splash protection) are required at all times. ANSI approved Face shields must be worn when there is the potential for exposure to excessive heat, chemicals or corrosives.
2. Foot protection (8 CCR3385): ANSI approved steel toed boots that protect against potential electrical shock, chemicals, and falling objects must be worn at all times and on all surfaces unless otherwise indicated by Safety Representative.
3. Hand protection (8 CCR 3384): ANSI approved gloves must be worn. Gloves should not be worn if they could become entangled in moving machinery (nor should rings, watches or jewelry).
4. Head protection (8 CCR 3381): ANSI approved hard hats are mandatory for all employees due to the potential of flying or falling objects. If hair is long and could be tangled in equipment or machinery it must be confined.

## **XII. CRANE SAFETY SUPPLIES**

1. Fire Extinguisher rated 10-BC or higher, fully charged.
2. First Aid Kit that has been approved by physician and stock maintained.
3. Caution tape for use in flagging holes, pits, sumps, work areas, overhead power lines, etc.
4. A copy of emergency procedures including contacts.
5. Accident report and procedure to follow.
6. SDS indicating hazardous material at the job site.
7. Job site survey form indicating potential hazards.
8. Warning signs including High Voltage warning signs.
9. Flares and appropriate barricades.
10. De-energizing equipment such as: ground jumper cables.

## **XIII. INSPECTIONS**

Inspection of the crane ensures that all equipment is operating correctly. Inspections are done:

1. Pre-operational site inspection
2. Pre-operational equipment walk around
3. Pre-start up check
4. Periodic scheduled inspections (monthly, annually, and 4-year)

## **XIV. PRE-OPERATIONAL SITE INSPECTION**

Before operating a crane at a particular site or in a specific operation, the area should be reviewed for possible hazards such as:

- Overhead lines (power, telephone, etc.)
- High voltage signs properly displayed
- Unstable ground, holes, uneven, loose or muddy soil
- High wind or special weather conditions
- Other types of work activities in the area

Characteristics of the load

- Hazardous or toxic materials
- Weight factors, Dimension factors, Gravity factors
- Lift points
- Methods of attachment
- Boom and Sling angles
- Load vectors
- Crane orientation and capacities

## **XV. PRE-OPERATIONAL EQUIPMENT WALK AROUND**

Daily crane inspection should include:

1. All exposed parts to make sure they are guarded or isolated.
2. All crane components for defects. All areas used for lifting, swinging or lowering load.
3. Wire rope to identify wear, kinking, heat damage, or reduced nominal diameter.
4. Swivels for freedom of rotation.
5. Tires for defects and damage.
6. Surfaces for fluid leaks.
7. Batteries for corrosion, proper fluid levels, and tightness of connectors.
8. Crane for proper lubrication.
9. Heaves, drums, rigging, hardware, and attachments and all operating mechanisms for proper function.
10. Guardrails, handholds, and steps for sturdiness.
11. Platforms and walkways for damage and/or slippery conditions.
12. Turntable connections for defects or damage.
13. The boom and jig for straightness and damage such as cracking, bending, or deformation of welds and corrosion
14. Paint to identify cracking or peeling that may indicate structure fatigue of the metal, which precedes failure.
15. Lattice beams for bent lacing.
16. Beams or cylinders of outriggers for distortion and cracking and all welds for cracks.
17. The extension and retraction beams and cylinders to ensure smooth operation and ability to hold load.
18. Check the condition of the floats.

## **XVI. PRE-START UP CHECK**

Start with the Cab.

1. Is the cab clean and free of debris?
2. Does it have inspection and maintenance records?
3. Does it have proper control labeling?
4. Do all the gauges, warning lights, signal horn, and back-up alarms function properly?
5. Does service/ parking brake function properly?
6. Does door and cabin seat function properly?
7. Is fire extinguisher accessible and properly rated and full?
8. Are windows clear and free of cracks or breaks that may affect operators view?
9. Are boom hoist lockouts, anti-two-block devices, and load moment indicators functional and properly calibrated?

10. Are all gauges and warning lights indicating the proper readings while engine is running?

11. Are all controls operating properly while engine is running?

## **XVII. PERIODIC SCHEDULED INSPECTIONS (MONTHLY, ANNUALLY, 4-YEAR)**

Inspection records must be maintained on:

- Brakes
- Crane hooks
- Hoist chains
- Ropes

Periodic inspections would include items listed in the walk-around as well as more detailed items. Qualified crane inspector must do periodic inspections. Inspection records must include the date of inspection, name and signature of inspector and serial number or other identifier of the equipment. All defects or failures must be indicated using the part number (if available) and name. If equipment needs repair, the equipment must be taken out of service until qualified maintenance personnel has completed and certified repairs, corrections or adjustments. Boom members that are repaired must be certified that the repair meets manufacturer's original design standards.

## **XVIII. CRANE MAINTENANCE**

Cranes require regular preventative maintenance to prevent untimely repairs. It is important to follow the company's preventative maintenance program. Maintenance should be within the guidelines established by the manufacturer's guidelines. Only designated personnel may perform maintenance, adjustments or repair on any crane. Maintenance procedures must include the following guidelines:

1. The crane must be in a location where it will cause the least amount of interference with other cranes or equipment.
2. All controls must be in the off position.
3. Lock the main or emergency switch in the off position.
4. Place "Out of Order" signs on the crane, and on the hook or on the floor of the crane.
5. Provide rail stops or other suitable means to prevent the interference of other cranes operating on the same runway as the idle crane.
6. Do not operate crane after repairs or adjustments until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

## **XIX. GENERAL SAFETY RULES FOR CRANES**

1. Do not carry loads over people.
2. Do not allow anyone to ride the hook or load during hoisting, lowering or traveling.
3. Do not walk away from the crane with a load suspended.
4. Move loads slowly; avoid sudden starts or stops.
5. Operators must accept stop signals from anyone. However, the crane operator is always in-charge of the lift.
6. Store necessary clothing and personal belongings in such a manner that they do not interfere with the crane's access or operation.
7. Store tools, fuses, and oilcans in the toolbox, do not allow them to lie loosely in cab.
8. **Do not** exceed the recommended load ratings. Include all items that add weight to the load.
9. **Do not** change the recommended counterweights or the boom may collapse.
10. **Do not** lift an unsecured or unbalanced load.
11. **Do not** lift two separately rigged loads at the same time.

## **XX. LIFTING OF PERSONNEL CODE OF SAFE PRACTICES**

Lifting of personnel creates the potential for serious injury if not done correctly. Our hazard assessment requires the following actions must be adhered to:

1. All employees engaged in the personnel lift must do a thorough review of the operating instructions and safety procedures. The meeting must be documented.
2. Compliance with the manufacturer's specifications and limitations regarding the operation of all personnel hoists must be met.
3. Rated load capacities, recommended operating speeds, and hazard warning instructions must be posted on cars, platforms and/or baskets.
4. Man Baskets must be used to lift only personnel and the tools they will need for the job. Do not use to lift material and/or equipment.
5. Controls must be tested prior to use and a trail lift of 125% of capacity must be done prior to lifting personnel.
6. A visual inspection of the lift device, lines and basket must be done prior to personnel lift.
7. Only authorized employees may operate the lifting equipment.
8. Only employees trained in the proper use of fall protection systems (body harness & lanyard) may be lifted.
9. Unless over water employees to be lifted must have a body harness and lanyard, and inspect them prior to use. Harness shall be either attached to a fixed attachment point inside the basket; the basket shall have a safety line attached above the head ache ball. Employees lifted over water must wear a coast guard approved life vest.
10. Crane cannot be moved while someone is in the man basket.

11. Employees must stay in the basket during raising and lowering and may not use the sides as a platform or ladder.
12. Crane load lines must be able to handle 10 times the maximum rated capacity of the man basket.
13. Free fall is prohibited.
14. Crane operator must stay at the controls when using the man basket.
15. Watch out for power lines-do not place material or equipment under power lines.
16. Always have an emergency action plan.

## **XXI. OPERATION GUIDELINES FOR LIFTING PERSONNEL**

1. Cranes must be level and all outriggers used.
2. The employee in the man basket must attach his lanyard to the lower load block or overhaul ball or to a structural member of the basket.
3. Lift the man basket in a slow, controlled and cautious manner to avoid sudden jerks.
4. Set the brakes and dogs or pawls when the man basket is at its working place.
5. Tie the basket to the working structure if it is safe.
6. Tag lines must be used if it is safe to do so.
7. When using a boatswain chair, use an independent safety line.

## **XXII. SLING SAFETY PRACTICES**

1. Slings and attachments must be inspected daily for damage or defects.
2. Damaged or defective slings must be removed from service immediately.
3. Chain or rope slings must not be shortened by knots, bolts, or other means.
4. Slings must not be kinked or overloaded.
5. Slings must be padded to protect against damage from sharp loads.
6. Suspended loads must be kept clear of all obstructions.
7. Wrought iron chains must be annealed every six months; alloy chains must not be annealed.
8. Deformed or defective sling hooks must not be used.
9. Keep hands and fingers away from slings when sling is being tightened around load.
10. Do not use sling over rated capacity.
11. Do not use slings from under loads if it will damage the sling. Set load on blocks.
12. Avoid passing loads over employees or occupied structures. When loads must pass over workers or occupants, use safety type hooks.

### XXIII. POWER LINES

All power lines must be considered energized unless the electrical utility owning the lines indicate that the lines are not energized, and they are visibly grounded and appropriately marked. When operating near power lines, minimum clearance between the lines and **any part** of the crane or load must be:

Voltage	Minimum Clearance
600 to 50,000	10 feet
50,000 to 75,000	11 feet
75,000 to 125,000	13 feet
125,000 to 175,000	15 feet
175,000 to 250,000	17 feet
250,000 to 370,000	21 feet
370,000 to 550,000	27 feet
550,000 to 1,000,000	42 feet

When in transit with no load and boom lowered, the equipment clearance must be decrease by 4 feet in each category. Example: 600 to 500,000 is 6 feet.

Where maintaining the proper clearance by sight is difficult for the operator, a signalman must be present. The signalman must be familiar with all the hand signals for the crane operated and the power line guidelines.

- Maximize safety around power lines.
- Use nonconductive taglines to stabilize load.
- Use insulating boots and gloves.
- Erect insulating barriers to prevent physical contact with the lines.

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## **EMERGENCY RESPONSE/EMERGENCY ACTION**

### **I. PURPOSE**

The Company will make an organized effort to protect personnel from injury and to minimize property damage in an emergency event. Resources will be made available to respond to an emergency by using trained employees and additional outside response agencies. All employees shall be aware of these emergency response procedures. These emergency response procedures supplement any response plans required by specific standards.

The purpose of the Emergency Response Procedure is to establish a systematic method for ensuring safe working conditions and procedures are followed during an emergency condition.

### **II. SCOPE**

This standard will define: the type of work requiring an Emergency Response Plan, the qualifications of personnel involved in the response procedure, and instructions on how to properly implement the plan.

### **III. REFERENCES**

TITLE 8 CCR, subsection 3220, *Emergency Action Plan*  
29 CFR 1910.38, *Emergency Action Plans*

### **IV. EVACUATION ROUTES/PROCEDURES**

Company supervisory personnel must review the site-specific Emergency Action Plan prior to commencing work. In the event of an emergency that necessitates an evacuation of a work site, the following procedures will be implemented:

- Evacuation notification should be made using the hand-held radios.
- All personnel should evacuate upwind of any activities. Ensure that a predetermined meeting location is identified off-site in case of an emergency, so that all personnel can be accounted for in the event of an emergency.

Personnel will be expected to proceed to the closest exit with their buddy and mobilize to the safe distance area associated with the evacuation route. Personnel will remain at that designated safe briefing area until an authorized individual provides further instructions.

Management shall ensure that emergency programs are instituted at all sites, and that they are reviewed frequently. All employees are encouraged to contribute to the development of the emergency response/action program. As a minimum site specific emergency action plans shall include the following:

- Procedures to be followed by employees who remain to perform or shut down critical operations before they evacuate;
- Emergency escape procedures and emergency escape routes;
- Procedures to account for all employees after an emergency evacuation has been completed;
- Rescue and medical duties for those employees who are to perform them;
- The preferred means for reporting fires and other emergencies;
- Names and phone numbers of nearest emergency services.

The site specific plan must detail evacuation procedures and meeting places in case of an emergency, emergency fire fighting procedures, and emergency rescue procedures for "man down" situations. The supervisor must ensure that every employee at each job site is familiar with the Plan. The Emergency Plan must be maintained by the Safety Representative to reflect changes in the job.

## **V. EMERGENCY RESPONSE GUIDELINES**

### **A. INJURIES**

You must report any injury to your Supervisor immediately. In the event of an injury, the following procedures should be performed:

- 1) Provide first aid to the injury
- 2) Shut down operations if necessary.
- 3) Control access to the area.
- 4) Instruct all personnel involved not to discuss the accident with anyone except the immediate Supervisor.
- 5) Supervisors must prepare an accident report by the end of that workday to be turned into the main office.

### **B. FIRE OR EXPLOSION**

In the event of a fire or explosion, the fire department should be contacted immediately. Upon the arrival of the fire department, the person in charge, or designated alternative will advise the fire officer of the location, nature, and identification of the hazardous materials on-site. If it is safe to do so, site personnel may use fire-fighting equipment available on-site to control or extinguish the fire and remove or isolate flammable or other hazardous materials which may contribute to the fire. Company personnel should not attempt to fight a fire beyond the incipient stage.

Report a fire to your supervisor immediately. Supervisors shall ensure that the fire is reported directly to the Fire Department, or 911.

1. Stay on the line until the Fire Department tells you to hang up. Be sure the Fire Department has all pertinent information such as:
  - Exact Location
  - Your name, Company name and purpose of call
  - Description of the type of fire
  - Your phone number
  - Location where someone will meet the Fire Department
2. Isolate all fuel and electrical sources if possible.
3. Try to put out the fire if you have the proper equipment and are trained. Never endanger yourself or others.
4. Stay out of the way when the Fire Department arrives. Be ready to help if you have the proper training.
5. After the fire is extinguished, stand by in case of a re-start.

## **C. EARTHQUAKES**

Earthquakes are a frequent occurrence in the Pacific, but major earthquakes are a rare occurrence. Most injuries from earthquakes occur from falling objects and debris. The safest place to be in an earthquake is outdoors away from buildings and wires.

During an earthquake:

Remain calm as you will be better able to access your situation.

If you are indoors:

### **If you are Indoors**

- Stand under a doorway, get under heavy furniture or stand against a wall in the center of the building. Keep away from windows and outside doors.
- Get under a heavy piece of furniture or move toward a interior wall
- Stay clear of windows, bookcases and mirrors
- Turn off any gas appliances

### **If you are Outdoors**

- Stay away from buildings, poles, wires, and windows.
- Get into a open area away from buildings, trees, walks or power lines
- Sit or lie down and brace yourself

### **If you are in a vehicle:**

- Pull off the road away from overpasses, bridges or power lines
- Stay in your vehicle

After an earthquake aftershocks can occur. Report any broken power, gas, or water lines and stay tuned to local radio and television stations for Civil Defense messages.

In all cases follow your supervisors instructions after the earthquake. Stay away from power lines and shut off any leaking fuel sources.

#### **D. VEHICLE ACCIDENTS**

If you are involved in a vehicle accident you must follow the procedures listed below:

- 1) Set out emergency reflectors to protect yourself and others. These are located under the seat in all Company vehicles.
- 2) Administer first aid to injured persons.
- 3) Notify the appropriate emergency personnel, including the local Police Department.
- 4) Notify your Supervisor.
- 5) Exchange drivers license numbers, insurance Company and policy number with other driver(s) involved. All Company vehicles are required to have the vehicle insurance I.D. card in the glove compartment.
- 6) Complete a Vehicle Accident Report with the Safety Representative at the main office.

#### **E. CHEMICAL SPILLS**

- 1) Try to contain the spill if possible.
- 2) Notify your immediate Supervisor and standby for further instructions.

#### **F. EMERGENCY EQUIPMENT**

General emergency equipment and supplies in Company vehicles shall include the following:

- First-aid kit
- Bloodborne Pathogen kit
- Fire extinguisher
- Communication device (radio or mobile telephone)

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## **FALL PROTECTION**

### **I. PURPOSE**

This standard establishes procedures necessary for protection of employees working in elevated positions. It is designed to maintain a safe environment for personnel working above four (4) feet from the ground level.

### **II. SCOPE**

This standard describes the personnel training requirements, minimum fall protective equipment, and safe work practices to be taken while working in elevated positions.

### **III. REFERENCE**

TITLE 8 CCR, subsection 3299, Personal Fall Protection  
TITLE 8 CCR, subsection 1670, Personal Fall Arrest Systems  
29 CFR 1926.503, Fall Protection

### **IV. WORKING SURFACES ELEVATED MORE THAN FOUR (4) FEET**

Working surfaces that are more than four feet above ground or more than four feet above an adjacent platform or work surface  
handrails/guardrails, or another means of fall protection must be provided.

• • must be equipped

### **V. WORKING AT ELEVATIONS GREATER THAN SIX (6) FEET**

Appropriate fall protection must be used at all times while personnel are working at elevations greater than six feet above the ground or an adjacent platform/working surface (measured by the level of the workers' feet).

Personnel climbing to or from such working surfaces should use a ladder, stairs, or an appropriate means of fall protection (i.e., safety climbs).

### **VI. QUALIFICATION OF PERSONNEL**

Specific fall protection plan(s) shall be developed by qualified/competent personnel. This task should be completed by the job site supervisor, i.e. Site Foreman.

In rare circumstances, where no other alternative methods have been implemented a safety monitoring system shall be implemented and Competent personnel assigned monitoring duties shall: recognize fall protection hazards, warn employees if they are unaware of a fall hazard or are acting in an unsafe manner, stay on working surfaces and in visible light, and stay close enough for verbal communications, not have any other duties that would take monitors attention from the monitoring function.

## **VII. GENERAL REQUIREMENTS**

1. A training program shall be provided for each employee who might be exposed to fall hazards. Employees shall receive training pertaining to the recognition and elimination of fall hazards. Training shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to follow to minimize these hazards.
2. Re-training shall be provided when the following are noted: 1) Deficiencies in training. 2) Work place changes. 3) Fall protection systems or equipment changes that render previous training obsolete.
3. Written certification records shall be maintained showing the following: 1) Who was trained, when, dates of training 2) Signature of person providing training and date Company determined training was deemed adequate.
4. Fall protection is required whenever employees are potentially exposed to falls from heights. For general industry every wall opening from which there is a drop of more than 4 feet shall be guarded. For Construction, each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.
5. Site specific plans shall be developed by a qualified person. The fall protection plan shall be prepared in accordance with this program and by a qualified person for the specified work site.
6. Accident investigations shall be conducted to evaluate the fall protection plan for potential updates to practices, procedures or training in order to prevent reoccurrence
7. When purchasing equipment and raw materials for use in fall protection systems applicable ANSI & ASTM requirements should be met.
8. Site Supervisors shall provide for prompt rescue of employees in the event of a fall or shall assure the employees are able to rescue themselves when working from heights.
9. Full body safety harnesses are required anytime a person is working over 6 feet off the ground or above the existing walking or working surface. Standard waist type safety belts are strictly prohibited.

10. Any time a person is working over 6 feet off the ground they must be tied off to a stationary object capable of withstanding 5,400 pounds.
11. Approved rope grabs and safety lines shall be used any time a worker is required to work in an area with out adequate tie off protection, such as while using a spider basket or shuttling.
12. A full body harness **must** be worn whenever fall protection is required. Safety harnesses **should** fit snugly and comfortably.
13. When safety harnesses are used for fall protection, they **must** use lanyards with shock/absorber systems.
14. When working at elevations where it is necessary to disengage a lanyard to move around equipment or obstacles, a double lanyard **must** be utilized to assure fall protection.
15. All equipment **must** be inspected for excessive wear or damage prior to each use.
16. Modifications to any fall protection equipment, other than those performed by the manufacturer, may result in premature failure of the equipment and are **strictly prohibited**.
17. All equipment **must** be worn in accordance with the manufacturer's recommendations.
18. Any fall protection equipment that is worn or damaged **must** be destroyed so that it is no longer usable, and then discarded.
19. Safety belts, harnesses, and lanyards that have been used to stop a fall **must** be destroyed and discarded.
20. Safety harnesses shall be stored properly and inspected on a regular basis for excessive wear. Worn or damaged harnesses shall be destroyed prior to discarding.
21. Anytime personnel work from heights provisions for prompt rescue of employees in the event of a fall and/or supervisors shall assure the employees are able to rescue themselves.

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## **I. INTRODUCTION**

It is the policy of the Company that all employees who operate or anticipate operating a forklift during their employment must complete forklift safety training and comply with this program. Only trained and certified operators, including supervisors, are allowed to operate Industrial Lift Trucks.

## **II. REFERENCE**

The following requirements are incorporated into the forklift safety program.

Title 8 CCR 3650-3668 *Industrial Trucks*  
29 CFR 1910.178, *Powered Industrial Trucks*,  
29 CFR 1926.602, *Material Handling Equipment*, and  
NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Maintenance, and Operation*.

## **III. SCOPE**

This program covers all persons who are employed by the Company and related facilities who are designated responsibility to operate a forklift.

## **IV. RESPONSIBILITIES**

- The Company will provide forklift training
- Departmental supervisors are responsible for ensuring employees attend training and that forklifts are repaired when malfunctioning

## **V. GENERAL REQUIREMENTS**

All powered industrial trucks acquired and used after February 15, 1972 are required to meet the design and construction requirements for powered industrial trucks established in the American National Standards Institute (ANSI) Standard for Powered Industrial Trucks, Part II, ANSI B56.1-1969, except for vehicles intended primarily for earth moving or over-the-road hauling. Approved trucks are required to bear a label or some other identifying mark indicating approval by the testing laboratory.

Nameplates and markings must be in place and must be maintained in a legible condition.

Modifications and additions which affect capacity and safe operation without the manufacturer's prior written approval are prohibited. Capacity, operation, and maintenance instruction plates, tags, or decals should be modified accordingly. All Company forklifts are used in unclassified locations according to 29 CFR 1910.178 Table N-1. If the location is classified as hazardous, 29 CFR 1910.178 (c) should be consulted in order to determine the appropriate type of forklift.

High lift rider trucks must be equipped with an overhead guard manufactured in accordance with 29 CFR 1910.178 (a)(2), unless operating conditions do not permit the use of the guard. The overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., but not to withstand the impact of a falling capacity load.

## **VI. TRAINING**

Forklift operators are required to attend and pass forklift safety training at least every three years, operate and maintain their vehicles in a safe manner according to their training, and report all vehicle problems to their supervisor. Training will include: lecture, discussion, and/or interactive computer learning, videos, and written materials. Forklift operator training includes instructor demonstrations and trainee exercises. Operator evaluation (critiques) are documented on the evaluation form shown in appendix B. All operator training and evaluation shall be conducted by persons who have the knowledge, training and experience to train powered industrial truck operators and evaluate their competence.

### **TRAINING PROGRAM CONTENT**

Powered industrial truck operators shall receive initial training in the following topics:

1. Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate;
2. Differences between the truck and the automobile;
3. Truck controls and instrumentation: where they are located, what they do, and how they work;
4. Engine or motor operation;
5. Steering and maneuvering;
6. Visibility (including restrictions due to loading);
7. Fork and attachment adaptation, operation, and use limitations;
8. Vehicle capacity;
9. Vehicle stability;
10. Any vehicle inspection and maintenance that the operator will be required to perform;
11. Refueling and/or charging and recharging of batteries;
12. Operating limitations;
13. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.
14. Surface conditions where the vehicle will be operated;
15. Composition of loads to be carried and load stability;
16. Load manipulation, stacking, and unstacking;
17. Pedestrian traffic in areas where the vehicle will be operated;
18. Narrow aisles and other restricted places where the vehicle will be operated;
19. Hazardous (classified) locations where the vehicle will be operated;
20. Ramps and other sloped surfaces that could affect the vehicle's stability;
21. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust;
22. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.
23. The requirements of applicable OSHA regulations.

## ***REFRESHER TRAINING***

Refresher training in relevant topics shall be provided to the operator when:

1. The operator has been observed to operate the vehicle in an unsafe manner;
2. The operator has been involved in an accident or near-miss incident;
3. The operator has received an evaluation that reveals that the operator is not operating the truck safely;
4. The operator is assigned to drive a different type of truck; or
5. A condition in the workplace changes in a manner that could affect safe operation of the truck.
6. An evaluation of each powered industrial truck operator's performance shall be conducted **at least once every three years**.

Employer certification must include operator name, training date, evaluation date, and trainer/evaluator name.

## **VII. INSPECTIONS**

### ***PRE-USE INSPECTION (Daily)***

A daily pre-use inspection identifies potential hazards that may be encountered from a damaged forklift and should be performed at least daily. If at any time a forklift is found to be in need of repair, defective, or in any way unsafe, remove it from service until it has been restored to safe operating condition.

The pre-use inspection process is as follows:

1. Inspect the mast for broken or cracked weld points and any other obvious damage.
2. Ensure roller tracks are greased and that chains are free to travel.
3. Forks should be equally spaced and free from cracks along the blade and at the heels.
4. Check hydraulic fluid levels.
5. Check each hydraulic line and fitting for excessive wear or crimping.
6. Check lift and tilt cylinders for damage or leaking fluid.
7. Inspect mounting hardware on the cylinders.
8. Check tires for excessive wear, splitting or missing tire material.
9. Check pneumatic tires for proper pressure indicated on the tire.

### ***POWER SOURCE INSPECTION***

#### **Battery Power**

Batteries contain acid so protective gloves, goggles, and long sleeves must be worn when working with batteries.

Batteries should be inspected for:

1. cracks or holes,
2. securely sealed cells,
3. frayed cables,
4. broken insulation,
5. tight connections, and
6. clogged vent caps.

Propane Power

1. The propane tank should be inspected for cracks, broken weld points, and other damage.
2. All valves, nozzles, and hoses should be secure and do not leak.
3. If damage is found, the equipment should not be operated until the damage has been corrected.

## **VIII. FUEL HANDLING AND STORAGE**

Store and handle liquid fuels such as gasoline and diesel in accordance with NFPA Flammable and Combustible Liquids Code (NFPA No. 30-1969).

Store and handle liquefied petroleum gas in accordance with NFPA Storage and Handling of Liquefied Petroleum Gases (NFPA No. 58-1969).

Turn off engine before filling fuel tanks.

## **IX. BATTERY HANDLING AND STORAGE**

### **DESIGNATED AREAS**

1. Locate battery charging installations in designated areas that provide flushing and neutralizing of spilled electrolyte, fire protection, protection of charging apparatus, damage by trucks, and adequate ventilation for dispersal of battery gassing fumes.
2. Battery handling equipment and a carboy tilter or siphon for handling electrolyte should be provided.
3. Smoking is prohibited in the designated area.

### **CHARGING BATTERIES**

1. When charging batteries, pour acid into water; not water into acid.
2. Properly position forklift and apply brake before attempting to change or charge batteries.
3. Ensure vent caps are functioning and the battery (or compartment) cover(s) are open to dissipate heat.
4. Prevent open flames, sparks, or electric arcs in battery charging areas.
5. Keep tools and other metallic objects away from the top of uncovered batteries.

## **X. MAINTENANCE**

- Do not use open flames to check for electrolyte level in storage batteries or liquid fuel level in tanks.
- Conduct repairs to fuel and ignition systems of forklifts which involve fire hazards in designated locations.
- Disconnect batteries prior to repairing electrical systems.
- Use only replacement parts equivalent with those in the original design.
- Do not alter the relative positions of various parts from what they were received from the manufacturer. Do not add any parts not supplied by the manufacturer nor delete any parts supplied by the manufacturer (no additional counterweighting of forklifts unless approved by the manufacturer).
- Keep forklift mufflers in proper working condition and free of debris.
- Keep the forklift in clean condition, free of lint, excess oil, and grease.

## **XI. GENERAL FORKLIFT SAFETY**

The most common forklift accidents are caused: when a person is struck by the forklift, stock is shoved into or falls upon another person or falls upon the forklift operator, the operator is injured when getting on or off the forklift, when the forklift collides with another forklift or other vehicle, when the forklift falls off the dock or tips over, where the operator is struck by passing objects, or the forklift tips over because the rated capacity is exceeded or the load is handled improperly.

When mounting or dismounting a forklift, always:

- face the vehicle,
- never jump off,
- use a three-point stance (always have both hands and one foot or vice-versa in contact with the unit),
- wear proper shoes (oil resistant and non-slippery),
- wear proper clothing (do not wear loose clothing or dangling jewelry), and
- restrain long hair.

After mounting the vehicle, always fasten the seat belt, apply the brake, and shift to neutral. Also, check around the forklift for clearance and pedestrians before moving.

## **XII. FORKLIFT OPERATING GUIDELINES**

- A. Only trained and authorized personnel are permitted to operate a forklift.
- B. Do not stand or pass under the elevated portion of any forklift.
- C. Passengers are prohibited from riding on forklifts.
- D. Do not place arms or legs between the uprights of the mast or outside the running lines of the truck.

- E. A forklift is considered unattended when the operator is 25 feet or more away from the vehicle and it remains in his view, or whenever the operator leaves the vehicle and it is not in his view. When a forklift is left unattended:
1. fully lower load engaging means,
  2. neutralize controls,
  3. shut off power; and
  4. set brakes.
- F. When the forklift operator is dismounted, within 25 feet and in view of the forklift, then fully lower the engaging means, neutralize the controls, and set the brakes to prevent movement.
- G. Maintain a safe distance from the edge of ramps or platforms while on any elevated dock or platform.
- H. Forklifts are not to be used to open or close freight doors.
- I. Where general lighting is less than two lumens per square foot, provide auxiliary directional lighting on the truck.
- J. Fixed jacks may be necessary to support a semi trailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.
- K. Set brakes and block wheels to prevent movement of trucks and trailers while loading or unloading.
- L. Check the flooring of trucks and trailers for breaks and weakness before loading or unloading.
- M. Check for sufficient headroom under overhead hazards such as lights, pipes, or sprinkler systems.
- N. Use only approved forklifts in hazardous locations.
- O. The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.

### **XIII. HANDLING AND MOVING LOADS**

#### **TO PICK UP A LOAD**

1. Only pick up stable and safely arranged loads within the rated capacity of the forklift.
2. Adjust long or high (including multiple tiered) loads which may affect capacity.
3. Square up on the center of the load and approach it straight with forks in traveling position.
4. Stop when the tips of the forks are about a foot away from the load.
5. Level the forks and slowly drive forward until the load is resting against the backrest.
6. Lift the load high enough to clear whatever is under it.
7. Carefully tilt the mast back to stabilize the load.

### ***DRIVING WITH A LOAD***

1. Starts and stops should be gradual.
2. Observe all traffic regulations and keep forklift under control at all times.
3. Reduce speed and sound horn at cross aisles and other locations where vision is obstructed.
4. Pedestrians have the right-of-way. Always be aware of their presence especially in aisles and doorways.
5. Do not drive forklift up to anyone standing in front of a bench or other fixed object.
6. Keep a clear view of the path of travel. Always look in the direction of travel.
7. Always travel with a load tilted slightly back for added stability. Do not lift or lower the load when the forklift is in motion.
8. Travel with the load at a height of four to six inches at the tips and two inches at the heels to clear most uneven surfaces and avoid debris.
9. Horse play is not permitted.
10. Slow down for wet, slippery or uneven floors.
11. Avoid running over loose objects on the roadway surface.
12. Properly secure dockboards and bridgeplates before driving over them. Drive over slowly and never exceed their rated capacity.
13. Drive in reverse rather than looking around the load if you are unable to see over it.
14. Travel down inclines in reverse and up inclines going forward. Ascend and descend grades slowly. If the grade is in excess of 10 percent, drive with load upgrade.

### ***SAFE STEERING***

1. Never make a turn at normal traveling speed, always slow down to maintain balance.
2. Stay wide when turning into an aisle to help clear the sides and square up with the destination.
3. Allow enough room for forks to clear the sides before turning, when backing out of an aisle.
4. When negotiating turns, turn the steering wheel in a smooth sweeping motion. At very low speeds, turn the steering wheel at a moderate, even rate.

### ***TO PUT A LOAD DOWN***

1. Square up and stop about a foot away.
2. Level the forks and then drive the rest of the way in.
3. Lower the load.
4. Tilt the forks slightly forward to avoid hooking the load.
5. Look over both shoulders and back straight out until the forks clear the pallet.

**APPENDIX A – FORKLIFT PRE-USE INSPECTION FORM**

<b>FORKLIFT PRE-USE INSPECTION</b> (COMPLETE PRIOR TO START OF EACH SHIFT)				
	DATE	TRUCK NO.	LOCATION	SHIFT
	TYPE: <input type="checkbox"/> INTERNAL COMBUSTION <input type="checkbox"/> ELECTRIC		HOUR METER:	
	OPERATOR'S SIGNATURE		SUPERVISOR'S SIGNATURE	
<b>CHECK OFF INSPECTED AND CLEARED ITEMS "✓"</b> <b>CHECK ANY DEFECTIVE WITH AN "X" AND GIVE DETAILS BELOW.</b>				
<input type="checkbox"/>	ACCELERATOR	<input type="checkbox"/>	HOUR METER	
<input type="checkbox"/>	ALARMS	<input type="checkbox"/>	HYDRAULIC CONTROLS	
<input type="checkbox"/>	BATTERY CONNECTOR	<input type="checkbox"/>	LIGHTS – HEAD AND TAIL	
<input type="checkbox"/>	BATTERY – INDICATOR	<input type="checkbox"/>	LIGHTS-WARNING	
<input type="checkbox"/>	BELTS	<input type="checkbox"/>	MAST	
<input type="checkbox"/>	BRAKES-PARKING	<input type="checkbox"/>	OIL LEAKS	
<input type="checkbox"/>	BRAKES-SERVICE	<input type="checkbox"/>	OIL PRESSURE	
<input type="checkbox"/>	CABLES	<input type="checkbox"/>	OVERHEAD GUARD	
<input type="checkbox"/>	ENGINE OIL LEVEL	<input type="checkbox"/>	RADIATOR LEVEL	
<input type="checkbox"/>	FORKS	<input type="checkbox"/>	SAFETY EQUIPMENT	
<input type="checkbox"/>	FUEL LEVEL	<input type="checkbox"/>	STEERING	
<input type="checkbox"/>	GAUGES	<input type="checkbox"/>	TIRES	
<input type="checkbox"/>	HORN	<input type="checkbox"/>	UNUSUAL NOISES	
<input type="checkbox"/>	HOSES	<input type="checkbox"/>	OTHER	
DETAILS:				
ORIGINAL				

**APPENDIX B – FORKLIFT OPERATOR PERFORMANCE EVALUATION**

Employee Name	Employee ID Number	Date			Time:
		N/A	Yes	No	Comments
1. Followed proper instructions for maintenance-conducted inspections					
2. Shows familiarity with truck controls					
3. Approached load properly					
4. Checked for overhead clearances and hazards					
5. Load balanced and secured properly					
6. Forks placed under load completely					
7. Lifted load properly					
8. Maneuvered properly					
9. Sounded horn at intersections					
10. Kept a clear view of direction of travel					
11. Turned corners correctly – was aware of rear swing					
12. Yielded to pedestrians					
13. Drove under control; Forklift and load stable					
14. Traveled with load at proper height					
15. Lowered load smoothly/slowly					
16. Stops smoothly/completely					
17. Demo: place loads within marked area					
18. Demo: drive backward when required					
19. Demo: check load weights					
20. Demo: place forks on ground when parked, controls neutralized, brake on set, power off					
Total Rating					
Evaluator		Signature			Date

ORIGINAL

5182

## **APPENDIX C – CALOSHA - FORKLIFT OPERATING RULES**

### **OPERATING RULES FOR INDUSTRIAL TRUCKS**

**General Industry Safety Order 3664**  
**Operating Rules (Part (a)).**

- (a) Every employer using industrial trucks or industrial tow tractors shall post and enforce a set of operating rules including the appropriate rules listed in Section 3650.

**General Industry Safety Order 3650**  
**Industrial Trucks. General (Part(s)).**

- (t) Industrial trucks and tow tractors shall be operated in a safe manner in accordance with the following operating rules:
- (1) Only drivers authorized by the employer and trained in the safe operations of industrial trucks or industrial tow tractors pursuant to Section 3668 shall be permitted to operate such vehicles.
  - (2) Stunt driving and horseplay are prohibited.
  - (3) No riders shall be permitted on vehicles unless provided with adequate riding facilities.
  - (4) Employees shall not ride on the forks of lift trucks.
  - (5) Employees shall not place any part of their bodies outside the running lines of an industrial truck or between mast uprights or other parts of the truck where shear or crushing hazards exist.
  - (6) Employees shall not be allowed to stand, pass, or work under the elevated portion of any industrial truck, loaded or empty, unless it is effectively blocked to prevent it from falling.
  - (7) Drivers shall check the vehicle at the beginning of each shift, and if it is found to be unsafe, the matter shall be reported immediately to a foreman or mechanic, and the vehicle shall not be put in service again until it has been made safe. Attention shall be given to the proper functioning of tires, horn, lights, battery, controller, brakes, steering mechanism, cooling system, and the lift system for fork lifts (forks, chains, cable, and limit switches).
  - (8) No truck shall be operated with a leak in the fuel system.
  - (9) Vehicles shall not exceed the authorized or safe speed, always maintaining a safe distance from other vehicles, keeping the truck under positive control at all times and all established traffic regulations shall be observed. For trucks traveling in the same direction, a safe distance may be considered to be approximately 3 truck lengths or preferably a time lapse — 3 seconds — passing the same point.
  - (10) Trucks traveling in the same direction shall not be passed at intersections, blind spots, or dangerous locations.
  - (11) The driver shall slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.
  - (12) Operators shall look in the direction of travel and shall not move a vehicle until certain that all persons are in the clear.
  - (13) Trucks shall not be driven up to anyone standing in front of a bench or other fixed object of such size that the person could be caught between the truck and object.
  - (14) ~~Grades shall be ascended or descended slowly.~~  
(A) ~~When ascending~~ or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.
  - (B) On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.
  - (C) Motorized hand and hand/rider trucks shall be operated on all grades with the load-engaging means downgrade.
  - (15) The forks shall always be carried as low as possible, consistent with safe operations.
  - (16) When leaving a vehicle unattended (the operator is over 25 feet (7.6 meters) from or out of sight of the industrial truck), the brakes are set, the mast is brought to the vertical position, and forks are left in the down position, either:
    - (A) The power shall be shut off and, when left on an incline, the wheels shall be blocked; or
    - (B) The power may remain on provided the wheels are blocked, front and rear.
  - (17) When the operator of an industrial truck is dismounted and within 25 feet (7.6 meters) of the truck which remains in the operator's view, the load engaging means shall be fully lowered, controls placed in neutral, and the brakes set to prevent movement.

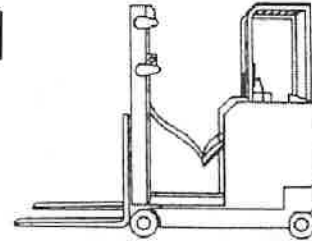
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**SAFETY STANDARDS (Procedures)**  
**Section: 4.05 Forklift Operations**

**Revision Number: 1**  
**Revision Date: 6/20/2013**  
**File Name: P405**

Operating rules for industrial trucks contained on this poster are current through Register 2002, No. 22 California Code of Regulations (operative 6-27-2002). Other rules may also apply.



**Exception:** Forks on fork-equipped industrial trucks may be in the raised position for loading and unloading if the forks are raised no more than 42 inches above the level where the operator/loaders are standing, and the power is shut off, controls placed in neutral and the brakes set. If on an incline, the wheels shall be blocked.

- (18) Vehicles shall not be run onto any elevator unless the driver is specifically authorized to do so. Before entering an elevator, the driver shall determine that the capacity of the elevator will not be exceeded. Once on an elevator, the industrial truck's power shall be shut off and the brakes set.
- (19) Motorized hand trucks shall enter elevators or other confined areas with the load end forward.
- (20) Vehicles shall not be operated on floors, sidewalk doors, or platforms that will not safely support the loaded vehicle.
- (21) Prior to driving onto trucks, trailers and railroad cars, their flooring shall be checked for breaks and other structural weaknesses.
- (22) Vehicles shall not be driven in and out of highway trucks and trailers at loading docks until such trucks or trailers are securely blocked or restrained and the brakes set.
- (23) To prevent railroad cars from moving during loading or unloading operations, the car brakes shall be set, wheel chocks or other recognized positive stops used, and blue flags or lights displayed in accordance with applicable regulations promulgated by the Public Utilities Commission.
- (24) The width of one tire on the powered industrial truck shall be the minimum distance maintained from the edge by the truck while it is on any elevated dock, platform, freight car or truck.
- (25) Railroad tracks shall be crossed diagonally, wherever possible. Parking closer than 8 1/2 feet from the centerline of railroad tracks is prohibited.
- (26) Trucks shall not be loaded in excess of their rated capacity.
- (27) A loaded vehicle shall not be moved until the load is safe and secure.
- (28) Extreme care shall be taken when tilting loads. Tilting forward with the load engaging means elevated shall be prohibited except when picking up a load. Elevated loads shall not be tilted forward except when the load is being deposited onto a storage rack

- or equivalent. When stacking or tiering, backward tilt shall be limited to that necessary to stabilize the load.
- (29) The load engaging device shall be placed in such a manner that the load will be securely held or supported.
- (30) Special precautions shall be taken in the securing and handling of loads by trucks equipped with attachments, and during the operation of these trucks after the loads have been removed.
- (31) When powered industrial trucks are used to open and close doors, the following provisions shall be complied with:
  - (A) A device specifically designed for opening or closing doors shall be attached to the truck.
  - (B) The force applied by the device to the door shall be applied parallel to the direction of travel of the door.
  - (C) The entire door opening operation shall be in full view of the operator.
  - (D) The truck operator and other employees shall be clear of the area where the door might fall while being opened.
- (32) If loads are lifted by two or more trucks working in unison, the total weight of the load shall not exceed the combined rated lifting capacity of all trucks involved.



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## HAZARDOUS WASTE OPERATIONS

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## **HAZARDOUS WASTE OPERATIONS**

### **I. PURPOSE**

The purpose of the Hazardous Waste Operations and Emergency Response Program is to provide guidelines for training and response to incidents involving the uncontrolled release of hazardous materials at Client facilities.

### **II. SCOPE**

These Hazardous Waste Operations and Emergency Response Guidelines apply to any Company employee who respond to an uncontrolled release of hazardous materials as defined by 29 CFR 1910.120 or Title 8 CCR 5192.

### **III. APPLICABLE REGULATIONS**

This program is written to assist in complying with the provisions set forth in the following regulations:

- TITLE 8 CCR, subsection 5192, *Hazardous Waste Operations/Emergency Response*
- 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response*
- 29 CFR 1926.65, *Hazardous Waste Operations and Emergency Response*

Other regulations and guidelines, either directly or indirectly, applicable to the requirements of this plan include:

- 29 CFR 1910.1200, *Hazard Communication*
- 29 CFR 1910.146, *Permit-Required Confined Spaces*
- 29 CFR 1910.1038, *Benzene*
- 29 CFR 1910.134, *Respiratory Protection*
- Company Specific, *Corporate Health and Safety Policies*

All operations personnel having the potential for exposure to site hazards are subject to the requirements of this Site-Specific HASP. The COMPANY Project Manager will serve as the Site Safety Officer (SSO) for the activities and will be responsible for implementation of the Site-Specific HASP and oversight of the field personnel. Specific health and safety roles and responsibilities are as follows:

### **IV. RESPONSIBILITIES**

#### ***PROJECT MANAGER***

The Project Manager will ensure that the a Site Safety Plan (SSP) is prepared, is compatible with the field study procedures, and that it is implemented appropriately. The Project Manager will also review the plan during its preparation and will

authorize the plan after it has been reviewed and authorized by the Program/Agency Safety Officer, Site Safety Officer (SSO), and individual employees. Finally, the Project Manager will review and approve any modifications to the HASP, as needed.

### ***SITE SAFETY OFFICER (SSO)***

The Site Safety Officer has primary authority and responsibility to ensure company implementation of the safety plan and to ensure the health and safety of company personnel, and client(s). This is accomplished by communicating the requirements of the plan, analyzing work procedures for hazard identification and correction, ensuring appropriate health and safety training has been completed, and encouraging prompt employee reporting of health and safety concerns.

The Site Safety Officer has responsibility for:

- Ensuring a Pre-entry safety meeting is held and documented each day prior to initiating any site activity and at such other times as necessary to ensure that employees are apprised of the site specific safety plan and that this plan is being followed.
- Briefing personnel working in the study area on the contents of this HASP, including potential hazards, safe work practices personal protective equipment (PPE), and emergency procedures prior to project initiation.
- Ensuring that specified PPE is available and worn by field personnel working in the project area.
- Ensuring required monitoring activities are performed and documented in the project area.
- Obtaining information and data from ongoing site characterization(s) and analysis work.
- Ensuring the effectiveness of the safety plan by performing inspections to determine its effectiveness.
- Correcting any deficiencies in the effectiveness as work progresses.

### ***INDIVIDUAL EMPLOYEES***

It is the responsibility of individual employees to comply with all applicable health and safety regulations, company policies, and established work practices. This includes but is not limited to:

- Attending the daily Pre-entry briefings, and observing health and safety-related signs, posters, warning signals and directions
- Reviewing the area emergency plan and assembly area
- Following all safe operating procedures and precautions
- Using proper personal protective equipment
- Reporting unsafe conditions immediately to a supervisor, and stopping work if an imminent hazard is presented
- Reading and understanding the requirements and procedures in the site safety plan.

- Participating in all Health and Safety training, which may include a 40-hour OSHA approved training course, daily site safety briefings, and site-specific training.
- Maintaining PPE, including safety eyeglasses, steel-toe boots, and respiratory protection equipment in good working condition for use, as required.

## **V. GENERAL REQUIREMENTS**

1. Employees will be trained in the area they are working in. The training will be based on the duties and functions the employee intends to administer. As a general rule, most company employees will be trained in accordance with the 24- hour site worker criteria described in 29 CFR 1910.120 with an additional 1 day of field work. If contaminants have the potential to exceed the permissible exposure levels which will require the use of respirators, forty hours of training will be performed with 3 days of field work. Management and supervisors shall attend an additional 8 hours of supervisor training. Certificates of training shall be available on site while commencing any hazardous materials work.

2. First responder awareness level training is for individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release.

These individuals are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release.

3. Trainers who teach any of the required classes must be qualified to instruct in hazardous waste operations and emergency response. In addition, they must satisfactorily completed a course for teaching the specific subjects they are expected to teach, or they must have the training and/or academic credentials and instructional experience necessary to demonstrate competent instructional skills in the subject matter.
4. An 8 hour annual refresher class is required for any personnel who has completed the on site worker, or management training. Topics will include an overview of the initial training and a critique of incidents that occurred over the last year. A record of methods used must be kept on file at the main office.
5. An emergency response plan shall be developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations. The plan shall be in writing and available for inspection by employees, their representatives and OSHA.
6. The emergency response program must address the following minimum elements:

- Pre-emergency planning & coordination with outside parties.
  - Personnel roles, lines of authority, training & communications.
  - Emergency recognition & prevention.
  - Safe distances & places of refuge.
7. The senior official at an emergency response is the most senior official on the site who has the responsibility for controlling operations at the site. All other personnel will be assigned per the Incident Command System organizational chart.
8. Emergency response employees who exhibit signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency shall be provided with medical consultation.

#### **VI. EMPLOYEE TRAINING**

Employee training will be conducted according to applicable emergency response regulations. As a general rule, most company field employees will be trained in accordance with the 24-hour site worker criteria described in 29 CFR 1910.120 with an additional 1 day of field work. If contaminants have the potential to exceed the permissible exposure levels which will require the use of respirators, forty hours of training will be performed with 3 days of field work. Management and supervisors shall attend an additional 8 hours of supervisor training. Certificates of training shall be available on site while commencing any hazardous materials work.

The following items are taught in class and re-enforced at the field:

- Training and frequency requirements.
- Chemical hazards.
- Emergency Response Plan, [29 CFR 1910.120(l)].
- Engineering controls and work practices.
- Heavy machinery.
- Personal protective equipment.
- Physical hazards.
- Respiratory Protection.
- Sanitation [29 CFR 1910.120(n)].
- Site Characterization and Analysis.
- Site Control [29 CFR 1910.120(d)].
- Symptoms of overexposure to hazards.

Documentation of site-specific training should be provided in the field log book.

## **VII. ANNUAL REFRESHER TRAINING**

An 8 hour annual refresher class is required for any personnel who has completed the on site worker, or management training. Topics will include an overview of the initial training and a critique of incidents that occurred over the last year.

## **VIII. TRAINERS**

Trainers who teach any of the required classes must be qualified to instruct in hazardous waste operations and emergency response. In addition, they must satisfactorily completed a course for teaching the specific subjects they are expected to teach, or they must have the training and/or academic credentials and instructional experience necessary to demonstrate competent instructional skills in the subject matter.

## **IX. REQUIRED PERSONAL PROTECTIVE EQUIPMENT**

All personnel performing operations on a hazardous materials site shall be required to use the appropriate level of PPE as specified by the SSO.

This section describes the personal protective equipment (PPE) ensemble described in the regulations. OSHA designates levels of protection ranging from A to D. The specific levels of protection at the site will vary according to job tasks and site conditions. As a general rule, PPE must be worn when response activities involve known or suspected atmospheric contamination vapors, gases, or particulates, which may be generated by site activities, or when direct contact with skin-affecting substances may occur. Chemical-resistant clothing protects the skin from contact with skin-destructive and potentially hazardous absorbable chemicals.

### ***LEVELS OF PERSONAL PROTECTIVE EQUIPMENT***

The specific levels of protection and necessary components for each have been divided into four categories according to the degrees of protection afforded:

- Level A:** Should be worn when the highest level of respiratory, skin, and eye protection is needed.
- Level B:** Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection.
- Level C:** Should be worn when the criteria for using air-purifying respirators are met, and a lesser level of skin protection is needed.
- Level D:** Should be worn when respiratory protection is not required, but some skin protection is necessary. For example, PPE may include Anti-C's, shoe covers, gloves, TLD's.
- Modified Level D:** Same as Level D but with the addition of dermal (skin) protection added, i.e., impermeable (PVC) steel toed boots and impermeable coveralls and chemical resistance gloves.

Modifications of these levels are permitted, and may be routinely employed during site work activities. For example, Level C respiratory protection and Level D skin protection may be required for a given task. Likewise, the type of chemical protective ensemble (i.e., material, format) will depend on contaminants and degree of contact expected for each work activity and work area.

The Level of Protection selected is based upon the following:

- Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity.
- Potential for exposure to hazardous substances by ingestion, inhalation or skin contact.
- Knowledge of on-site hazardous substances along with properties such as toxicity, route of exposure, and contaminant matrix.

Prior to initial site entry, the level of PPE needs to be determined by worst-case scenario using site-specific knowledge. In situations where the types of contaminants and their concentration are not known or available, the highest appropriate level of protection shall be selected based on professional experience and judgment of the SSO until the hazards can be better identified. The specific levels of protection selected for each task are listed in Section 5.

#### **Level A Personnel Protective Equipment**

- Supplied-air respirator approved by the Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH). Respirators must be positive-pressure self-contained breathing apparatus (SCBA), or positive-pressure airline respirator with escape bottle for Immediately Dangerous to Life and Health (IDLH) or potential IDLH atmospheres
- Fully encapsulating chemical-resistant suit
- Coveralls
- Long cotton underwear
- Long underwear
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots, chemical-resistant, steel-toed and shank (depending on suit construction, worn over or under suit boot)
- Hard hat (Note: Wear hardhat under hood of coveralls)
- Disposable gloves and boot covers may be worn over fully-encapsulating suit.

#### **Level B Personnel Protective Equipment**

- Supplied-air respirator approved by the Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH).

Respirators must be positive-pressure self-contained breathing apparatus (SCBA), or positive-pressure airline respirator with escape bottle for Immediately Dangerous to Life and Health (IDLH) or potential IDLH atmospheres

- Chemical-resistant clothing (coveralls and long-sleeved jacket; hooded, one or two-piece chemical-splash suit; disposable chemical-resistant, one-piece suits)
- Coveralls
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots (outer), chemical-resistant, steel-toed and shank
- Boot-covers (outer), chemical-resistant (disposable)
- Hard hat

### **Level C Personnel Protective Equipment**

- Air-purifying respirator, full-face, cartridge-equipped (MSHA/NIOSH approved)
- Chemical-resistant clothing (coveralls: hooded, one-piece or two-piece chemical splash suit; chemical-resistant hood and apron; disposable chemical-resistant coveralls)
- Coveralls
- Long cotton underwear
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots (outer), chemical-resistant, steel-toed and shank
- Boot-covers (outer), chemical-resistant (disposable)
- Hard hat

### **Level D Personnel Protective Equipment**

- Coveralls and/or chemical resistance suit
- Hand protection consisting of inner chemical resistance and outer chemical resistance gloves
- Boots/shoes, leather or chemical-resistant, steel-toe and shank
- Safety glasses
- Hard hat
- Shoe/boot covers

The minimum personal protective equipment required by the Company on a typically oil spill shall consist of the following:

1. Hard Hat meeting ANSI Z89.1 standard
2. Steel Toed Boots meeting ANSI Z41 standards - chemical resistant
3. Safety Glasses meeting ANSI Z87.1 standard
4. Gloves - chemical resistant
5. Coveralls -chemical resistant

Minimum required personal protective equipment listed assumes toxins, corrosives, flammable substances and other health hazards are within acceptable safe limits. Additionally, site assessments must reveal that respiratory equipment for personnel will not be required. In the event that any of these hazards exists, the site safety manager shall determine the appropriate personal protective equipment to be used based on the levels outlined in the regulation.

#### **X. FREQUENCY AND TYPES OF AIR MONITORING/SAMPLING**

This section explains the general concepts of the air monitoring program and specifies the surveillance activities that will take place during project completion at the site. The purpose of air monitoring is to identify and quantify airborne contaminants in order to verify and determine the level of worker protection needed. Initial screening for identification is often qualitative, i.e., the contaminant, or the class to which it belongs, is demonstrated to be present, but the determination of its concentration (quantification) must await subsequent testing.

Two principal approaches are available for identifying and/or quantifying airborne contaminants:

- The on-site use of direct-reading instruments.
- Laboratory analysis of air samples obtained by gas sampling bag, collection media (i.e., filter, sorbent), and/or wet-contaminant collection methods.

Air monitoring shall identify and qualify airborne levels of hazardous substances. Monitoring should address initial entry, periodic monitoring, and possible IDLH dangers. The tasks specific conditions and duration of monitoring, including PPE assessments shall be specified within the site specific safety plan.

#### **XI. EMERGENCY RESPONSE PLAN**

Written emergency response plans shall be developed to address anticipated uncontrolled releases. The emergency response plan must address the criteria outlined below:

1. Pre-emergency planning
2. Personnel roles, lines of authority, and communication.
3. Emergency recognition and prevention.
4. Safe distances and places of reference.
5. Site security and control.
6. Evacuation routes and procedures.
7. Decontamination procedures.
8. Emergency medical treatment and first aid.
9. Emergency alerting and response procedures.
10. Critique of response and follow up.

11. Personal protective and emergency equipment.

## **XII. MEDICAL SURVEILLANCE REQUIREMENTS**

Medical monitoring programs are designed to track the physical condition of employees on a regular basis as well as establish pre-employment or baseline conditions prior to potential exposures. The medical surveillance program is a part of company health and safety program and is given at no cost to employees.

### ***BASELINE OR PRE-ASSIGNMENT MONITORING***

Prior to being assigned to a hazardous or a potentially hazardous activity involving exposure to toxic or hazardous substances, each employee will receive a pre-assignment or baseline physical. The specific tests and requirements of each physical are to be determined by company medical consultant. As suggested by NIOSH/OSHA/USCG/EPA's Occupational Safety & Health Guidance Manual for Hazardous Waste Site Activities, the minimum medical monitoring requirements for work at the Site are as follows:

- Complete medical and work histories
- Physical examination
- Pulmonary function tests (FVC and FEV1)
- Chest X-ray (baseline, or as required by a physician)
- EKG
- Eye examination and visual acuity
- Audiometry
- Urinalysis
- Blood chemistry and heavy metals toxicology
- Whole Body Count (If there is a possibility that the employee will be exposed to ionizing radiation)
- During the pre-assignment (baseline) physical, the occupation physician should determine if each employee is fit-for-duty and able to wear respiratory protection
- (OSHA Respirator Medical Evaluation Questionnaire (Mandatory) - 29 CFR 1910.134 App C (effective January 5, 1999) applies).

Depending on anticipated site activities and site contaminants, the occupational physician may suggest additional testing.

### ***PERIODIC MONITORING***

In addition to a baseline physical, all employees must have an annual physical unless the advising physician believes a shorter interval is appropriate. The employer's medical consultant should prescribe an adequate medical examination which fulfills OSHA and EPA's SSP requirements. The pre-assignment medical examination outlined above may be applicable.

All personnel working in contaminated or potentially contaminated areas at the site will attest to their medical monitoring exam within the previous twelve month period. This is done by indicating the date of the last physical on the safety meeting sign in sheet.

#### ***SITE-SPECIFIC MEDICAL MONITORING***

For some sites and contaminants, specific tests may be required prior to individuals entering the site. If contaminants exceed published action levels the Company Health Physicist and/or Occupational Physician will be consulted.

#### ***EXPOSURE/INJURY/MEDICAL SUPPORT***

As a follow-up to an injury or possible exposure above established exposure limits, all employees are entitled, and encouraged, to seek medical attention and physical testing. Depending on the type of exposure, it is critical to perform follow-up testing within 24-48 hours. It will be up to Company's medical consultant to advise the type of test(s) required to accurately monitor for exposure effects. It is advisable that the examining physician should consult the HPO to ensure that the most appropriate information about radiation be available to the physician.

#### ***EXIT PHYSICAL***

At termination of employment or reassignment to an activity or location which does not represent a risk of exposure to hazardous substances, an employee shall receive an exit physical.

### **XIII. DECONTAMINATION PLAN**

#### ***STANDARD OPERATING PROCEDURES***

Decontamination involves the orderly controlled removal of contaminants. Standard decontamination sequences are presented in the decontamination figure. All site personnel should minimize contact with contaminants in order to minimize the need for extensive decontamination. If necessary, showers and other sanitation equipment shall be provided in accordance with the Company Sanitation Policy.

##### **Level A Decontamination**

- Step 1 Segregated equipment drop
- Step 2 Boot cover and glove wash
- Step 3 Boot cover and glove rinse
- Step 4 Tape removal - boot and glove
- Step 5 Boot cover removal
- Step 6 Outer glove removal
- Step 7 Suit/safety boot wash
- Step 8 Suit/safety boot rinse

- Step 9 Safety boot removal
- Step 10 Fully encapsulating suit removal
- Step 11 SCBA backpack and hard hat removal
- Step 12 Inner glove wash
- Step 13 Inner glove rinse
- Step 14 Face piece removal
- Step 15 Inner glove removal
- Step 16 Inner clothing removal
- Step 17 Field wash
- Step 18 Redress

**Level B Decontamination**

- Step 1 Segregated equipment drop
- Step 2 Boot cover and glove wash
- Step 3 Boot cover and glove rinse
- Step 4 Tape removal - boot and glove
- Step 5 Boot cover removal
- Step 6 Outer glove removal
- Step 7 Suit/safety boot wash
- Step 8 Suit/safety boot rinse
- Step 9 Safety boot removal
- Step 10 SCBA backpack removal
- Step 11 Coverall and hard hat removal
- Step 12 Inner glove wash
- Step 13 Inner glove rinse
- Step 14 Face piece removal
- Step 15 Inner glove removal
- Step 16 Inner clothing removal
- Step 17 Field wash
- Step 18 Redress

**Level C Decontamination**

- Step 1 Segregated equipment drop

- Step 2 Boot cover and glove wash
- Step 3 Boot cover and glove rinse
- Step 4 Tape removal
- Step 5 Boot cover removal
- Step 6 Outer glove removal
- Step 7 Suit/safety boot wash
- Step 8 Suit/safety boot rinse
- Step 9 Safety boot removal
- Step 10 Splash suit removal
- Step 11 Inner glove wash
- Step 12 Inner glove rinse
- Step 13 Face piece removal
- Step 14 Inner glove removal
- Step 15 Inner clothing removal
- Step 16 Field wash
- Step 17 Redress

#### **Level D Decontamination**

- Step 1 Remove outer garments (i.e., coveralls)
- Step 2 Remove gloves
- Step 3 Wash hands and face

#### ***LEVELS OF DECONTAMINATION PROTECTION REQUIRED FOR PERSONNEL***

The levels of protection required for personnel conducting or assisting with the decontamination process will utilize Level C. The SSO is responsible for monitoring decontamination procedures and ensuring appropriate level of PPE has been selected. Employee may not leave the area until all associated clothing and materials have been disposed of or decontaminated.

#### ***EQUIPMENT DECONTAMINATION***

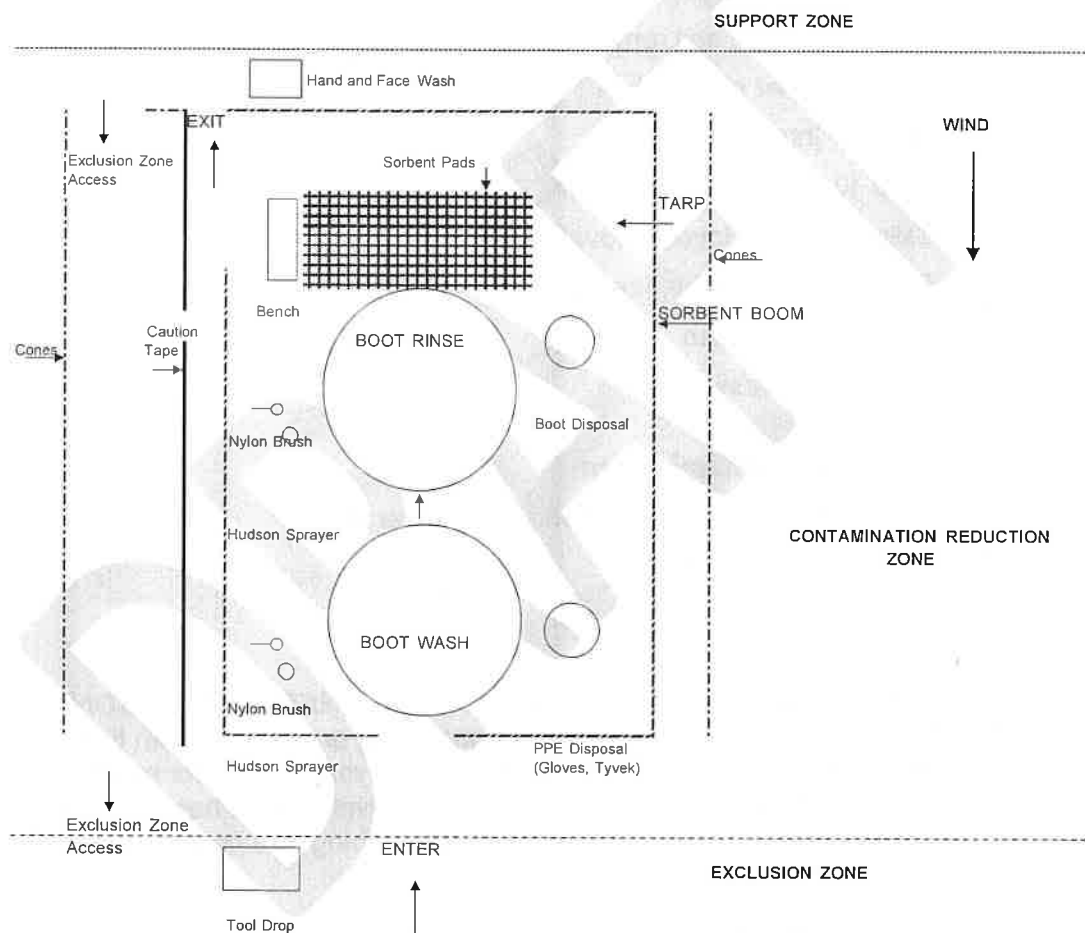
Sampling equipment and personal protective equipment will be decontaminated in accordance with procedures as defined in the project operations plan and SOPs. PPE and other equipment that cannot be decontaminated, cleaned, laundered, maintained shall be replaced.

### ***DISPOSITION OF DECONTAMINATION WASTES***

All equipment and solvents used for decontamination shall be decontaminated or disposed of properly as per the site specific waste management plan. Commercial laundries or cleaning establishments that decontaminate protective clothing or equipment shall be informed of the potentially harmful effects of exposures.

Decon location and layout shall follow the schematic listed below.

### **XIV. DECON LOCATION AND LAYOUT SCHEMATIC**



## **XV. SITE CONTROL MEASURES**

The following section defines measures and procedures for maintaining site control. Site control is an essential component to preventing unauthorized entry into controlled zones.

### ***BUDDY SYSTEM***

During all activities, the implementation of a buddy system is mandatory. A buddy system requires at least two people who work as a team; each looking out for each other.

### ***SITE COMMUNICATIONS PLAN***

Successful communications between field teams and contact with personnel in the support zone is essential. Two-way radios and hand signals will be the main mode of communication on the site. The following list outlines the hand signals and their definitions.

**Hand Signals and Definitions**

<b>Signal</b>	<b>Definition</b>
Hands clutching throat	Out of air/cannot breath
Hands on top of head	Need assistance
Thumbs up	OK/I am all right/I understand
Thumbs down	No/negative
Arms waving upright	Send backup support
Grip partners wrist	Exit area immediately

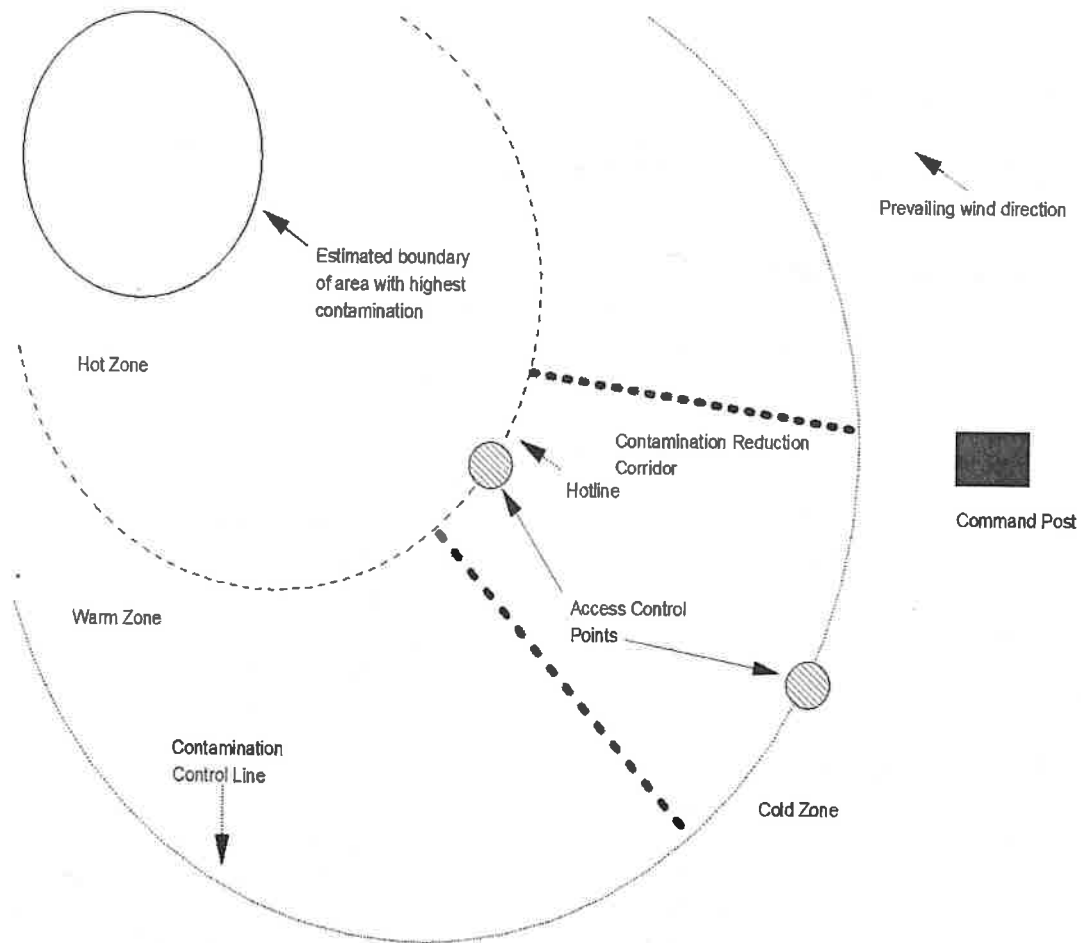
### ***WORK ZONE DEFINITION***

The three general work zones established at the site are the Exclusion Zone, the Contamination Reduction Zone, and the Support Zone. The figure below provides a site map with the work zones designated. The Exclusion Zone is defined as the area where contamination is either known or likely to be present, or because of activity, will provide a potential to cause harm to personnel. Entry into the Exclusion Zone requires the use of PPE.

The Contamination Reduction Zone is the area where personnel conduct personal and equipment decontamination. It is a buffer zone between contaminated areas and clean areas. Activities to be conducted in this zone will require personal protection as defined in the decontamination plan.

The Support Zone is situated in clean areas where the chance of encountering hazardous materials or conditions is minimal. However, even in support zones, some PPE, such as hard hats, safety shoes, and/or safety glasses, may be required.

XVI. SITE MAP DEPICTING WORK ZONES



## SITE SAFETY PLAN

### INCIDENT INFORMATION

Location: \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Site Supervisor: \_\_\_\_\_  
Brief Description of Incident: \_\_\_\_\_  
\_\_\_\_\_

Product Spilled: \_\_\_\_\_

Contained: ☐ Yes ☐ No

### PERSONAL PROTECTIVE EQUIPMENT

- |  |  |
|--|--|
| <input type="checkbox"/>                   | <input type="checkbox"/>               |
| <input type="checkbox"/> Hard Hat          | <input type="checkbox"/> Work Vest     |
| <input type="checkbox"/> Safety Glasses    | <input type="checkbox"/> Barrier Cream |
| <input type="checkbox"/> S.T. Rubber Boots | <input type="checkbox"/> Goggles       |
| <input type="checkbox"/> Tyvek             | <input type="checkbox"/> Face Shield   |
| <input type="checkbox"/> Rain Slicker      | <input type="checkbox"/> Rubber Gloves |
| <input type="checkbox"/> Face Shield       | <input type="checkbox"/> Duct Tape     |
| <input type="checkbox"/> Respirator        | <input type="checkbox"/> Sun Screen    |

### PHYSICAL HAZARDS

- |  |   |
|--|---|
| <input type="checkbox"/> Terrain                 | <input type="checkbox"/> Crane operations |
| <input type="checkbox"/> Slip/Trip/Fall          | <input type="checkbox"/> Electrical       |
| <input type="checkbox"/> Small boat operations   | <input type="checkbox"/> Noise            |
| <input type="checkbox"/> Heavy Equip. operations | <input type="checkbox"/> Heat exhaustion  |
| <input type="checkbox"/> Transfer operations     | <input type="checkbox"/> Overhead         |
| <input type="checkbox"/> Biological              | <input type="checkbox"/> Confined space   |
| <input type="checkbox"/>                         | <input type="checkbox"/>                  |
| Chemical   | Atmospheric                               |

### MONITORING INFORMATION

#### INITIAL TEST:

O<sub>2</sub> \_\_\_\_\_  
LFL \_\_\_\_\_  
H<sub>2</sub>S \_\_\_\_\_  
Benzene \_\_\_\_\_  
Other: \_\_\_\_\_  
Type of monitor: \_\_\_\_\_  
Calibration Date: \_\_\_\_\_  
Frequency of testing: \_\_\_\_\_

### COMMUNICATION INFORMATION

Command Post Phone #: \_\_\_\_\_  
Working Radio Freq. # \_\_\_\_\_  
Emergency Radio Freq. # \_\_\_\_\_  
Other: \_\_\_\_\_

### EMERGENCY EVACUATION/SERVICES

Evacuation/Alarm Signal: \_\_\_\_\_  
Evacuation Assembly Location: \_\_\_\_\_  
Name of Service Phone # \_\_\_\_\_  
\_\_\_\_\_

### WEATHER AND SEA

Wind Direction: (From): \_\_\_\_\_  
Speed: \_\_\_\_\_ Sun % \_\_\_\_\_  
Temperature: \_\_\_\_\_ Humidity: \_\_\_\_\_  
Fog: \_\_\_\_\_ Rain: \_\_\_\_\_  
Sea Condition (ft.): \_\_\_\_\_  
Ground (wet/dry): \_\_\_\_\_  
Other: \_\_\_\_\_

### SITE DESCRIPTION

- ☐ Attach site map indicating location of perimeter, control zones, command post, decon corridor and decon procedures.

### TRAINING REQUIRED

- ☐ Emergency Response (Subpart (q) compliant)  
☐ 24 hour Hazwoper (below PEL)  
☐ 40 hour Hazwoper (above PEL)  
Other: \_\_\_\_\_

### SAFETY MEETING TOPICS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Print Name: \_\_\_\_\_

Signature: \_\_\_\_\_

- ☐ Attach MSDS  
☐ Attach Safety Meeting Report  
and fax to Incident Command  
Page 17 of 16

DRAFT

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Appendix A - Guidelines for Heat Exposure Limits

## HEAT ILLNESS

### I. OBJECTIVE

Many workers at the company work in hot environments. Working in hot conditions poses many safety and health hazards to the workers. This policy addresses ways to minimize and control these hazards. The objective of this policy is to reduce the risk of illness, injury or fatality to company employees, contractors and related personnel from heat related disorders.

California Employers with any outdoor places of employment must comply with the Heat Illness Prevention Standard T8 CCR 3395. These procedures have been created to assist the employer in crafting their heat illness prevention procedures, and to reduce the risk of work related heat illnesses among their employees.

### II. AUTHORITY

Title 8 CCR 3395, Heat Illness Standard

### III. POLICY

This policy sets forth company requirements for work in hot environments.

### IV. DEFINITIONS

**"Acclimatization"** means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

**"Heat Illness"** means a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

**"Environmental risk factors for heat illness"** means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

**"Personal risk factors for heat illness"** means factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

**"Preventative recovery period"** means a period of time to recover from the heat in order to prevent heat illness.

"**Shade**" means blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

## **V. RESPONSIBILITIES**

Safety Representative is available to monitor the heat exposure of individual jobs and make recommendations to reduce heat stress risk. If employees must work for extended periods (i.e. more than 1 continuous hour/day) outdoors during hot weather or above the threshold limit value (TLV) for heat exposure.

Supervisors have the primary responsibility for the implementation of the Heat Stress Prevention Program in their work area. The supervisor has ultimate responsibility for the safety of the employees. This includes evaluation of the work to be performed, providing ready access to drinking water or electrolyte replacement drinks, ensuring workers take are familiar with the signs and symptoms of heat related disorder, allow for acclimatization of workers in hot environments, adoption of work rest regimes and scheduling of work to reduce heat stresses as appropriate and providing training for employees.

Employees are responsible for attending training and following the instructions given. They are also responsible for monitoring themselves for signs and symptoms of heat stress.

## **VI. GENERAL REQUIREMENTS**

1. Employees shall have access to potable drinking water. Where it is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity throughout the work shift.
2. Employees suffering from heat illness or believing a preventative recovery period is needed, shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling. Such access to shade shall be permitted at all times.
3. Supervisors must receive training in the prevention of heat related illnesses prior to supervising employees working in heat.
4. Supervisors must be trained in the employer's heat illness procedures to prevent heat illness and procedures to follow when a employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

5. Procedures must be in place to control the effects of environmental factors that can contribute to heat related illness. The most common environmental factors are air temperature, humidity, radiant heat sources and air circulation. Refer to section VII for specific requirements.
6. Physical factors that contribute to heat related illness should be taken into consideration before performing a task. The most common physical factors that can contribute to heat related illness are type of work, level of physical activity and duration, and clothing color, weight and breathability.
7. Supervisors must ensure personal factors that contribute to heat related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring. The most common personal factors that can contribute to heat related illness are age, weight/fitness, drug/alcohol use, prior heat-related illness, etc.

## **VII. PROCEDURES**

These procedures are not intended to supersede or replace the application of any other Title 8 regulation, particularly T8 3203 Injury and Illness Prevention Program (IIPP). Title 8 CCR 3203 requires an employer to establish, implement, and maintain an effective IIPP.

There are other standards that apply to Heat Illness Prevention some of the provisions that were already required by regulation include:

- Providing for Emergency Medical Services (EMS)
- Providing adequate supply of Potable Water
- Keeping drinking water fresh and suitably cool
- Keeping clean drinking cups available
- Provide CPR/First Aid training for any remote location.

The key elements within this Heat Illness Prevention Program are those contained in Title 8 of the California Code of Regulations, Section 3395 (T8 CCR 3395) and consist of the following:

1. Provisions for Water
2. Access to Shade
3. Written Procedures
4. Training

## **VIII. PROVISIONS FOR WATER**

Water is a key preventive measure to minimize the risk of heat related illnesses.

3395 (c) Employees shall have access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable. Where the supply of water is not plumbed or otherwise continuously supplied, water shall be provided in sufficient quantity at the beginning of the work shift to provide **one quart per employee per hour for drinking** for the entire shift.

Supervisors may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in (e), shall be encouraged.

### **Procedures for Provisions of Water**

1. Bring at least 2 quarts per employee at the start of the shift, and Supervisor/designated person will monitor water containers every 30 minutes, and employees are encouraged to report to supervisor/designated person low levels or dirty water.
2. Supervisor will provide frequent reminders to employees to drink frequently, and more water breaks will be provided.
3. On days that will exceed 75 degrees F, every morning there will be short tailgate meetings to remind workers about the importance of frequent consumption of water throughout the shift.
4. Place water containers as close as possible to the workers, not away from them.
5. When drinking water levels within a container drop below 50%, the water shall be replenished immediately; or water levels should not fall below the point that will allow for adequate water during the time necessary to effect replenishment.
6. Disposable/single use drinking cups will be provided to employees, or provisions will be made to issue employees their own cups each day.
7. Noise making devices, such as air horns, may be used to remind employee's to take their water break.

To ensure access to sufficient quantities of potable drinking water Supervisors must either provide clean iced coolers or iced bottled water **one quart per employee per hour.**

To encourage frequent drinking of potable water Supervisors must give adequate work breaks and ensure employees are drinking water on regular intervals.

## **IX. ACCESS TO SHADE**

Access to rest and shade or other cooling measures are important preventive steps to minimize the risk of heat related illnesses. 3395 (d) Employees suffering from heat illness or believing a preventative recovery period is needed, shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes. Such access to shade shall be permitted at all times.

Procedures for providing Shade:

- Supervisor will set-up an adequate number of; umbrellas, canopies or other portable devices, at the start of the shift and will relocate them to be closer to the crew, as needed. Equipment should be placed in close proximity (i.e., no more than 50-100 yards) to the work activity.
- Employees have access to office or construction trailer, or other building with air conditioning.
- Every morning there will be short tailgate meetings (in the employees' language) to remind workers about the importance of rest breaks and the location of shade.
- Non-agricultural employers can use other cooling measures if they demonstrate that these methods are as effective as shade.

To ensure access to shade at all time Supervisors shall provide easy ups when ambient temperature exceeds 75 degrees F. To ensure that employees have access to a preventative recovery period Supervisors shall ensure employees take regular breaks in increasing amounts based on temperature.

## **X. HIGH HEAT PROCEDURES**

When the temperature equals or exceeds 95 degree Fahrenheit, the Site Supervisors shall implement the high-heat preventive procedures by:

1. Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when needed. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable.

This preventive measure is particularly important in circumstances where the supervisor is not present at the site and needs to be immediately alerted of a problem, such as when the outdoor temperature has suddenly spiked or the water used for replenishing containers have run out.

2. Observing employees for alertness and signs or symptoms of heat illness.

Recognition of signs or symptoms of heat illness by a supervisor is crucial for assuring that sick workers be provided immediate access to shade and medical treatment. Delay of prompt medical response is likely to occur if employees working individually or in small groups suffer heat syncope, disorientation or loss of consciousness or any other symptoms of heat illness without the supervisor's knowledge.

In instances where employees work in small groups without a supervisor present throughout the shift, the supervisor must designate an employee with sufficient experience and training to look for signs and symptoms of heat illness. Such a designated observer must know what steps to take if heat illness occurs.

3. Reminding employees throughout the shift to drink plenty of water.

During period of high temperatures workers may be more likely to skip drinking water and or take rest breaks because they are in a rush to finish their work, and do not realize this can increase their risk of heat illness.

4. Close supervision of a new employee's for the first 14 days of employment.  
Exceptions to the close supervision requirements are if the employee indicates at the time of hire that he or she has been doing similar outdoor work for at least 10 of the past 30 days for 4 or more hours per day.

It is important to supervising new employees to ensure that necessary preventive measures such as frequent drinking of water and taking cool down breaks are followed.

## **XI. EMERGENCY PROCEDURES**

Written emergency procedures help reduce the risk of heat related illnesses, and ensure that assistance is provided without delay. 3395 (e) (3) The Company's procedures required by subsections (e) (1) (B), (G), (H), and (I) shall be in writing and shall be made available to employees and to representatives of the Division upon request. These include:

- Procedures for complying with the requirements of this standard,
- Procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary,
- Procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider;

- Procedures for ensuring that, in the event of emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.

Procedures for complying with the Heat Illness Standard:

- All employees will be trained prior to working outdoors.
- Working hours will be modified to work during the cooler hours of the day, when possible.
- When a modified or shorter work-shift is not possible, more water and rest breaks will be provided.
- Supervisors will continuously check all employees, and stay alert to the presence of heat related symptoms.
- Supervisors will carry cell phones or other means of communication, to ensure that emergency services can be called, and check that these are functional at the worksite prior to each shift.
- Every morning, workers will be reminded about address and directions to the worksite and emergency procedures.

To reduce the risk of heat-related illness (HI) and respond to possible symptoms of HI Supervisors shall monitor employees for heat related illnesses during hot days. In the event of an emergency Supervisors shall keep emergency medical numbers to the nearest location readily available.

## **XII. TRAINING**

Training is critical to help reduce the risk of heat related illnesses and to assist with obtaining emergency assistance without delay. 3395 (e) (1) Employee training: Training in the following topics shall be provided to all supervisory and non-supervisory employees:

- The environmental and personal risk factors for heat illness;
- The employer's procedures for complying with the requirements of this standard;
- The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties;
- The importance of acclimatization;
- The different types of heat illness and the common signs and symptoms of heat illness;

- The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers;
- The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary;
- The employer's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider;
- The employer's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders. Communication for employees shall be in a form readily understandable by all affected employees.

Supervisor training: Prior to assignment to supervision of employees working in the heat, training on the following topics shall be provided:

- The information required to be provided by section (e) (1) above.
- The procedures the supervisor is to follow to implement the applicable provisions in this section.
- The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

Procedures for complying with the heat illness training provision:

- All employees will receive heat illness prevention training prior to working outdoors. Especially all newly hired employees.
- On hot days, and during a heat wave, supervisors will hold short tailgate meetings to review this important information with all workers.
- All newly hired workers will be assigned a buddy or experienced coworker to ensure that they understood the training and follow the company procedures.
- Supervisors will be trained prior to being assigned to supervise outdoor workers.

## Appendix A - Guidelines for Heat Exposure Limits

Always monitor signs and symptoms of heat-stressed workers. Discontinue any activity for a person when:

- Sustained heart rate greater than 160 beats per minute for those under 35 and 140 for those 35 and over.
- There are complaints of sudden and severe fatigue, nausea, dizziness, lightheadedness, or fainting.
- There are periods of inexplicable irritability, malaise or flu-like symptoms.
- Sweating stops and the skin becomes hot and dry.

Relative Humidity %	Environmental Temperature °F									
	70	75	80	85	90	95	100	105	110	115
0%	64	69	73	78	83	87	91	95	99	103
10%	65	70	75	80	85	90	95	100	105	111
20%	66	72	77	82	87	93	99	105	112	120
30%	67	73	78	84	90	96	104	113	123	135
40%	68	74	79	86	93	101	110	123	137	151
50%	69	75	81	88	96	107	120	135	150	
60%	70	76	82	90	100	114	132	149		
70%	70	77	85	93	106	124	144			
80%	71	78	86	97	113	136	Extreme Danger			
90%	71	79	88	102	122					
100%	72	80	91	108						

Category	Apparent temperature (°F)	Dangers
Extreme danger	Greater than 120	Heat stroke imminent
Danger	105-120	Heat exhaustion likely
Extreme caution	90-105	Heat cramps, exhaustion possible
Caution	80-90	Exercise more fatiguing than normal

**Apparent temperature, Heat Stress Index (HSI):** A measure of how hot it really feels in degrees Fahrenheit when relative humidity is factored with the actual air temperature. This chart has been adapted from the National Weather Service's "heat index" and an adjustment has been made with the apparent temperature categories to match more closely working in full sunshine. This guideline should be followed for employees not wearing protective clothing.

### **HIRING PROCEDURE**

- Review employment applications and check all references.
- Schedule and conduct employment interviews with all perspective employees.
- Give perspective employee the Company Safety Handbook. Perspective employee must study the Code of Safe Practices, Injury and Illness Prevention Program, and Hazardous Communication Section in the Safety Handbook. They will be tested on these programs and must score 75% or higher to be hired.
- Contact perspective employees' to schedule a time for the Pre Employment Training.
- Schedule a pre-employment drug test and physical for perspective employee. After approximately three days, the M.R.O will contact you with the results of the drug test and physical. If drug test is negative and there are no restrictions on physical abilities then proceed with hiring.
- Upon acceptable completion of the Pre-Employment and Hazardous Communication Training, go through New Employee Checklist (Form 4061) at the end of this section. Thoroughly review all documentation upon completion, supervisor and new hire shall initial the checklist. Be sure that the employee understands the company commitment to safety and what is expected.
- Turn the New Employee Checklist, acknowledgements, and testing information into the main office for review and record keeping.
- Notify new employee that they are under a 30-day trial period. Notify the foreman that he is responsible for ensuring that the new employee receives On-The-Job Training.

## NEW EMPLOYEE CHECK LIST

### New or Reassigned Employee Safety, Health and Environmental Orientation

Prospective employee must initial the box(s) as the following Company policies are discussed.

GENERAL	
	Employment application
	I-9 and W-4
	Pre-placement physical
	Pre-employment Drug/Alcohol screen
	Safety Manual issued and explained
	Required attendance and participation in safety meetings explained
	Required reporting to Supervisor of every injury, property loss, unsafe condition and every unsafe practice
	Lockout/Tagout Standard discussed
	Confined Space/Safe Work Permit/Hot Work Standard discussed
	Fire protection equipment and extinguishing agents discussed
	Electrical safety training, as needed
	Respiratory protection training, if applicable
	Facial hair policy
	Enforcement policy ( <i>verbal, written, terminated</i> )
	Employee responsibility for preventing accidents
	Pipeline and plant Emergency Procedures
	Discuss the safety suggestion box
	HAZCOM overview training received, as needed
	Accident Reporting and Investigation Procedures received and discussed
	Review Drug and Alcohol Policy
	Company Vehicle Policy reviewed
	Vehicle safety inspection form reviewed
	Hard hat issued
	Safety glasses issued
	Uniform and steeled toed boot policy reviewed
	Policy for, PPE reviewed ( <i>hard hat, ANSI Z87.1 safety glasses, steel toed boots</i> ).
SAFETY INCENTIVE PROGRAM	
	Company Safety Incentive Program explained.
	Employee agrees to fully cooperate with the safety efforts of the employer and use good judgment, concerning safe behavior.

All of the above has been diligently and completely explained to me. I have read and understand the safety expectations of the Company and understand what is expected of me as an employee.

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

Completed copies of this form must be kept in the safety files for a minimum of three years.

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### **APPENDIX A**

**HOT WORK PERMIT INSTRUCTIONS (Completing the Form)**

**HOT WORK PERMIT**

## HOT WORK PROCEDURE

### I. PURPOSE

This standard establishes proper safety precautions to be taken when work could create a source of ignition in an area that is normally free of ignition sources. It does not apply to designated "Safe Welding and Burning Areas". This written document includes a work authorization system (Hot Work Permit) and the precautions to follow in order to complete work safely.

### II. REFERENCE

Cal OSHA, Title 8 CCR, subsection 4848, *Fire Prevention*  
Fed OSHA, 29 CFR 1910.252-255, *Oxygen-Fuel Gas Welding and Cutting*  
BOEMER, 30 CFR 250.109-114, *Welding and Burning Plans*  
NFPA Standard, 51B, *Fire Prevention During Welding*

### III. APPLICABILITY

This procedure applies to all company and contract personnel, as defined above. The *Hot Work Procedure* does not apply to designated "Safe Welding and Burning Areas".

A Hot Work Permit is also required when a motorized vehicle enters an area classified Class I, Division 1. If it remains stationary to perform work, all applicable provisions of this policy apply. Vehicles may temporarily enter a Class I, Division 2 area providing it has been determined safe by appropriate lower flammable limits (LFL/LEL) tests, and continuous monitoring occurs during the duration of the work.

### IV. DEFINITIONS

**Classified Area:** Electrical classification - Includes all areas of the facility which have been classified by Class I Division 1 or Class I Division 2, by the *National Electric Code*.

**Designated Safe-Welding and Burning Areas:** Some facilities have designated safe-welding and burning location(s). When welding operations are conducted in these approved areas a Hot Work Permit and/or Fire Watch is not required, providing the provisions of the designated area are satisfied.

**Fire Watch:** The qualified person with associated fire protection equipment, and communication equipment assigned to stand by during and at least thirty (30) minutes after welding, cutting or open flame operations.

**Ignition Source:** An open flame, welding, hot tapping, burning, grinding, abrasive blasting, open and energized electrical junctions, or any spark producing device. Electrical hand tools, vehicles and other spark ignited engines are ignition sources.

**Job Supervisor/Permit Initiator:** The person controlling the execution of work, typically the welder or contract supervisor.

**Simultaneous Operations:** Operations at a facility by more than one work group, such as, operations, drilling, production and/or construction. When simultaneous operations occur at one facility, each of the individual Job Site Supervisors must endorse the other Work Permit(s), i.e., sign the "Simultaneous Operations/Co-Signatures" section of the permits. This method ensures all parties are informed of the work activities at hand.

**Site Supervisor:** Person(s) authorized to approve and sign a Hot Work Permit, usually the Lead Operator, Foreman or designee.

## **V. WELDER QUALIFICATION**

Welder standard certification shall be verified by the site supervisor or designated person in charge prior to allowing welding operations. If required certification cannot be produced, the welder must not be allowed to perform any welding operation. Typical welder certification requirements are as follows:

**DOT Pipelines:** Certifications of welders welding on DOT jurisdictional transmission piping or facilities must meet section III of API 1104 specifications, or other specifications defined in DOT Pipeline O&M procedures.

**Pressure Vessels:** Qualification and certification of welders welding on ASME Section I or Section IV boilers, or ASME Section VIII hydrocarbon vessels must meet ASME Boiler and Pressure Vessel Code, Section IX specifications.

**Gas Plants:** Qualification and certification of welders welding on all Gas Plant or Offshore platform process piping (ANSI B31.3 piping) must meet ASME Boiler and Pressure Vessel Code, Section IX specifications.

**Flowlines:** Certifications of welders welding on field liquid transmission piping or flowlines (ANSI B31.4 piping) or field gas transmission piping flowlines (ANSI B31.8 piping) must meet ASME Boiler and Pressure Vessel Code, Section IX, or API 1104 specifications.

**Structural:** Certification of welders welding major structural members must meet AWS D1.1 specifications (Examples include: Deck beams, deck extensions, boat landing and structural supports).

**Other Welding:** Any burning or welding on anything other than main structural or process equipment shall be performed by personnel acceptable to the Site Supervisor. Welders shall be fully aware of all safety regulations. "Other Welding" should be limited

to minor structural welding (Examples include: handrails, grating, pipe supports, fire tubes, etc.).

## **VI. RESPONSIBILITIES**

### Job Supervisor/Permit Initiator must:

- ◆ Initiate the "Hot Work Permit" by following the permit instructions attached to the booklet.
- ◆ Review and sign simultaneous work permits, i.e. (Safe Work, Hot Work, Confined Space), when applicable.
- ◆ Review the "Hot Work Permit" conditions and sign the permit, acknowledging that conditions are understood.
- ◆ Contact the Site Supervisor to inspect and authorize the work.
- ◆ Conduct pre-job safety meeting to review job scope, Hot Work Permit conditions and applicable simultaneous operations.

### Site Supervisor Must:

- ◆ Ensure all elements of the Hot Work Permit Procedure are followed.
- ◆ Inspect Welder Qualification/Certification(s) in accordance with the definition of "Qualified Welder" above.
- ◆ Conduct a site inspection (refer to Site Inspection checklist on the Hot Work Permit).
- ◆ Ensure the atmospheric tests for safe Oxygen content, flammables, and toxics (O<sub>2</sub>, LFL/LEL, and H<sub>2</sub>S) are performed.
- ◆ Ensure permit initiator has signed applicable simultaneous operational permits.
- ◆ Review, sign and approve the Hot Work Permit.

### Designated Fire Watch Must:

- ◆ Ensure adequate fire extinguisher and /or charged fire hose is at the site during the hot work. Two fire protection devices must be available for hot work operations in Class I, Division 1 and Class I, Division 2) areas.
- ◆ Alert personnel entering the permitted area of hazards, i.e., flashes, grinding, cutting, overhead hazards, etc.
- ◆ Stop the hot work if sparks, flame or heat project outside the permitted area.
- ◆ Activate the fire alarm and/or emergency shut down (ESD) and then attempt to extinguish any incipient stage fires.
- ◆ Continuously monitor the area during and thirty (30) minutes after the hot work (welding, cutting or open flame operations) is completed.

**A FIRE WATCH MAY HAVE NO OTHER DUTIES!**

## VII. GENERAL REQUIREMENTS

1. Training shall be required in the use of fire extinguishing equipment for employees assigned to fire watch. Assigned fire watchers must be trained in the use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire.
2. Welders and their supervisors must be suitably trained in the safe operations of their equipment and the safe use of the process.
3. If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed. A thirty-five (35) foot clearance must be maintained from all flammable/combustible hazards without guards in place.
4. If all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks and slag and to protect the immovable fire hazards. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shields, fire blankets, etc. shall be used to confine the heat, sparks and slag and to protect the immovable fire hazards.
5. If welding cannot be conducted safely the welding and cutting shall not be performed. If fire hazards cannot be taken to a safe place or guards cannot be used to confine heat, sparks, slag and protect the immovable fire hazards, the welding and cutting shall not be performed.
6. A fire watch is required when welding, cutting, brazing and/or soldering is performed near combustible materials and/or in locations where fire may develop.
7. Fire watch personnel shall have at least one fire extinguisher readily available. A backup means of fire protection, i.e. additional fire extinguisher, fire hose, buffalo, or water truck), should also be available.
8. A fire watch shall be maintained at least a half an hour after the welding or cutting operation was completed.
9. A hot work permit must be completed before performing hot work. Precautions that are to be taken shall be in the form of a written permit. Before cutting or welding is permitted the area shall be inspected and the written permit shall be used to authorize welding and cutting operations.
10. Respiratory protection equipment shall be utilized when evolution of hazardous fumes, gases, or dust is possible. Any welding, cutting or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints not listed here shall have proper ventilation or respiratory protection.
11. Equipment operators must report equipment defects and discontinue use until it has been repaired or replaced. Operators of equipment should report any equipment defect or safety hazards and discontinue use of equipment until its safety has been assured. Repairs shall be made only by qualified personnel.
12. If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed. A thirty-five (35) foot clearance must be maintained from all flammable/combustible hazards without guards in place.

13. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shields, fire blankets, etc. shall be used to confine the heat, sparks and slag and to protect the immovable fire hazards.
14. If fire hazards cannot be taken to a safe place or guards cannot be used to confine heat, sparks, slag and protect the immovable fire hazards, the welding and cutting shall not be performed.
15. A fire watch is required when welding, cutting, brazing and/or soldering is performed near combustible materials and/or in locations where fire may develop. The only time a fire watch will not be required is when hot work is in a designated safe welding and burning area.
16. Fire watch personnel shall have at least one fire extinguisher readily available. A backup means of fire protection, i.e. additional fire extinguisher, fire hose, buffalo, or water truck), should also be available.
17. A fire watch shall remain on duty at least thirty (30) minutes after the welding or cutting operation has been completed.
18. Any welding, cutting or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints not listed here shall have proper ventilation or respiratory protection.
19. Operators of equipment should report any equipment defect or safety hazards and discontinue use of equipment until its safety has been assured. Repairs shall be made only by qualified personnel.
20. Atmospheric tests for safe oxygen content, flammables, and toxics (O<sub>2</sub>, LFL/LEL, and H<sub>2</sub>S) must be performed prior to issuing hot work permit.
21. Drains / vents within thirty-five (35) feet (minimum) radius must be sealed and adjacent areas inspected.
22. Hydrocarbon/flammable sources within thirty-five (35) feet of work area must be relocated, rendered inert, or protected with flameproof covers/shields.
23. If Hot Work is conducted within ten (10) feet of a well bay, variance is issued and producing wells are shut in at the surface safety valve.
24. Verify that there are no combustible materials on the backside of bulkhead or fire watch must be posted on each side.
25. Oil and other combustibles have been cleared from equipment to be welded.
26. Applicable safety systems are bypassed, flagged, logged and monitored.

If the general requirements stated above to weld safely cannot be satisfied welding cannot be conducted.

## **VIII. WELDING EQUIPMENT**

Welding equipment must be maintained in a safe and workman like manner. Equipment must be visually inspected prior to each use.

The following welding equipment standards must be verified in place by the site supervisor or designated person in charge prior to hot work activities:

- Spark arrestors and drip pans on portable welding machines,
- Welding leads insulated and in good condition,
- Hoses free of leaks and equipped with proper fittings, gauges, and regulators,
- Oxygen and fuel gas bottles secured.
- Caps must be secured on cylinders and gauges removed prior to storage and/or transport.
- Oxygen and fuel in storage separated by 20' or 5' high non combustible barrier.

## **IX. PERFORMING THE HOT WORK**

After the Hot Work Permit is approved and the hot work has begun, operating personnel will make periodic checks with an approved gas detector. If combustible gases are found greater than 10% of the Lower Flammable Limit (LFL/LEL), the job will be shut down and the area re-permitted.

Operations personnel must verify that designated Fire Watch personnel are continuously monitoring the area during the job and for a minimum of thirty (30) minutes after the hot work.

## **X. COMPLETION OF THE HOT WORK**

- Immediately after the work is completed, the work area and adjacent areas will be inspected to ensure there has been no spread of sparks or heat.
- The fire watch will remain at the work site for a minimum period of thirty (30) minutes after hot work has ceased, to ensure that the area is secure.
- The person(s) doing the work will return their copy of the permit to the Site Supervisor after the job is complete and the area is secure.
- Upon completion of job, the site supervisor and/or designee must close out the permit by reviewing/initialing within the acknowledgement box.

## **XI. WELDING IN A CONFINED SPACE**

Welding in a confined space is extremely dangerous. Provisions must be taken to obtain a confined space permit in addition to the hot work permit. At a minimum ensure adequate ventilation is in place, cylinders bottles are secure, lifelines are used, electrodes are removed, gas cylinders are shutoff and warning signs are posted. Refer to the company confined space entry procedure.

## **XII. TRAINING**

**Fire Watch:** The training for a Fire Watch should include: 1) hands-on fire extinguisher training, 2) demonstration of their ability to properly use gas detection equipment, 3) demonstration of their ability to use a fire hose reel, and 4) demonstration of applicable fire prevention procedures.

Additionally, assigned fire watch personnel must be trained in the use of fire extinguishing equipment and be familiar with the facilities for sounding an alarm in the event of a fire.

**Welders/Cutters:** Cutters, welders must be suitably trained in the safe operations of their equipment and the safe use of the process.

**Site Supervisor:** The Site Supervisor must attend general fire protection training and be familiar with the applicable provisions of this procedure.

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## **APPENDIX A**

### **HOT WORK PERMIT INSTRUCTIONS (Completing the Form)**

#### **SECTION I WORK**

This section of the permit is to be completed by the Permit Initiator and/or Site Supervisor. The effective and expiration date/time must be listed. A permit is not valid beyond the duration of the job scope, or beyond a shift change, whichever is less. All designated Fire Watch(s) must be listed and a complete description of the proposed task and work location must be identified.

#### **SECTION II EMERGENCY SERVICE/VAPOR TEST**

The emergency service section is to be completed by the Site Supervisor, and discussed with all affected parties prior to commencement of work. Appropriate emergency service providers must be identified and means of contacting them in the event of an incident. This section will typically have the name and telephone number of the nearest fire department, hospital and/or ambulance service.

The vapor test portion of this section is to be completed and initialed by a Company employee, or contract personnel who are qualified by training to perform the required tests. Tests shall be repeated at sufficient intervals of time to ensure that conditions do not change during the work activities. Sufficient time intervals range from continuous monitoring to every four hours depending on hazard potential.

#### **SECTION III SITE INSPECTION**

This section is to be completed by the Site Supervisor and person performing the Hot Work, usually the welder. The Supervisor's initials indicate that an inspection has been made and that applicable precautions have been taken and will remain in effect until the work listed is completed or until the permit expires.

#### **SECTION IV PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Appropriate Personal Protective Equipment (PPE) to be used shall be specified in this section. The Site Supervisor must review this section prior to authorizing the work permit.

## SECTION V SIGNATURES

This section requires signatures described below:

1. Permit Initiator/Job Supervisor -The person to whom the permit is issued shall acknowledge that they understand and will comply with all conditions, precautions and restrictions of the permit by signing their signature to the permit.
2. Fire Watch - All designated Fire Watch personnel must sign, acknowledging precautions will be followed.
3. Simultaneous Operation/Co-Signature - If a simultaneous operation is in effect at one facility, each of the individual Job Supervisors must also sign the co-authorized section. The co-authorized signature ensures all appropriate parties are informed of additional work activities.
4. Site Supervisor - The person responsible for the job site/ location shall authorize the work by signing their signature only after:
  - ◆ Ensuring all elements of the Hot Work Procedure are followed.
  - ◆ Inspecting Welder Qualification/Certification(s) in accordance with the definition of "Qualified Welder".
  - ◆ Conducting a site inspection (refer to Site Inspection checklist on the Hot Work Permit).
  - ◆ Ensuring the atmospheric tests for safe oxygen content, flammables, and toxics (O<sub>2</sub>, LFL/LEL, and H<sub>2</sub>S) are performed.
  - ◆ Ensuring permit initiator has signed applicable simultaneous work permits, i.e. (Safe Work, Hot Work, Confined Space).
  - ◆ Ensuring that the person to whom the permit is issued fully understands the conditions, restrictions, and precautions of the permit.

### DISTRIBUTION OF PERMIT

- COPY 1** Post with Site Supervisor until work is completed, usually in the control room or office.
- COPY 2** Keep on file for a minimum of 5 years.
- COPY 3** Post at the Job Site.

## HOT WORK PERMIT

<b>SECTION I</b>	<b>WORK</b>	Effective _____ Time _____ AM/PM Expires _____ Time _____ AM/PM <b>(PERMIT VALID FOR DURATION OF JOB, OR UNTIL SHIFT CHANGE, WHICHEVER IS LESS)</b>			
		Permit Issued To: _____ Name _____		Designated Firewatch(s): Company _____	
		Description of Work_Specific _____	Location _____		
		No. of Workers _____			

<b>SECTION II</b>	<b>EMERGENCY/ VAPOR TEST</b>	<b>EMERGENCY SERVICE</b>		<b>ATMOSPHERIC TESTING RECORD</b>					
		Name of Service _____	Phone _____	Method of Contact _____	Time _____	Acceptable Range			
			Oxygen	19.5% - 23.5%					
			Flammables	0 - 10% LFL / LEL					
			H <sub>2</sub> S	0-10 PPM					
			Toxics	0 - PEL					
				Monitor Type:	Calibration Date: _____				
				Tester's Initials _____					

<b>SECTION III</b>	<b>SITE INSPECTION</b>			Initials				Initials	
		<b>INSPECTION ITEMS</b>		Verified	N/A	<b>INSPECTION ITEMS</b>		Verified	N/A
		Designated fire watch has adequate fire extinguisher and /or charged fire hose at the site during the hot work.				Welding equipment and leads in good condition and are not creating a trip hazard.			
		Atmospheric tests for safe oxygen content, flammables, and toxics (O <sub>2</sub> , LFL / LEL, and H <sub>2</sub> S) are performed.				There are no combustible materials on the backside of bulkhead and fire watch is posted on each side.			
		Drains / vents within a <b>35 feet</b> (minimum) radius are sealed and adjacent areas inspected.				Oil and other combustibles have been cleared from equipment to be welded.			
		Hydrocarbon / Flammable sources located within <b>35 feet</b> of work site relocated, rendered inert, or protected with flameproof covers/shields.				Engine-driven welding machines are equipped with spark arrestors, emergency shutdowns (ESD) and drip pans.			
		If Hot Work is conducted within <b>10 feet</b> of a well bay, variance is issued and producing wells are shut in at the surface safety valve.				Special approval / procedures are required for hot taps. Refer to Hot Tap Procedure for additional guidance.			
		Oxygen and acetylene bottles secured in a safe place.				Applicable safety systems are bypassed, flagged, logged and monitored.			
		Welding curtains, spark boards and shields are in place.				Job Site Safety Analysis (JSA) and/or Pre-job safety meeting completed.			
		Other conditions _____							

<b>SECTION IV</b>	<b>PPE</b>	<input type="checkbox"/> Hard Hat <input type="checkbox"/> Face Shield <input type="checkbox"/> Rescue Retrieval Winch <input type="checkbox"/> Safety Glasses <input type="checkbox"/> Safety Goggles                  (Required for entries over 5' deep) <input type="checkbox"/> Steel Toed Boots <input type="checkbox"/> Protective Clothing <input type="checkbox"/> SCBA <input type="checkbox"/> Gloves (cotton, leather, chemical) <input type="checkbox"/> Rubber Boots <input type="checkbox"/> Cartridge Respirator <input type="checkbox"/> Safety Harness/Retrieval Line <input type="checkbox"/> Welder Helper Glasses <input type="checkbox"/> Dust Mask <input type="checkbox"/> Anti-Fall Device <input type="checkbox"/> Other _____		
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<b>SECTION V</b>	<b>SIGNATURES</b>	We have received instructions on safety procedures and hazards of this job and the permit is complete.	
		Permit Initiator / Job Supervisor: _____	
		Fire Watch(s) : _____ <b>(Must monitor area for 30 minutes after completion of hot work.)</b>	
		Simultaneous Operations / Co-Signatures: _____	
		Site Supervisor / Designee: _____	

Permit Closed Out by: \_\_\_\_\_

## POST AT JOB SITE

Permit Closed Out by:

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### APPENDIX A

SAMPLE – TAGOUT DEVICE

### APPENDIX B

PERIODIC (Lockout/Tagout) INSPECTION FORM

## **I. PURPOSE**

This policy establishes procedures for the safety of personnel working on equipment that must be locked out to prevent the unexpected energization, start-up or release of stored energy. They shall be followed by all employees whose duties require them to service, repair, adjust, lubricate, or perform work activities in which the unexpected energization, start-up or release of stored energy could cause injury. Hazardous energy includes, but is not limited to, electrical, hydraulic, pneumatic, mechanical, chemical, thermal, stored and momentum/gravity. These forms of energy must be eliminated, isolated or controlled prior to servicing, repairing or maintaining equipment and machines.

## **II. SCOPE**

These procedures are generic to provide direction to all operations. However, the OSHA regulation requires specific procedures for different types of machines and equipment. Therefore, each operating entity shall develop written procedures for the different types of equipment in their operation. Similar machines and/or equipment (those using the same type and magnitude energy), which have the same or similar types of controls, can be covered with a single procedure.

This procedure does not apply to cord and plug connected electrical equipment if the equipment is unplugged and the plug is in the exclusive control of the employee who is performing the servicing or maintenance of that equipment. The cord and plug is considered to be within the employee's control if it is in sight or is otherwise under their physical control. If the cord and plug is not within the employee's sight or physical control, a lockout device shall be attached to the plug in such a way that it shall not permit the plug to be inserted into the outlet.

## **III. REFERENCES**

Title 8 CCR 3203 Injury and Illness Prevention Program;  
Title 8 CCR 3314 Cleaning, repairing, servicing and adjusting of prime movers;  
29 CFR 1910.147 Control of hazardous energy (lockout/tagout)

## **IV. RESPONSIBILITIES**

### **Safety Representative**

- The Safety Representative will administer the Lockout/Tagout Program.
- Conduct or contract for employee training and notification.
- Ensure that an audit of the Lockout/Tagout program is conducted at least annually. Those conducting the audit may Company employees but they may not audit their own systems.

**Site Supervisors/Foremen** shall be responsible for ensuring the following:

- Verifying the use of energy control procedures where the procedures are required.
- Assuring the availability of lock out devices.
- Assuring new process equipment is designed to accept a lock out device.

**Employees / Contractors** are responsible for ensuring the following:

- Using energy control devices and following the Energy Control Procedures.
- Verifying that process equipment is disengaged or de-energized before working on the equipment.
- Helping develop Energy Control Procedures for equipment that currently does not have procedures.
- Safely returning equipment to service.

## **V. DEFINITIONS**

**Affected Employee** – An employee who operates equipment or machines on which service or maintenance is being performed under lockout/tagout procedures, or whose job requires him to work in an area in which such servicing or maintenance is being performed.

**Authorized Employee** – An employee who is authorized to initiate the lockout/tagout procedure on machines or equipment to perform servicing or maintenance, provided they have received the proper training.

**Blockout** – A blockout may be necessary when potential energy does not have a means for lock and/or tag placement. Examples of this are when safety blocks, or stands, are placed under raised equipment so that parts that may fall are braced. Another example is when blinds are placed in piping systems so that substances cannot pass through. Blocks and blinds do not de-energize equipment. Use them only after the machinery has been isolated from its main energy sources.

**Energized** – Connected to an energy source or containing stored or residual energy.

**Energy Isolating Device** – A mechanical device that physically prevents the transmission or release of energy including, but not limited to, the following: manually operated electrical circuit breaker, disconnect switch, slip blind, blind flange, line valve, a block or similar device, etc. This does not include a push button or selector type switch.

**Energy Source** – Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, pressurized piping, compressed air or other energy which, if unexpectedly released, could cause injury to employees.

**Lockout** – The placement of a lockout device or energy isolating device, in accordance with an established procedure, to ensure that the energy isolating device and equipment being controlled cannot be operated until the lockout device is removed.

**Lockout Device** – A device that uses a positive means such as a keyed lock or combination lock to hold any energy isolating device in a safe position and prevent the energizing of a machine or equipment. Examples include lockout hasps, valve lockouts, chain with a lock and circuit breaker lockout.

**Shall** – Mandatory, must be done.

**Should** – Advisory, may be done.

**Standard Operating Procedure (SOP)** – A set of instructions written in such detail that the desired operation can be performed repeatedly with a consistently desirable end result.

**Tagout** – The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

**Tagout Device** – A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and equipment being controlled may not be operated until the tagout device is removed. See Appendix A.

## **VI. ENERGY CONTROL PROCEDURES**

Failing to identify and control the energy of machinery and process equipment before working on it is a major cause of serious injury and death. An employee not performing a crucial step or a coworker re-activating machinery or process equipment usually causes the uncontrolled release of energy. Each operating entity shall develop equipment specific energy control procedures on all process equipment, process vessels, machines or operating systems that require servicing, repair or frequent maintenance.

Equipment may be grouped by type, i.e. one procedure for two Worthington reciprocating type gas compressors, but two separate procedures for a Worthington reciprocating and a Sullair screw type compressor. Equipment specific energy control procedures shall ensure that:

1. The type and magnitude of energy sources are identified and controllable.
2. The location of control points and method of control are identified.
3. There is a standard operating procedure (SOP) to shut down, de-energize, verify zero energy potential, and start up of each piece of equipment.
4. There are adequate lockout devices available to control all energy sources.
5. There is a method of communicating to coworkers the status of de-energized process equipment, i.e. tags, permits, etc.

## **VII. ENERGY CONTROL METHODS**

Only authorized employees shall implement these energy isolation and control procedures. Affected employees in the work area shall be notified by the site supervisor or the authorized employee of the type and duration of the work to be performed and of the application and/or removal of lockout and/or tagout devices. Notification shall be given before the controls are applied and after they are removed from the machine or equipment

Locks and tags shall be used to control hazardous energy/substance sources.

Chains used with a lock shall be considered a lockout device for equipment in which the chain is used to prevent movement, for instance in the case of a wheel type handle on a valve.

Tagout shall be used on those hazardous energy/substance isolating devices that are not capable of being locked out.

### **A. Blinding**

Process fluids and gases in most cases require line blinding or double block and bleed to provide proper energy isolation.

- Blinds shall be tagged to identify for later removal.
- A blinding list should be used.
- Blinds should be coded (by a certified vendor) or constructed using Table 1 to determine the minimum thickness required when using steel plate with yield strength of ASTM A-36 or equivalent. A facility/mechanical engineer shall approve any variance in the thickness or material of the blind.
- When isolating process piping, care shall be taken to verify pressure is not trapped in the isolated section.

TABLE 1: Minimum Plate Thickness for ASTM A-36 Material

ANSI Nominal Pipe Size (NPS)

Class	2 inches	3 inches	4 inches	6 inches	8 inches	10 inches	12 inches
150	1/4"	1/4"	3/8"	1/2"	5/8"	3/4"	3/4"
300	3/8"	3/8"	1/2"	3/4"	7/8"	1 1/8"	1 1/4"
600	3/8"	5/8"	5/8"	7/8"	1 1/8"	1 3/8"	1 5/8"

Source: ASME B31.3, section 304.5.3

## B. Blocking

A double block and bleed may also be used to isolate energy. All valves shall be **locked and tagged**. A simple block valve may be locked and tagged closed for a low risk maintenance operation. Examples would include site glass removal, removing/replacing instruments, and changing out relief valves and rupture disks.

Double block and bleed should **NOT** be used for high-risk isolation activities. Examples include a valve with a history of serious leakage, isolation using a butterfly valve and confined space entry operations.

Blocking may also include methods to isolate equipment with stored energy such as spring loaded mechanisms or elevated devices subject to the force of gravity such as a raised bucket on a backhoe or the horse's head on a pumping unit. Examples of energy isolation would include using slings, blocks, cribbing, clamps or chocks to prevent movement.

## C. Electrical Disconnect

The electrical disconnect switch or circuit breaker may be used to isolate electrical energy to a machine or piece of equipment only after that machine or equipment has been shutdown with its normal operating controls such as a stop button. The nearest operating control device should be used in performing the shutdown. An orderly shutdown must be used to avoid any additional or increased hazards to employees.

If the equipment does not have a disconnect switch and the only way to isolate it after it has been turned off is to remove a fuse, **only a qualified electrician shall remove the fuse**. When the equipment is to be re-energized, only a qualified electrician shall replace the fuse.

## **VIII. GENERAL REQUIREMENTS**

1. This program addresses potential energy from any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy. Other energy may include potential exposure to steam, tension, gravity, ect..
2. Lockout Tagout devices shall indicate the identity (name) of the employee applying the device.
3. Periodic inspections of the company Lockout/Tagout procedures are required to be conducted and documented at least annually to ensure procedures & requirements are being followed.

The Lockout/Tagout inspection shall be performed by someone other than those actually using the procedure. A certified review of the inspection including date, equipment, employees & the inspector should be documented on the form shown in Appendix B.

4. Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the methods or means to control the energy.
5. The machine or equipment shall be turned off or shutdown using the procedures established for the machine or equipment. Refer to equipment shut down procedures (if available). An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.
6. All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source.
7. Stored energy and the possibility of re-accumulation:
  - 1) Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained and otherwise rendered safe.
  - 2) If there is a possibility of re-accumulation of stored energy level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

8. Prior to starting work on machines or equipment that have been locked or tagged out; the authorized employee shall verify that isolation and deenergization of the machine or equipment have been accomplished.
9. This program addresses specific procedures for handling multiple groups of workers involved in a lockout. The procedure must afford the group of employees a level of protection equal to that provided by a personal lockout or tagout device. Refer to "Procedure Involving More Than One Person - GROUP LOCKOUT" within this document.
10. The authorized employee should ascertain the exposure status of individual group members. Each employee shall attach a personal lockout or tagout device to the group's device while he/she is working and then remove it when finished. During shift change or personnel changes, there should be specific procedures to ensure the continuity of lockout or tagout procedures. Refer to "Procedure Involving More Than One Person - GROUP LOCKOUT" within this document.
11. The training must include recognition of hazardous energy source, type and magnitude of energy available, methods and means necessary for energy isolation and control. Each authorized employee shall receive adequate training. The training must address that all affected employees are instructed in the purpose and use of the energy control procedure.

The training provision of this plan (Section XV) is for any employee whose work operations are in an area where energy control procedures may be utilized. Employee training addresses when tagout systems are used including the limitations of a tag (tags are warning devices and do not provide physical restraint). The training must also address that a tag is not to be removed without authorization. A Lockout/Tagout tag is never to be ignored or defeated in any way.

12. Retraining is required when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced.
13. All training and/or retraining must be documented, signed & certified. Refer to the "TRAINING" (Section XV) part of this plan for more detail.

## **IX. IMPLEMENTATION (OSHA's 6-Steps)**

Although each machine or piece of equipment will have a specific lockout tagout procedure, the following steps shall be followed in the sequence listed.

### **Step 1 - Prepare for Isolation/Control**

The authorized employee shall make an evaluation of the affected equipment, prior to starting work, in order to identify the potential hazardous energy sources, their hazards, and all isolating devices (electrical disconnects, valves, blinds, etc.) and to determine the method(s) of control. The machine or equipment specific lockout/tagout procedure shall be used as a reference in the evaluation.

The authorized employee shall notify all affected employees of the pending work.

### **Step 2 - Shut Down the Machine or Equipment**

The machine or equipment/system shall be shut down by using its normal operating controls (stop button, open switch, close valve, set brake, etc.). The nearest operating control device to the machine should be used to perform the shutdown.

### **Step 3 - Isolate the Machine/Equipment/System**

Isolate the machine/equipment/system by using hazardous energy isolating devices such as closing valves, opening the appropriate disconnect switch or circuit breaker, installing a blind or performing double block and bleed.

### **Step 4 - Apply Lockout and Tagout Devices**

Lockout (individual locks or group locks with clasp-type devices) and tagout devices, whichever applies, shall be attached to **each** hazardous energy isolating device by the authorized employee. Lockout devices shall be attached in a manner that will secure the hazardous energy/substance isolating devices in a "safe" or "off" position.

Tags with a "**Danger**" legend shall be attached to the shackle of the lock. The tag must include the name of the authorized employee applying the device.

In cases where lockout cannot be accomplished due to equipment design, tagout shall be used to isolate the equipment. The tagout procedure in this policy shall be followed.

#### **Step 5 - Control/Relieve the Stored Energy**

Following the application of the lockout or tagout devices, all potential hazardous stored or residual energy (such as that in capacitors, springs, elevated machine parts, rotating flywheels or motor sheaves, hydraulic systems and air, gas, steam or water pressure, etc.) shall be relieved, disconnected, restrained, blocked, bled down or otherwise rendered safe.

If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed or until the possibility of such accumulation no longer exists. The frequency of the verification should be based on knowledge of the hazard and should be established before the operation begins.

#### **Step 6 - Verify Equipment Isolation**

After determining that employees are not exposed, the authorized employee shall confirm that the hazardous energy source has been disconnected or isolated. This **must** be done prior to starting the work by attempting to energize or activate the machine/equipment/system by pushing the start button or other normal operating controls to make certain the equipment will not operate.

**Return the operating controls to the "neutral" or "off" position after completing the test.**

### **X. PERFORMING THE WORK**

The equipment is now locked and/or tagged out and ready for work to proceed. Lockout and tagout devices must remain in place until the work is completed. In situations in which lockout/tagout must be temporarily removed from the hazardous energy/isolating device to test or adjust the machine/equipment, the following procedure shall be followed:

- 1) The machine/equipment shall be cleared of tools and equipment.
- 2) Employees shall be cleared from the area
- 3) The lockout device shall be removed by the authorized employee

- 4) The machine/equipment shall be energized
- 5) The work or adjustment shall be performed
- 6) In returning to the lockout/tagout condition, the energy control measures outlined in Section IX shall be followed in sequence.

## **XI. RESTORING EQUIPMENT TO NORMAL OPERATIONS (Removing Devices)**

After the servicing or repair work is completed and the equipment is ready for normal operation, the authorized employee shall confirm that all work is completed and the equipment is returned to operating condition and ready for startup.

The authorized employee shall then check the area around the machine/equipment to ensure that all tools and equipment have been removed and that employees have been safely positioned or cleared from the area.

The lockout/tagout devices shall then be removed by the same authorized employee who installed the device except as provided below within this policy.

The affected employees shall be notified that the lockout/tagout devices have been removed.

The hazardous energy isolating devices and/or valves will be operated to restore energy/pressure to the equipment in accordance with normal start-up procedures.

### **Removal of Lockout/Tagout Devices by Someone Other Than the Authorized Employee**

Under normal circumstances, only the authorized employee who installed it shall remove a lockout/tagout device. Only the site supervisor/foreman is authorized to remove another employee's lock after they accept full responsibility. Where removal by someone else is necessary, the steps listed below shall be followed.

- 1) The removal of a lockout/tagout device shall be done only under the direction of the supervisor/foreman in charge of the job, after they have confirmed that it is safe to remove it.
- 2) The supervisor/foreman shall verify in advance that the authorized employee who applied the lockout device is not at the facility.

- 3) All reasonable efforts shall be made to contact the authorized employee to inform them that the lockout device is being removed.
- 4) The supervisor/foreman shall ensure that the authorized employee has been informed of the removal of the lockout device before they resume work at the facility.

## **XII. PROCEDURE INVOLVING MORE THAN ONE PERSON (Group Lockout)**

When servicing or maintenance work is performed by more than one authorized employee, one of the following procedures shall be followed as applicable.

**Group Lockout** – A group lockout device shall be used on each piece of equipment locked out. Authorized employees shall provide for their own protection by attaching a tagged lock to the group lockout device.

Individual authorized employees shall remove their own lock(s) when they (or their crew) stop working at the facility or depart from the job, i.e., at the end of the shift or conclusion of the work assignment.

**Job Locks and/or Tags** – Job locks or tags may be used by the supervisor/foreman of the authorized employees to assure continuity of hazardous energy/substance isolation from shift to shift as applicable.

To achieve job lockout, the supervisor/foreman shall place a lock on the equipment and leave it on the lockout device for the duration of the job. The supervisor/foreman or their relief shall maintain possession of the key. Each authorized employee shall place their lock on the lockout device upon coming on the job requiring lockout or tagout and remove their lock or tag whenever they depart the job, i.e., at the end of the shift or conclusion of the work assignment.

## **XIII. SHIFT CHANGES**

When an off-going authorized employee transfers servicing duties to an on-coming employee (relieving in the presence of each other on the job during the shift change), the on-coming employee shall install their lock as soon as the off-going employee removes their lock.

When an off-going authorized employee transfers servicing duties (during a shift change) to an on-coming employee by removing their lock before the on-coming employee arrives, the employees shall observe the following procedures:

- The off-going employee shall apply a temporary tagout device at the time they remove their lock.

- The temporary tagout device shall indicate that the off-going employee's lock has been removed but the machine or equipment had not been re-energized, re-pressured, etc.
- The on-coming employee shall verify that the system is still at a zero energy state and shall remove the temporary tagout device and substitute their lockout/tagout device.

When temporary tagout devices are used in place of lockout devices, the off-going authorized employee transfers their servicing duties to the on-coming employee by signing off in the appropriate space on the tag.

The tag shall have spaces for the off-going employee to sign, date and indicate the time and for the on-coming employee to sign, date and indicate the time (see Appendix A). Each employee will verify the energy isolation of the machine or equipment for their own protection before signing onto the tag.

#### **XIV. TAGOUT PROCEDURES (When Lockout is not feasible)**

Tagout procedures shall be used only when a hazardous energy isolating device is not capable of being locked out. If it becomes necessary to use a tagout, the following procedures shall be followed in addition to the ones described for lockout.

- All of the procedures relating to the application and removal of lockout devices are also applicable to tagout devices.
- Additional measures shall be considered to make the protection afforded by the tagout procedure equivalent to that provided by the lockout procedure. These include, but are not limited to, removal of a valve handle, the blocking of a controlling switch, or the opening of an extra disconnecting device.
- Tagout devices shall be attached in a manner that will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.
- Where the equipment is not designed with the capability of being locked, a tagout device must be attached at the same point at which the lock would have been attached.
- The tag itself must: have a standard format; be able to withstand wear and the environment to which it is exposed; be secured so that it

cannot be accidentally detached; and identify the person who applied it and the date it was applied (see Appendix A).

- The tag attachment mechanism must: be attachable by hand; be self-locking; and be non-releasable with a minimum unlocking strength of no less than 50 pounds.
- Tags shall not be removed without authorization of the authorized person responsible for it.
- When tagout only is used, employees shall be trained in the limitations of tags and in the tagout procedures.

## **XV. TRAINING**

All employees involved in lockout/tagout operations shall be trained in the purpose, use and function of the lockout/tagout procedures. Each new or transferred employee shall be similarly trained before beginning work involving lockout/tagout.

Each authorized employee shall be trained in the requirement of the applicable OSHA standard, recognition of hazardous energy sources, the type and magnitude of the energy present in the workplace, and in the methods and means necessary for energy isolation and control.

Each affected employee shall be trained in the purpose and use of the energy control procedure.

Lockout/Tagout training shall be given to all new employees and refreshed annually. Additionally, retraining is required when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced. All training and/or retraining must be documented, signed & certified.

Training must include recognition of hazardous energy source, type & magnitude of energy available, methods & means necessary for energy isolation & control. Each authorized employee shall receive adequate training. The training should address that all affected employees are instructed in the purpose and use of the energy control procedure.

All other employees whose work operations are or may be in an area where energy control procedures may be used, shall be instructed about the procedures and about the prohibition of attempting to restart or re-energize machines or equipment that is locked and/or tagged out.

Employee training shall also address when tagout systems are used including the limitations of a tag (tags are warning devices & do not provide physical restraint). The training shall also include that a tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way.

Retraining is required when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced. All training and/or retraining must be documented, signed & certified.

DRAFT

Appendix A: Sample Tagout Device

<b>DANGER</b>		
<b>DO NOT OPERATE</b>		
<b>This Tag &amp; Lock To Be Removed Only By Person(s) Shown Below</b>		
<hr/>		
Name	Date	Time
<hr/>		
Name	Date	Time
<hr/>		

Appendix B: Periodic Inspection Form

**LOCKOUT/TAGOUT PROCEDURE INSPECTION**

Machine or Equipment Reviewed: \_\_\_\_\_ Location: \_\_\_\_\_

<b>Employees Included in the Inspection</b>		
<b>Last Name</b>	<b>First Name</b>	<b>MI</b>

Was the Lockout/Tagout Procedure performed correctly?

☐ YES

☐ NO

Do all employees understand their responsibilities in the procedure?

☐ YES

☐ NO

If tags were used, do the employees understand their limitations?

☐ YES

☐ NO

<b>Employees Requiring Additional Training</b>		
<b>Last Name</b>	<b>First Name</b>	<b>MI</b>

Comments \_\_\_\_\_

\_\_\_\_\_  
Signature of Inspector/Supervisor

\_\_\_\_\_  
Date

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### APPENDIX A

SAFE WORK PERMIT INSTRUCTIONS (Completing the Form)

SAFE WORK PERMITS

## **SAFE WORK PROCEDURE**

### **I. PURPOSE**

The purpose of the Safe Work Permit Standard is to establish a systematic method for ensuring safe working conditions and procedures are followed during Simultaneous Operations and Non-Routine Work.

### **II. SCOPE**

This standard will define: the type of work requiring a Safe Work Permit, the qualifications of personnel allowed to authorize and sign the Permit, and instructions on how to properly complete the form.

### **III. APPLICABILITY**

This procedure applies to all company and contract personnel. It does not apply to Hot Work and /or Confined Space Entry. Refer to the SAFETY STANDARDS 4.02 and 4.03 for specific instructions on Hot Work and Confined Space Entry.

A Safe Work Permit is required for any Simultaneous Operation and/or Non-Routine Work.

### **IV. DEFINITIONS**

**Job Supervisor/Permit Initiator:** The person controlling the execution of work. Typically this is a company supervisor, contract supervisor, or lead maintenance person.

**Non-Routine Work:** Defined as any work with an unusual nature, with inherent danger, or unusual work site conditions.

**Simultaneous Operations:** Operations at a facility by more than one work group, such as, operations, drilling, production and/or construction. When simultaneous operations occur at one facility, each of the individual Job Site Supervisors must endorse the other Work Permit(s), i.e., sign the "Simultaneous Operations/Co-Signatures" section of the permits. This method ensures all parties are informed of the work activities at hand.

**Site Supervisor:** Person(s) authorized to approve and sign a Safe Work Permit, usually the Lead Operator, Foreman or designee.

## **V. RESPONSIBILITIES**

### Job Supervisor/Permit Initiator must:

- ◆ Initiate the "Safe Work Permit" by following the permit instructions attached to the booklet.
- ◆ Review and sign simultaneous work permits, i.e. (Safe Work, Hot Work, Confined Space), when applicable.
- ◆ Review the "Safe Work Permit" conditions and sign the permit, acknowledging that conditions are understood.
- ◆ Contact the Site Supervisor to inspect and authorize the work.
- ◆ Conduct pre-job safety meeting to review job scope, Safe Work Permit conditions and applicable simultaneous operations.

### Site Supervisor Must:

- ◆ Ensure all elements of the Safe Work Permit Procedure are followed.
- ◆ Ensure a site inspection is completed prior to issuing permit (refer to Site Inspection checklist on the Safe Work Permit).
- ◆ If applicable, ensure the atmospheric tests for safe Oxygen content, flammables, and toxics (O<sub>2</sub>, LFL/LEL, and H<sub>2</sub>S) are performed.
- ◆ Ensure permit initiator has signed applicable simultaneous operational permits.
- ◆ Review, sign and approve the Safe Work Permit.

## **VI. QUALIFICATIONS OF PERSONNEL ISSUING PERMIT**

Any person, including contract personnel, can initiate a Safe Work Permit. However, only a qualified Site Supervisor or designee may authorize and sign the permit. In addition, the Site Supervisor must have sufficient knowledge of the applicable company procedures to be utilized.

**APPENDIX A**  
**SAFE WORK PERMIT INSTRUCTIONS (Completing the Form)**

**SECTION I WORK**

This section of the permit is to be completed by the Permit Initiator and/or Site Supervisor. The effective and expiration date/time must be listed. A permit is not valid beyond the duration of job scope or beyond a shift change, whichever is less. A complete description of the proposed task and work location must be identified.

**SECTION II EMERGENCY**

The emergency service section is to be completed by the Site Supervisor, and discussed with all affected parties prior to commencement of work. Appropriate emergency service providers must be identified and means of contacting them in the event of an incident must be provided. This section will typically have the name and phone number of the nearest fire department, hospital and/or ambulance service.

**SECTION III SITE INSPECTION**

This section is to be completed by the Site Supervisor and/or person performing the work. The person's initials indicate that an inspection has been made and that applicable precautions have been taken and will remain in effect until the work listed is completed or until the permit expires.

**SECTION IV PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Appropriate Personal Protective Equipment (PPE) to be used shall be specified in this section. The Site Supervisor must review this section prior to authorizing the work permit.

**SECTION V SIGNATURES**

This section requires the signatures described below:

1. Permit Initiator/Job Supervisor -The person to whom the permit is issued shall acknowledge that they understand and will comply with all conditions, precautions and restrictions of the permit by signing their signature to the permit.
2. Simultaneous Operation/Co-Signature - If a simultaneous operation is in effect at one facility, each of the individual Job Supervisors must also sign the co-authorized section. The co-authorized signature ensures all appropriate parties are informed of additional work activities.

3. Site Supervisor - The person responsible for the job site/ location shall authorize the work by signing their signature only after:
- ◆ Ensuring all elements of the Work Permit Procedure are followed.
  - ◆ Ensuring permit initiator has signed applicable simultaneous work permits, i.e.(Safe Work, Hot Work, Confined Space).
  - ◆ Ensuring that the person to whom the permit is issued fully understands the conditions, restrictions, and precautions of the permit.

#### **DISTRIBUTION OF PERMIT**

- COPY 1** Post with Site Supervisor until work is completed, usually in the control room or office.
- COPY 2** To kept in the files for a minimum of 5 years
- COPY 3** Post at Job Site

# SAFE WORK PERMIT

<b>SECTION I</b>	<b>WORK</b>	Effective _____ Time _____ AM/PM Expires _____ Time _____ AM/PM <b>(PERMIT VALID FOR DURATION OF JOB, OR UNTIL SHIFT CHANGE, WHICHEVER IS LESS)</b>																																																																											
		Permit Issued To: _____ <div style="display: flex; justify-content: space-between;"> <span>Name</span> <span>Company</span> </div>																																																																											
		Description of Work _____																																																																											
		Specific Location _____ No. of Workers _____																																																																											
<b>SECTION II</b>	<b>EMERGENCY</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">Name of Service</div> <div style="width: 30%; text-align: center;"><b>EMERGENCY SERVICE</b> Phone Number</div> <div style="width: 30%; text-align: right;">Method of Contact</div> </div> _____ _____																																																																											
<b>SECTION III</b>	<b>SITE INSPECTION</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 40%;">INSPECTION ITEMS</th> <th colspan="2" style="text-align: center;">Initials</th> <th rowspan="2" style="width: 40%;">INSPECTION ITEMS</th> <th colspan="2" style="text-align: center;">Initials</th> </tr> <tr> <th style="text-align: center;">Verified</th> <th style="text-align: center;">N/A</th> <th style="text-align: center;">Verified</th> <th style="text-align: center;">N/A</th> </tr> </thead> <tbody> <tr> <td>Ensure adequate lighting</td> <td></td> <td></td> <td>Protect cable trays or other electrical</td> <td></td> <td></td> </tr> <tr> <td>Ensure Ground Fault Circuit Interrupter (GCFI) use on temporary circuits. Ground / bond equipment.</td> <td></td> <td></td> <td>Competent person has inspected scaffolding or trench</td> <td></td> <td></td> </tr> <tr> <td>Use power ventilation equipment</td> <td></td> <td></td> <td>MSDS on location</td> <td></td> <td></td> </tr> <tr> <td>De-pressurize / vent piping and equipment</td> <td></td> <td></td> <td>Ensure the correct tools for the job are used</td> <td></td> <td></td> </tr> <tr> <td>Blind, blank or disconnect / misalign piping and equipment – refer to blind/equipment isolation list</td> <td></td> <td></td> <td>Control hazards to adjacent operations / locations</td> <td></td> <td></td> </tr> <tr> <td>Disconnect, lock and tag ALL energy sources</td> <td></td> <td></td> <td>Clean / wash equipment first</td> <td></td> <td></td> </tr> <tr> <td>Cover or plug drains</td> <td></td> <td></td> <td>Purge equipment / piping</td> <td></td> <td></td> </tr> <tr> <td>Identify overhead / underground hazards</td> <td></td> <td></td> <td>Hold pre-job safety meeting</td> <td></td> <td></td> </tr> <tr> <td>Applicable safety systems bypassed, flagged, Logged and monitored</td> <td></td> <td></td> <td>Job Site Safety Analysis (JSA) for task</td> <td></td> <td></td> </tr> <tr> <td colspan="6">Other conditions: _____</td> </tr> </tbody> </table>						INSPECTION ITEMS	Initials		INSPECTION ITEMS	Initials		Verified	N/A	Verified	N/A	Ensure adequate lighting			Protect cable trays or other electrical			Ensure Ground Fault Circuit Interrupter (GCFI) use on temporary circuits. Ground / bond equipment.			Competent person has inspected scaffolding or trench			Use power ventilation equipment			MSDS on location			De-pressurize / vent piping and equipment			Ensure the correct tools for the job are used			Blind, blank or disconnect / misalign piping and equipment – refer to blind/equipment isolation list			Control hazards to adjacent operations / locations			Disconnect, lock and tag ALL energy sources			Clean / wash equipment first			Cover or plug drains			Purge equipment / piping			Identify overhead / underground hazards			Hold pre-job safety meeting			Applicable safety systems bypassed, flagged, Logged and monitored			Job Site Safety Analysis (JSA) for task			Other conditions: _____					
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<b>SECTION V</b>	<b>SIGNATURES</b>	We have received instructions on safety procedures and hazards of this job and the permit is complete.																																																																											
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		Simultaneous Operations Co-Signatures _____ _____																																																																											
		Site Supervisor / Designee _____																																																																											

Permit Closed Out by:

# Air Test Log

Document air test readings every \_\_\_\_\_ minutes.

[illegible]

## TEST EQUIPMENT INFORMATION

Analyzer type:	
Serial Number:	
Calibration Date:	

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## **VEHICLE POLICY**

### **Purpose**

According to the Bureau of Labor Statistics (BLS); more than 2,000 deaths a year are caused by occupational motor vehicle incidents. This figure represents greater than 30 percent of the annual number of fatalities from occupational injuries. Vehicle Accidents is the #1 cause of job related injuries and deaths. Therefore this policy has been created to reduce, if not eliminate, the number of work related vehicle incidents in our Company.

### **Scope**

This program applies to motor vehicle safety while driving Company vehicles, which is defined as the use of vehicles that are Company owned, leased, rented, or otherwise designated for Company use, including personal vehicles used for Company business.

### **Reference**

Best Practices - Vehicle Safety Training is not mandated by law.

### **Responsibilities**

**Supervisors** shall be responsible for ensuring the following:

- Incident free driving on Company business.
- Verifying that drivers under their control have a valid and appropriately designated driver's license.
- Ensuring daily pre-trip inspections of the vehicle and its emergency equipment are performed.
- Ensuring employee and passenger safety, including requiring the use of safety belts.
- Reporting defects so that corrective action can be taken.
- 

**Employees / Contractors** are responsible for ensuring the following:

- The safety of you and all passengers.
- Incident free driving on Company business.
- Driving with appropriate and valid driver's license.
- Informing your supervisor in the event your driver's license becomes suspended for any reason.
- Completing daily pre-trip inspections and walk around of the vehicle and its emergency equipment.
- Safely returning vehicles and equipment to service.

## **Defensive Driving**

Incident free driving is the key responsibility of all Company personnel. To obtain this goal requires the attitude of a professional defensive driver. A defensive driver is one who drives to prevent incidents despite weather conditions, the actions of others, road conditions, etc.

Defensive driving includes the following behaviors:

- Conducting pre-trip inspections of the vehicle and its emergency equipment.
- Walking around your vehicle prior to leaving.
- Ensuring passenger safety, including the use of safety belts.
- Reporting defects so that corrective action can be taken.
- Journey planning and anticipating delays.
- Eliminating distractions, such as cell phone/radio use, eating, or drinking.
- Obeying traffic laws.
- Ensuring that vehicle cab housekeeping is maintained.
- Utilizing defensive driving techniques at all times.

The Defensive Driving Principles of Space Cushion driving shall be observed. Allowing adequate space for the vehicle and adequate visibility provides time to predict the actions of others. It also allows the driver to avoid potentially dangerous situations and to communicate their presence and/or intentions to other drivers.

The keys to Space Cushion driving are summarized as follows:

- ✓ Aim High in Steering
- ✓ Get the Big Picture
- ✓ Keep Your Eyes Moving
- ✓ Leave Yourself An Out
- ✓ Make Sure They See You

## **Commentary Driving Techniques**

Commentary driving is a valuable training tool, it forms part of the process of becoming an advanced driver. The ability to give a driving commentary will help you (amongst other things) to improve your concentration level and to drive systematically. These are two of the key areas that need development when learning to drive at the advanced standard required by the advanced driving tests.

Quite a lot of drivers find it difficult to talk and drive at the same time. The reasons for this range from the variation in the ways that our brains (as individuals) process information, through to the simple fact that some people are embarrassed about talking out loud as they drive.

When trying commentary driving for the first time some drivers slow down as they struggle for words to describe the ever changing scene ahead. In extreme cases the commentary can cause problems if one aspect of the driving scene is dwelt on for too long.

The ability to give a running commentary, like any other aspect of driving, improves with constant practice. Consider the following aspects of commentary driving:

- Keeping it relevant
- Keeping it simple
- The benefits for your training

A good commentary includes information about:

- The driver's actions
- Weather conditions
- The actions of other road users
- Time and location
- Physical features of the road
- The characteristics of the road surface
- Traffic signs and road markings

While talking about all the factors listed above the driver will be anticipating the likely outcome of any developing situation and the action that will be taken to negotiate that situation safely.

By talking out loud you will start to 'prioritize' areas which require a specific course of action – in turn this will help to raise your awareness of the importance of planning ahead.

Your commentary will help you to structure the way you think while driving.

### **General Vehicle Safety Rules**

1. You shall have a valid driver's license to drive any vehicle on company premises. All drivers of company vehicles must have the appropriate driver's license i.e. (Class A, B, or C).
2. Each company vehicle must be inspected by the employee prior to driving. All trash must be removed before you leave your vehicle at the end of day.
3. It is company policy for all drivers and passengers to wear seat belts.
4. Company vehicles are not to be used for non-Company business.

5. Use drive-through parking whenever possible to reduce backing accidents. When parking your vehicle leave enough room ahead to allow exiting in forward gear. Never leave a running vehicle unattended. Wheel chocks are required on vehicles in excess of 1 ton capacity.
6. Perform the circle of safety, i.e. circle your vehicle prior to leaving to avoid hitting low level objects. Do not back up any vehicle or equipment when you do not have a clear view. Have an observer signal you if the rear view is blocked.
7. The maximum speed limit on any job site is 25 MPH, unless posted otherwise.
8. Never drive over unprotected flow lines or other barriers. Do not park in areas that contain weeds or other combustible barriers.
9. Passengers may not ride outside the cab of any truck, i.e. they must not ride in beds, on truck bumpers, running boards, or tailgates.
10. Pipe carrying racks must never be overloaded. All fittings, tools, supplies, equipment and loose objects hauled on trucks must be firmly secured or restrained to prevent them from falling off into the path of other vehicles.
11. All loads hauled on vehicles must be securely tied down with approved rope, straps or chains. Under no circumstances shall a load be hauled without proper tie downs. Before hauling a load make a quick walk around the vehicle to assure all tool boxes are closed and that the load is secure. Use red flags on any load that exceeds 4 feet overhang beyond truck, trailer or dolly.
12. When hauling a load check to be sure the load stays secure while under way. It's a good idea to pull over and re-tighten your load periodically.
13. DO NOT stand near trucks when unbinding or unloading pipe.
14. NEVER attempt to perform work or drive a vehicle when you are impaired by alcohol, medication or drugs.
15. Vehicles shall not be parked behind other vehicles or in such a position that places the vehicle in another vehicle's blind spot.

### **Training**

All drivers of Company or rental vehicles must complete an initial defensive driving course, participate in the commentary drive program, and participate in BBS observations. Drivers shall also attend periodic refresher defensive driving course as required.

# VEHICLE INSPECTION REPORT

WEEK ENDING DATE: \_\_\_\_\_ DRIVER: \_\_\_\_\_

**CHECK ITEMS WHICH ARE DEFECTIVE (X) AND SUPPLY DETAILS ABOUT THE DEFECT IN THE "REMARKS" SECTION BELOW. USE (✓) IF INSPECTION WAS SATISFACTORY. MARK N/A FOR NOT APPLICABLE.**

VEHICLE NO.:	M	T	W	T	F	S	S	TRAILER NO.:	M	T	W	T	F	S	S
BRAKES (SERVICE)								BRAKES							
BRAKES (PARKING)								BRAKE CONNECTIONS							
BODY								BUMPER							
CLUTCH								COUPLING DEVICE							
COOLING SYSTEM								DOORS							
DEFROSTER								HITCH							
DRIVE LINE								KINGPIN							
ENGINE								LANDING GEAR							
EXHAUST SYSTEM								LIGHTS							
FRAME								REFLECTORS							
FUEL TANKS								SECUREMENT SYSTEMS							
HEATERS								SUSPENSION SYSTEM							
HORN								TIRES							
LEAKS								WHEELS & RIMS							
LIGHTS								OTHER							
OIL PRESSURE								SAFETY/EMERGENCY EQUIPMENT							
REAR VISION MIRRORS								FIRE EXTINGUISHER							
REFLECTORS								FLAGS							
SPEEDOMETER								FUSES & FLARES							
STEERING SYSTEM								REFLECTIVE TAPE							
SUSPENSION SYSTEM								FIRST AID KIT							
TIRES								SEATBELTS							
WHEELS & RIMS								OTHER:							
WINDOWS															
WINDSHIELD WIPERS															
OTHER:								REMARKS:							

☐ CONDITION OF VEHICLE IS SATISFACTORY

I CERTIFY THAT I AM SATISFIED THAT THIS VEHICLE IS IN SAFE OPERATING CONDITION AND I HAVE REVIEWED THE LAST VEHICLE INSPECTION REPORT AND VERIFIED THAT REQUIRED REPAIRS HAVE BEEN COMPLETED.

\_\_\_\_\_  
DRIVER'S SIGNATURE

\_\_\_\_\_  
DATE

☐ ABOVE DEFECTS CORRECTED

☐ ABOVE DEFECTS NEED NOT BE CORRECTED FOR SAFE OPERATION OF VEHICLES

\_\_\_\_\_  
MECHANIC'S SIGNATURE

\_\_\_\_\_  
DATE

## **ASBESTOS**

### **RECOGNITION OF INDUSTRY ASBESTOS HAZARDS**

The first step in recognition of industrial asbestos hazards is to develop knowledge of the types of construction materials that historically have contained asbestos. Common materials that may contain asbestos include:

- sprayed-on insulation on ceilings or walls
- sprayed-on insulation on beams
- insulation around or in duct work
- boiler insulation
- pipe coverings
- ceiling, floor or wall tiles or panels
- fire walls and doors
- sprayed-on decorative surfaces
- gaskets in piping or other systems
- automotive braking systems (covered under general industry standard even when found in a construction environment)

The second step is positive identification of asbestos in the material. This is done by taking a bulk sample of the material and submitting it to a laboratory for analysis. Only a small amount of the material is needed for analysis. The samples should be shipped to the laboratory in 20-milliliter scintillation vials, 35-millimeter film canisters, or small prescription bottles from pharmacies. Do not send samples in plastic bags or envelopes, as these may break or leak and contaminate other samples in the same shipment and/or the laboratory environment and personnel. The recommended analytical technique is polarized light microscopy.

To obtain samples from some materials it may be necessary to use a scraping or cutting tool, such as a penknife, putty knife or sheetrock knife. In some cases it may be necessary to patch-up places where a sample has been taken. For example, duct tape may be applied over a hole in pipe lagging.

In all cases, be careful not to overexpose yourself when taking a sample. Use of an appropriate respirator and other protective equipment may be required.

NOTE: OSHA does not recommend the use of commercially available kits for screening for the presence of asbestos in construction materials because of the following problems:

## **GENERAL REQUIREMENTS**

1. Asbestos awareness training is required for employees whose work activities may contact asbestos containing material (ACM) or presumed asbestos containing material (PACM) but do not disturb the ACM or PACM during their work activities. The training must be documented.
2. Possible locations where employees may be exposed to asbestos during their job functions include: asbestos materials are used in the manufacture of heat-resistant clothing, automotive brake and clutch linings, and a variety of building materials including insulation, soundproofing, floor tiles, roofing felts, ceiling tiles, asbestos-cement pipe and sheet, and fire-resistant drywall. Asbestos is also present in pipe and boiler insulation materials, pipeline wrap and in sprayed-on materials located on beams, in crawlspaces, and between walls.
3. Health effects of asbestos include respiratory disease and various types of cancer. Exposure to asbestos has been shown to cause lung cancer, asbestosis, mesothelioma, and cancer of the stomach and colon.
4. Employees will abide by warning signs and labels and will not disturb the asbestos containing material. Signs and labels shall identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that asbestos containing material (ACM) and/or presumed asbestos containing material (PACM) will not be disturbed.
5. When working on multi-contractor worksites, employees shall be protected from exposure. If employees working immediately adjacent to a Class I asbestos jobs are exposed to asbestos due to the inadequate containment of such job, the company shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

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## BLOODBORNE PATHOGEN POLICY

### **I     PURPOSE**

An infection control plan must be prepared for all persons who handle, store, use, process, or dispose of infectious medical wastes, or may foreseeably be exposed to blood or body fluids in the conduct of their job. This infection control plan was written to comply with OSHA requirement, 29 CFR 1910.1030, Blood Borne Pathogens. The plan includes requirements for personal protective equipment, housekeeping, training, and a procedure for reporting exposures. **Employees who provide 1st aid response as part of their job task must be included in the program.** Ordinarily, custodial workers do not need to be included in the program, however, their jobs should be evaluated to determine the risk of exposure for their particular worksite.

The purpose of the Bloodborne Pathogens Standard is to "reduce occupational exposure to Hepatitis B Virus (HBV), Human Immunodeficiency Virus (HIV), the virus that causes AIDS, and other Bloodborne pathogens" that employees may encounter in their workplace.

### **II     APPLICABILITY**

The Bloodborne Pathogen program applies to all company personnel that can reasonably anticipate exposure to blood or other infectious material. Exposure determinations shall be made without regard to use of personal protective equipment, i.e. employees protected with appropriate PPE are considered exposed in the determination. Exposure shall be assumed for all personnel expected to provide emergency care and/or trained in First Aid procedures.

### **III     DEFINITIONS**

**Biological Hazard** - The term biological hazard or biohazard is taken to mean any viable infectious agent that presents a risk, or a potential risk, to the well being of humans.

**Medical Wastes/Infectious Wastes** - All waste emanating from human or animal tissues, blood or blood products or fluids. This includes used first aid bandages, syringes, needles, sharps, material used in spill cleanup and contaminated PPE or clothing.

**Universal Precautions** - Refers to a system of infectious disease control that assumes that every direct contact with body fluids is infectious and requires every employee exposed to be protected as though such body fluids were infected with blood-borne pathogens. All infectious/medical material must be handled according to Universal Precautions (OSHA Instruction CPL 2-2.44A)

**Hazards** - Unprotected exposure to body fluids presents the possible risk of infection from a number of bloodborne pathogens notably Hepatitis and HIV.

**Engineering Controls** - Refers to prevention of exposure to bloodborne pathogens via controls that include proper storage facilities and containers, autoclaves, and disinfectant equipment.

**Administrative Controls** - Administrative controls include universal precautions, assignment of PPE, employee training, use of spill kits specifically designed for blood and body fluids, restricted access to waste collection points and waste disposal procedures.

#### **IV GENERAL REQUIREMENTS**

1. Training shall be provided at the time of initial assignment and within 1 year of their previous training.
2. Occupational exposure to blood or other potentially infectious materials requires that all employers that can "reasonably anticipate exposure" of employees to infectious material to prepare and implement a written exposure control plan. Site specific exposure control plans shall be developed.
3. Universal precautions must be observed. Under circumstances in which differential between body fluids is difficult or impossible, all body fluids will be considered potentially infectious.
4. Employees will have access to a copy of the exposure control plan. Access to a copy of the exposure control plan shall be provided in a reasonable time, place, and manner.
5. Hand washing facilities must be readily available at all work locations or ensure antiseptic solutions/ towelettes will be available for use. If provision of hand washing facilities are not feasible, then an appropriate antiseptic hand cleanser in conjunction with cloth/paper towels or antiseptic towelettes must be provided.
6. When the possibility of occupational exposure is present, PPE is to be provided at no cost to the employee such as gloves, gowns, etc. PPE shall be used unless employees temporarily declined to use under rare circumstances. PPE shall be repaired and replaced as needed to maintain its effectiveness
7. All equipment or environmental surfaces shall be cleaned and decontaminated after contact with blood or other infectious materials.

8. The Hepatitis B vaccine shall be available to all employees that have occupational exposure at no cost to the employee(s).
9. Accurate records for each employee with occupational exposure must be maintained for at least the duration of employment plus 30 years.
10. Training records shall be maintained for 3 years from the date of training.

#### **V GENERAL PROGRAM MANAGEMENT**

There are a number of general principles that should be followed when an employee has occupational exposure to blood or other potentially infectious materials. Under all circumstances it shall be assumed universal procedures apply, i.e. all body fluids shall be considered potentially infectious.

1. It is prudent to minimize all exposure to bloodborne pathogens.
2. Risk of exposure to bloodborne pathogens shall never be underestimated.
3. Engineering and work practice controls shall be structured to eliminate or minimize employee exposure to bloodborne pathogens.

#### **Other Potential Infectious Materials (OPIM)**

All occupational exposure to blood or **other potentially infectious materials (OPIM)** place workers at risk for infection with bloodborne pathogens. OSHA defines blood to mean human blood, human blood components, and products made from human blood. **Other potentially infectious materials (OPIM) means:** (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

#### **VI EXPOSURE DETERMINATION**

Tasks and procedures in which occupational exposure to blood or other potentially infectious materials can occur are as follows:

1. Care of Lacerations and Similar Wounds
2. Administering First Aid or CPR
3. Caring for Burned Skin

## **VII METHODS OF COMPLIANCE**

### **Employee Access to Exposure Plan**

Employees shall receive a copy of the exposure control plan upon hire. Additional copies are available from the company Safety Representative upon request.

### **Communication of Hazards**

Bloodborne Pathogen hazards shall be communicated to employees via information within this policy, information booklets, training and warning labels/signs.

### **Universal Precautions**

Universal Precautions will be used to prevent contact with blood and other potentially infectious material. Unless it is known otherwise, all human blood, or bodily fluids will be treated as if they are infected with HBV, HIV or other bloodborne pathogens.

### **Engineering Controls**

The Safety Representative or his designee will work with department managers and supervisors to review tasks and procedures performed at the work sites in situations where engineering controls can be implemented and/or updated. Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

The following engineering controls are used throughout each location:

- Hand washing facilities, which are readily accessible to all employees who have the potential for exposure.
- If hand-washing facilities are not feasible, an appropriate antiseptic hand cleanser in conjunction with cloth/paper towels or antiseptic towelettes shall be provided.

### **Work Practice Control**

All appropriate work practice controls shall be in place as follows:

- Specimens of blood or potentially infectious materials must be put in leak proof bags for handling.
- Hands are to be washed immediately or as soon as feasible, after removal of gloves or other personal protective equipment.
- Following any contact of body areas with blood or any other potentially infectious materials, wash hands and any other exposed skin with soap and water as soon as possible. Flush exposed eyes, nose and/or mouth if any of these areas are affected.

**GENERAL SAFETY POLICIES**

Section: 5.02 Bloodborne Pathogen Policy

Revision Number: 1

Revision Date: 6/20/2013

File Name: P502

- In all procedures involving blood or other potentially infectious material, employees should minimize splashing, spraying or other actions generating droplets of these materials.
- Equipment or environmental surfaces shall be thoroughly cleaned & decontaminated after contact with blood or other infectious material.

**VIII PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Personal Protective Equipment is provided to Company employees for protection against occupational exposure to blood and other potentially infectious material. It shall be used when rendering aid and provided at no cost to employees. PPE shall be appropriately sized for responders and readily available. PPE shall be cleaned/launched and properly disposed. The specific PPE available at Company Facilities includes, but is not limited to, the following:

**Type Available****Locations**

Disposable gloves

In all first aid boxes

Safety glasses with solid side shields

In all first aid boxes

Disposable pocket masks with one way valves

In all first aid boxes**IX RESPONSE PROCEDURES**

Incidents involving exposure to blood or other potentially infectious material are to be dealt with as follows:

1. The employee is to report the incident to his/her direct supervisor before the end of the work shift during which the incident occurred. The employee's supervisor will notify the Safety Representative when the employee reports the incident.
2. Employees who render first aid assistance in any situation involving the presence of blood, or other potentially infectious material, regardless of whether or not a specific exposure incident occurs will be offered a series of Hepatitis B (HBV) immunizations at no cost to employee as soon as possible, but no later than 24 hours following initial exposure. The employee's direct supervisor is to inform the employee of this when the exposure is reported.

**GENERAL SAFETY POLICIES****Section: 5.02 Bloodborne Pathogen Policy**

Revision Number: 1

Revision Date: 6/20/2013

File Name: P502

3. The Safety Representative or his designee will contact the locally approved Medical Facility to arrange for the exposed employee to receive the HBV immunization series.
4. Exposed employees that decline the HBV vaccination series should read and sign the OSHA Declination Form.

**X INFORMATION AND TRAINING**

Information will be provided to all employees during Company provided CPR/ Medic First Aid / Bloodborne pathogens training program. The written policy may be obtained from any Safety Representative, or within the Company Safety Manual.

All personnel assigned duties as deemed at risk of exposure will receive initial and annual training by a qualified instructor on the Bloodborne Pathogen Policy. Additionally, personnel trained in First Aid shall be offered this annual training. All new and current affected Employees will be trained initially and annually thereafter.

**The content of the training program will include:**

- Facility Policy
- Types and transmission of Blood-Borne Pathogens
- General Safety Rules
- Universal Precautions
- Use of Personal Protective Equipment
- Waste Disposal Procedures
- Post Exposure Treatment and Procedures
- HBV Vaccinations

**XI LABELING**

Warning labels must be affixed to containers of infectious waste. Labels must include the BIOHAZARD legend and symbol. Labels must be fluorescent orange or orange-red, or predominantly so, with lettering or symbols in contrasting color.

- Labels should be affixed as close as possible to the container by string, wire, adhesive, or another method that prevents loss or unintentional removal.
- Labels for contaminated equipment must meet the specifications above, and must state the portions of the equipment which remain contaminated.



**LABELS SHOULD DISPLAY THIS  
UNIVERSAL BIOHAZARD SYMBOL**

The area Safety Representative must be contacted to determine appropriate disposal of biohazard waste.

## **XII POST-EXPOSURE EVALUATION AND FOLLOW-UP**

### **Accident Investigation**

If an employee is involved in an incident where exposure to blood or other potentially infectious materials occurs:

- The exposed employee's supervisor will investigate the circumstances surrounding the exposure incident.
- Make sure that medical consultation and treatment (if required) is provided as quickly as possible.

## **XIII MAINTENANCE OF RECORDS**

Documents related to the Company Bloodborne Pathogen Policy are maintained in the main office. Accurate records for each employee with occupational exposure must be maintained for at least the duration of employment plus 30 years.

Records include:

- Individual exposure and/or medical documents.
- Applicable training records, to include: date and content of training, name and job title of personnel attending.

All records required by this section shall be made available upon request of employees, Assistant Secretary and the Director for examination and copying. Medical records must have written consent of employee before released. The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h). The company Safety Representative is responsible for maintaining medical and/or training records and has the overall responsibility for the effectiveness of this policy.

**Appendix A**

**Record of Hepatitis "B" Vaccine Declination**

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to me. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

\_\_\_\_\_  
Employee's Name (Print)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Employee's Signature

\_\_\_\_\_  
Date

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## I. PURPOSE

The Company Inc. will provide employees with CPR/First Aid training so that personnel will be available for initial first aid treatment of injuries should an accident occur. Any employee who feels they are not capable of administering CPR/First Aid should seek immediate help by calling 9-1-1 for the victim of an accident and stay with the victim until help arrives, or seek out another employee that can administer this service.

## II. SCOPE

Each remote work site shall have a person certified in first aid and CPR available to render emergency care. Although the Company does not have designated First aid/CPR responders we do provide First Aid/CPR training for all of its employees every two years. Employees are not required to respond to first aid or CPR events, but if they feel they have adequate knowledge, training and capability, they may respond as "Good Samaritans".

## III. REFERENCE

29 CFR 1910.151(b), *Medical Services and First Aid*

29 CFR 1910.1030(d), *Bloodborne Pathogens*

29 CFR 1926.23, *First Aid and Medical Attention*

CCR Title 8, Sections 1512 and 3400, *Emergency Medical Services and First Aid*

## IV. RESPONSIBILITIES

- Site supervisors shall ensure first aid kits are inspected before being sent to each job and weekly to ensure expendable items are replaced as necessary.
- Site supervisors shall keep a list of appropriate emergency phone numbers, for hospitals, physicians, ambulance and other emergency services necessary in the event an injured person must be transported.
- Site supervisors shall ensure appropriate fresh water, drinking cups, washing facilities are available at each site.
- Site supervisors shall ensure appropriate eye wash facilities are available when employees are exposed to corrosive materials.

## **V. GENERAL REQUIREMENTS**

1. In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite, which is available for the treatment of injured employees, a person who has a valid certificate in first aid shall be available at the worksite to render first aid.
2. A valid certificate in first aid training must be obtained from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence.
3. First aid supplies must be readily available and easily accessible when required.
4. First aid kits shall consist of appropriate items which will be adequate for the environment in which they are used (refer to inventory list shown above). For construction operations, items shall be stored in a weather proof container with individual sealed packages of each type of item.
5. Site Supervisors shall ensure the availability of adequate first aid supplies, and periodically reassess the demand for supplies and adjust their inventories. For construction operations, first aid kits shall be checked before being sent out to each job and at least weekly.
6. Proper site specific equipment for prompt transportation of the injured person to a physician or hospital or a communication system for contacting necessary ambulance service shall be provided.
7. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities shall be provided within the work area.

## VI. ABC EVALUATION

The initial evaluation of a victim should follow the procedure developed by the American Red Cross for basic life support, called the "ABC Evaluation" (Airway, Breathing, Circulation).

A review of the procedure for performing ABC evaluation is provided in the table below.

Step	Action	Explanation
1	Check for responsiveness	<ul style="list-style-type: none"><li>• If the victim responds, monitor condition and consider obtaining medical attention for the victim.</li><li>• No additional action is required by the rescuer.</li><li>• If the victim does not respond, call for help and proceed to Step 2.</li></ul>
2	Position the victim	<ul style="list-style-type: none"><li>• If necessary, move the victim so he/she is lying on their back.</li></ul>
3	Clear the victim's airway	<ul style="list-style-type: none"><li>• Open the airway by using the head-tilt/chin-lift method.</li><li>• Look into the victim's mouth and remove anything that is blocking or could block the airway.</li></ul>
4	Determine whether or not the victim has stopped breathing	<ul style="list-style-type: none"><li>• Place your cheek next to the victim's nose and mouth to feel an exchange of air for 3 to 5 seconds.</li><li>• At the same time, watch for any chest movement.</li><li>• <i>If the victim is breathing, proceed to Step 5.</i></li><li>• <i>If breathing has stopped, begin rescue breathing.</i></li></ul>
5	Locate the carotid artery to feel if the heart is circulating blood	<ul style="list-style-type: none"><li>• Initially place the tips of two fingers on the larynx (voice box).</li><li>• Gently slide your fingers into the groove between the voice box and the large muscle of the neck.</li><li>• Feel for the victim's pulse</li></ul> <p><i>If circulation has stopped, begin CPR.</i></p>

## VII. SEVERE BLEEDING

Severe bleeding is the result of a wound to large vessels of the body and **MUST** be controlled quickly.

Prior to performing any first aid on a bleeding victim, you should:

- Call for medical help or have someone else call while first aid is being initiated.
- Use personal protective clothing such as surgical gloves, mask, and other protective items from the first aid kit.

Control severe bleeding by referring to the table below to identify and initiate the correct procedure.

**If the bleeding...**

Can be controlled with a:

- clean pad
- handkerchief, or
- cloth

**Then...**

1. Place a clean pad, handkerchief, or cloth over the wound and press firmly with your hands

*Note: If you do not have a pad or bandage, close the wound with your hand or fingers.*

2. Apply pressure directly over the wound.
3. Hold the pad firmly in place with a bandage, necktie, or cloth strip, etc.

**If the bleeding...**

is the result of an injury such as amputation, mangled, or crushed arms or legs and **CANNOT** be controlled with the procedure described above

**Then...**

Apply pressure at a point and then if not controlled apply a tourniquet to the wound by:

1. finding a strong, wide piece of cloth;
2. placing it immediately above the wound, making sure that it is just tight enough to stop the bleeding, and;
3. notify medical responders that a tourniquet is in place.

## **VIII. FIRST AID KIT INVENTORIES**

First aid kits will be provided by the company. The size of the kit will be determined by the number of employees it will serve. The contents of the first aid kits shall be stored in a weatherproof container with individually sealed packages and inspected regularly (at least weekly) to ensure that the expended items are replaced. The contents of first aid kits shall be arranged to be quickly found and remain sanitary. Each kit has been approved by our company physician and should include at a minimum:

<b>Truck Kits (up to 10 people)</b>	
32 Sheer Bandages, 3/4X3"	4 NON-STICK pads medium
2 KLING Gauze Bandages, 2"	2 Oval Eye Pads
1 Triangle Bandages	1 First Aid Tape, 1/2x180"
10 Antiseptic Wipes	1 First Aid Guide
2 Disposable Gloves	2 Burn Cream, 1/8 oz. packs
2 CPR Barriers	

<b>JOB SITE KITS (up to 25 people)</b>	
32 Sheer Bandages, 3/4x3"	2 KLING Gauze Bandages, 2"
4 NON-STICK pads medium	2 Oval Eye Pads
1 Triangle Bandages	1 First Aid Tape, 1/2x180"
10 Antiseptic Wipes	2 Burn Cream, 1/8 oz. packs
2 Disposable Gloves	20 Flex. Fabric Bandages, 1x3
2 CPR Barriers	4 NON-STICK Pads Small
1 First Aid Guide	1 Elastic Bandage, 2"
1 Scissors & Tweezers	1 Instant Cold Pack, Small

<b>JOB SITE KITS (up to 100 people)</b>	
4 Disposable Gloves	12 Burn Cream, 1/8 oz. packs
30 Antiseptic Wipes	2 First Aid Tape, 1/2x180"
2 Triangle Bandages	4 KLING Gauze Bandages, 2"
4 NON-STICK pads medium	4 Oval Eye Pads
1 First Aid Guide	100 Sheer Bandages, 3/4x3"
4 CPR Barriers	40 Flex. Fabric Bandages, 1x3
2 NON-STICK Pads Small	1 Elastic Bandage, 2"
2 Instant Cold Pack, 4 1/2x6"	1 Scissors & Tweezers
10 Plastic Bandages , Ex. Lg.	10 Flex. Fabric Knuckle Band.
10 Flex. Fabric Finger Band.	2 NON-STICK Pads, Medium
2 NON-STICK Pads, Large	2 NU-Gauze Sterile Sponges
2 KLING Rolled Bandages, 4"	2 Combined Dressings, 5x9"
1 Tourniquet, 3/4x36"	1 Elastic Bandage 2"
1 First Aid Cream, 8oz.	2 Ophthalmic Irrigating Fld.
1 Rescue Blanket, 56"x 84"	

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## **FIRE PREVENTION AND PROTECTION**

### **I. PURPOSE**

OSHA's Fire Prevention Plan regulation, requires the company, to have a written fire prevention plan (FPP). This plan applies to all operations in our company where employees may encounter a fire.

This FPP is in place at this company to control and reduce the possibility of fire and to specify the type of equipment to use in case of fire. This plan addresses the following issues:

- Major workplace fire hazards and their proper handling and storage procedures.
- Potential ignition sources for fires and their control procedures.
- The type of fire protection equipment or systems which can control a fire involving them.
- Regular job titles of personnel responsible for maintenance of equipment and systems installed to prevent or control ignition of fires and for control of fuel source hazards.

### **II. REFERENCE**

TITLE 8 CCR, subsection 3221, Fire Prevention Plan  
29 CFR 1910.38, Emergency Action Plans

### **III. GENERAL REQUIREMENTS**

The plan is closely tied to our emergency action plan where procedures are described for emergency escape and route assignments, procedures to account for all employees after emergency evacuation has been completed, rescue and medical duties for those employees who perform them. Please see the emergency action plan for this information.

1. Fire equipment training (an educational program) shall be provided to employees whose duties require the use of fire protective equipment. The goal is to familiarize employees with the general principles of fire extinguisher use and the hazards involved in incipient stage fire fighting.
2. Training will be provided before initial assignment and annually thereafter.
3. Portable fire extinguishers are subjected to monthly visual inspections and an annual maintenance check.

#### **IV. SAFETY REPRESENTATIVE RESPONSIBILITIES:**

The assigned Safety Representative is responsible for the following activities. He must:

1. Develop a written fire prevention plan for day and evening work conditions.
2. Immediately notify the Long Beach fire or police departments, and the building owner/superintendent in the event of a fire affecting the office.
3. Integrate the fire prevention plan with the existing general emergency plan covering the building occupied.
4. Distribute procedures for reporting a fire, the location of fire exits, and evacuation routes to each employee.
5. Conduct drills to acquaint the employees with fire procedures, and to judge their effectiveness.
6. Satisfy all local fire codes and regulations as specified.
7. Train designated employees in the use of fire extinguishers and the application of medical first-aid techniques.
8. Keep key management personnel home telephone numbers in a safe place in the office for immediate use in the event of a fire. Distribute a copy of the list to key persons to be retained in their homes for use in communicating a fire occurring during non-work hours.
9. Decide to remain in or evacuate the workplace in the event of a fire.
10. If evacuation is deemed necessary, the Operations Manager ensures that:
  - o All employees are notified and a head count is taken to confirm total evacuation of all employees.
  - o When practical, equipment is placed and locked in storage rooms or desks for protection.
  - o The building owner/superintendent is contacted, informed of the action taken, and asked to assist in coordinating security protection.
  - o In locations where the building owner/superintendent is not available, security measures to protect employee records and property are arranged as necessary.

## **V. WORKPLACE FIRE HAZARDS**

It is the intent of this company to assure that accumulation of combustible waste materials are controlled so that a fast developing fire, rapid spread of toxic smoke, or an explosion will not occur. Employees are to be made aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses.

Fire hazards at our facilities include, but are not limited to, oily waste, such as oily rags, compressed gases contained in cylinders, and petroleum fuel materials.

Fire prevention measures must be developed for all fire hazards found. Once employees are made aware of the fire hazards in their work areas, they must be trained in the fire prevention measures developed and use them in the course of their work. For example, oil soaked rags must be treated differently than general paper trash in office areas. In addition, large accumulations of waste paper or corrugated boxes, etc., can pose a significant fire hazard. Accumulations of materials which can cause large fires or generate dense smoke that are easily ignited or may start from spontaneous combustion, are the types of materials with which this fire prevention plan is concerned. Such combustible materials may be easily ignited by matches, welder's sparks, cigarettes and similar low level energy ignition sources. It is the intent of this company to prevent such accumulation of materials.

Certain equipment is often installed in workplaces to control heat sources or to detect fuel leaks. An example is a temperature limit switch often found on deep-fat food fryers found in restaurants. There may be similar switches for high temperature dip tanks, or flame failure and flashback arrester devices on furnaces and similar heat producing equipment. If these devices are not properly maintained or if they become inoperative, a definite fire hazard exists. Again employees and supervisors should be aware of the specific type of control devices on equipment involved with combustible materials in the workplace and should make sure, through periodic inspection or testing, that these controls are operable. Manufacturer's recommendations should be followed to assure proper maintenance procedures.

Fuel is used throughout the plant as an energy source for various systems or equipment. This fuel can be a significant fire hazard and must be monitored and controlled.

## **VI. POTENTIAL IGNITION SOURCES**

Flammable or combustible materials may not ignite on their own without an external source of ignition.

The following procedures are used to control known ignition sources at this company: no accumulation of oily rags; cylinders are inspected and maintained in proper working condition; fuel materials are not exposed to external ignition sources

## **VII. FIRE PROTECTION EQUIPMENT**

Fire protection equipment, selected and purchased by the Operations Manager, in use at this company includes the following extinguishers to protect from the various types of fire hazards.

Type of Fire: B, flammable liquids, gases and greases. Type of Extinguisher: B or ABC, foam, carbon dioxide, dry chemicals

In addition, Fire hoses are also present to control fires. They are located at various places throughout the plants.

## **VIII. MAINTENANCE OF FIRE PROTECTION EQUIPMENT**

Once hazards are evaluated and equipment is installed to control them, the equipment must be monitored on a regular basis to make sure it continues to function properly.

### **Housekeeping Procedures**

Our company controls accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire. We have identified the following potential hazards in our facility:

- Accumulation of oily rags
- Open fuel oil containers
- Stockpiled Paper products

The following procedures have been developed to eliminate or minimize the risk of fire due to improperly stored or disposed of materials.

- Keep floor free of paper and dust.
- Store oily rags in specially designed containers.
- Store all flammables in fire cabinets when not in use.

## IX. FIRE EXTINGUISHER INSPECTION AND MAINTENANCE

All Company vehicles (except personal vehicles) should be equipped with an approved fire extinguisher. The size of the extinguisher should be determined by the anticipated need:

VEHICLE TYPE	MINIMUM REQUIREMENT
Pickups and Cars	2-1/2 pound fire extinguisher
Gang trucks, heavy equipment, hydro-cranes and welding trucks	20-pound fire extinguisher

- Fire extinguishers are an important segment of any fire protection program. Fire extinguishers should be:
  - a. Accessible
  - b. Properly maintained
  - c. Inspected monthly by trained personnel and documented
  - d. Inspected annually by qualified personnel and documented
- The supervisor is responsible for ensuring that all extinguishers are properly maintained and inspected. Each employee should know how to identify and report extinguishers needing recharging and/or maintained.
- Portable fire extinguishers shall be inspected visually monthly and re-certified on an annual basis. Appropriate records of annual certifications shall be kept with each individual fire extinguisher.

## X. TRAINING

At the time of a fire, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In cases where the fire is large, total and immediate evacuation of all employees is necessary. In smaller fires, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued plant operation. We must be sure that employees know what is expected of them during a fire to assure their safety.

This document is not one for which casual reading is intended or will suffice in getting the message across.

If passed out as a statement to be read to oneself, some employees will choose not to read it, or will not understand the plan's importance. In addition, training on the plan's content is required by OSHA.

A better method of communicating the fire prevention plan is to give all employees a thorough briefing and demonstration.

Training, conducted on initial assignment, includes:

- What to do if employee discovers a fire
- Demonstration of alarm, if more than one type exists
- How to recognize fire exits
- Evacuation routes
- Assisting employees with disabilities
- Measures to contain fire (e.g., closing office doors, windows, etc. in immediate vicinity)
- Head count procedures (see EAP for details)
- Return to building after the "all-clear" signal

If the Operation Manager has reason to believe an employee does not have the understanding required, the employee must be retrained.

The Environmental Compliance Consultant certifies in writing that the employee has received and understands the fire prevention plan training.

Because failure to comply with company policy concerning fire prevention can result in OSHA citations and fines as well as employee injury, an employee who does not comply with this program will be disciplined.

The Environmental Compliance Consultant provides training for each employee who is required to use fire prevention equipment. Employees shall not use fire prevention equipment without appropriate training. Training, before an individual is assigned responsibility to fight a fire, includes:

- Types of fires
- Types of fire prevention equipment
- Location of fire prevention equipment
- How to use fire prevention equipment
- Limitations of fire prevention equipment
- Proper care and maintenance of assigned fire prevention equipment and
- Extinguishing a small oil fire

Employees must demonstrate an understanding of the training and the ability to use the equipment properly before they are allowed to perform work requiring the use of the equipment.

If the Operation Manager has reason to believe an employee does not have the understanding or skill required, the employee must be retrained.

The Environmental Compliance Consultant certifies in writing that the employee has received and understands the fire prevention equipment training.

## XI. RESPONSIBLE PROCEDURES

In case of fire the following procedure should be used:

1. **Summon help by whatever means available.** Do not fight a fire before alerting someone else.
2. Analyze the situation, considering:
  - a. Threat to life?
  - b. Damage to public property?
  - c. Evacuate or is extinguishing the fire possible?
  - d. Notification and assistance from outside authorities appropriate?
  - e. Hazardous or toxic chemicals present?
3. Isolate all fuel sources and/or threatened facilities.
4. Fighting a fire in the initial stages is considered incipient fire fighting. **DO NOT FIGHT FIRES BEYOND THE INCIPIENT STAGE UNLESS YOU ARE TRAINED AND EQUIPPED TO DO SO AS A PART OF A FIRE BRIGADE OR EMERGENCY RESPONSE TEAM.** Such fire fighting should be limited to trained personnel using fire extinguisher and water streams at long range.
5. Locate the fire fighting equipment and approach the fire **FROM THE UPWIND SIDE.** In the case of a gas fire, extinguish the fire by shutting off the fuel source.
6. **NEVER OPERATE AN EXTINGUISHER IN SUCH A MANNER THAT ANY PART OF THE BODY IS LOCATED DIRECTLY IN FRONT OF THE FILL CAP.**
7. After the fire is extinguished, stand by to ensure that there are no flashbacks.

## **XII. FIRE PREVENTION GUIDELINES**

1. Class A fire materials should not be stored in or used as construction material in process areas.
2. Keep all buildings in which solvents or chemicals are being handled well ventilated at all times.
3. Report and repair all hydrocarbon liquid or gas leaks immediately. If immediate repairs are not possible, post an adequate warning sign, isolate the area and take extra precautions against fire.
4. In the event of a hydrocarbon liquid or gas leak, extinguish all fires and remove other sources of ignition immediately. Shut down engines and other potential sources of ignition, such as pilot lights. Report the leak promptly to the supervisor in charge. Shut off fuel supply or process if possible.
5. Use soap suds when testing for gas leaks on connections. Never use an open flame.
6. Use gasoline as a motor fuel only. Using gasoline as a cleaning agent on Company property is strictly forbidden. Use a high flash point (140 +F) safety solvent to clean tools, machinery and other similar equipment. Wear gloves made of hydrocarbon-resistant rubber to protect hands.
7. Transport gasoline only in approved, clearly marked containers. Never place gasoline containers inside car or truck passenger compartments.
8. Follow proper procedures when lighting direct-fired heater. Lighting procedure stickers are available from your Compliance director.
9. Flame arresters should be properly maintained and inspection port covers keep in place.
10. When transferring hydrocarbon (especially "flashing" liquids) from a line or vessel to another container, the source container and the receiving container should be electrically bonded to prevent ignition due to static electricity.

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## I. PURPOSE

This written Hazard Communication Plan covers the requirements of OSHA's Hazard Communication Standard. Our Company is committed to administering legally and morally correct actions to protect its employees, contractors, the surrounding communities and the environment from exposure to chemical and/or hazardous substances.

## II. SCOPE

To ensure that information about the dangers of hazardous chemicals used at our locations is known by all affected employees, the following hazard information program has been established. Under this program, you will be informed of the contents of OSHA's hazard communication standard, the hazardous properties of chemicals with which you work, safe handling procedures, and measures to take to protect yourself from these chemicals.

## III. APPLICABILITY

This program applies to all work operations in our company where you may be exposed to hazardous chemicals under normal working conditions or during an emergency situation. All work units of this company will participate in the hazard communication program. Copies of the program are available in the main office for review by any interested employee.

Our Safety Representative is the program coordinator who has overall responsibility for the program. He will review and update the program, as necessary. Copies of the written program may be obtained from him at the main office.

## IV. REFERENCE

29 CFR 1910.1200, *Hazard Communication*  
CCR Title 8, Section 5194, *Control of Hazardous Substances*

## V. DEFINITIONS

**Hazardous Chemical:** means any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

**Health Hazard:** means a chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard.

**Globally Harmonized System (GHS):** is an internationally agreed-upon system for labeling, created by the United Nations. It is designed to replace the various classification and labeling standards used in different countries by using consistent criteria for classification and labeling on a global level.

**Label:** means an appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

**Physical Hazard:** means a chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas.

**Safety Data Sheet (SDS):** Formally known as Material Safety Data Sheet (MSDS); means written or printed material concerning a hazardous chemical that is prepared in accordance with the regulation.

## VI. RESPONSIBILITIES

**Management** is responsible to ensure adequate resources are dedicated to provide for compliance with the standard.

**Employees** must review this written hazard communication plan and:

- Follow all safety instructions provided by this plan and by your supervisor
- Complete hazard communication training and pass the test
- Obtain an SDS for any new chemical to be tested or purchased
- Forward new SDSs to the Safety Representative to facilitate updating SDS binders.
- Label containers that are used for the transfer of chemicals (secondary or portable containers)
- Read Safe Use Guide information and chemical labels prior to working with a chemical
- Always wear personnel protective equipment specific to each chemical

## VII. EMPLOYEE RIGHTS

Under the law, the hazard communication program also establishes rights for employees:

1. You have the right to personally receive information regarding hazardous substances to which you may be exposed.
2. You have the right for your physician or collective bargaining agent to receive information regarding hazardous substances to which you may be exposed.

**GENERAL SAFETY POLICIES****Section: 5.05 Hazard Communication Program****Revision Number: 1****Revision Date: 7/08/2015****File Name: P505**

3. You may exercise your rights under the provisions of the Occupational Safety and Health Act (OSHA) without concern for any discharge or discrimination.
4. This written hazard communication program is available for you to read at any time mutually acceptable between employer and employee.
5. You have the right to refuse to work with a toxic substance if you have not been provided with SDS information within the prescribed time limits.
6. You may petition OSHA to have any chemical or substance added, removed or modified on the OSHA toxic substance list.
7. You may request a copy of an SDS for a material to which you may be exposed.

**VIII. GENERAL REQUIREMENTS**

1. Employees shall be provided with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training shall be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.
2. A written hazard communication program (this program) shall be developed, implemented, and maintained at each workplace that describes how labels and other forms of warning, safety data sheets, and employee information will be met.
3. A list of the hazardous chemicals known to be present at each location must be maintained, using an identity that is referenced on the appropriate SDS.
4. When you are required to perform hazardous non-routine tasks (e.g., cleaning tanks, entering confined spaces, etc.), special training will be provided in order to inform you regarding the hazardous chemicals to which you might be exposed and the proper precautions to take to reduce or avoid exposure.
5. Site specific programs shall have specific methods for providing information concerning hazardous chemicals at job sites, methods of providing SDS sheets, methods of precautionary measures to be taken and methods of providing information on labeling systems. Where employees must travel between work places during a work shift (multi job sites), the written program may be kept at a primary job site. If there is no primary, then the program should be sent with employees.
6. Container labels shall contain the following information: Identity of hazardous chemicals, appropriate hazard warnings and name and address of the chemical manufacturer, importer or other responsible party.
7. Waste material, waste water or solid wastes shall not be placed in totes.
8. Chemical manufacturers are responsible for developing SDSs. The Company shall have a SDS for each chemical used.

**GENERAL SAFETY POLICIES**

Section: 5.05 Hazard Communication Program

Revision Number: 1

Revision Date: 6/20/2013

File Name: P505

9. SDSs shall be maintained and readily accessible in each work area. SDSs can be maintained at the primary work site. However, they must be available in case of an emergency. SDS must be made available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director.

**IX. LIST OF HAZARDOUS CHEMICALS**

Our Safety Representative will make a list of all hazardous chemicals used at each location, and will update the list as necessary. Our list of chemicals identifies all of the chemicals used in our work areas. It identifies the corresponding SDS for each chemical by using the *same* name as that used on the corresponding SDS. For example, if the label says "DYCOTE 8" on the container, any time you want to know more about it, go to the SDS listed under the name "DYCOTE 8". The labels of all containers shipped to us from outside will also contain the name and address of the chemical manufacturer who can be contacted if additional information is desired.

**X. PROPOSITION 65 LISTED CHEMICALS**

The Safe Drinking Water and Toxic Enforcement Act of 1986 requires that the Governor revise and republish at least once per year the list of chemicals known to the State to cause cancer or reproductive toxicity. The following chemicals are known to be on the proposition 65 list and may be present at any job site.

Location	Chemical	Prop65
Field	Diesel #2 (diesel exhaust is prop 65 listed)	Cancer
Field	Gasoline Unleaded (vapors are prop 65 listed)	Cancer
Field	Paints	Cancer
Field	Solvents	Cancer
Field	Thinners	Cancer
Field	Select Process Chemicals	Cancer

**GENERAL SAFETY POLICIES**

Section: 5.05 Hazard Communication Program

Revision Number: 1

Revision Date: 7/08/2015

File Name: P505

**XI. HAZARDOUS CHEMICAL COMMONLY FOUND ON THE HAZARDOUS MATERIALS INVENTORY IN CERS.**

ACETONE	CUTTING OIL
ACETYLENE GAS	DE-EMULSIFIER FOR OIL
ADHESIVES	DIESEL GAS, DIESEL OIL
AGGREGATE	DRYWALL
ALUMINUM ETCHING AGENT	ENAMEL
AMMONIA	ETHYL ALCOHOL
ANTI-FREEZE	EXPLOSIVES
ARSENIC COMPOUNDS	ETCHING AGENTS
ASBESTOS	FIBERGLASS
ASPHALT (PETROLEUM)	FOAM INSULATION
BENZENE (and derivatives)	FORM OILS
BLEACHING AGENTS	FREON 20, R20 (AND OTHERS)
CARBON BLACK	GALVANIZED JUNCTION BOXES
CARBON MONOXIDE (IN CYLINDERS)	OUTLETS, SWITCHES
CAULKING, SEALANT AGENTS	GASOLINE (PETROL, ETHYL)
CAUSTIC SODA (SODIUM HYDROXIDE)	GLUES
CEMENT	GRAPHITES
CHROMATE SALTS	GREASES
CHROMIUM	GROUTS
CLEANERS	GYPSON (CALCIUM SULFATE)
COAL TAR PITCH	HELIUM (IN CYLINDERS)
COATINGS (BRUSH OR SPRAY)	HYDRAULIC BRAKE FLUID
COBALT	HYDRAULIC ACID
CONCRETE CURING COMPOUNDS	INKS
CREOSOL	INSULATION
KEROSENE	IRON
LEAD	PHOTOGRAVURE INK (COPY
LIME	MACHINES)
LIMESTONE	PIPE
LUBRICATING OILS	PIPE THREADING OIL
LYE (SODIUM HYDROXIDE)	PLASTICS
SODIUM HYDROXIDE)	POLISHES
MAGNESIUM	PROPANOL
MASONRY MATERIALS	PUTTY
METAL CONDUIT	PVC-PIPE CEMENT
METALS	ROOFING FELTS
METHANOL (METHYL ALCOHOL)	SEALERS
METHYL ETHYL KETONE	SOLDER, FLUX
(2-BUTANONE)	SOLVENTS
MORTAR	SOLDER, SOFT (LEAD, TIN)
MOTOR OIL ADDITIVES	SULFURIC ACID
MURIATIC ACID	THINNER, PAINT/LACQUER
NAPHTHA (COAL TAR)	TIN
NITROGLYCERIN DIOXIDE (IN	TRANSITE
CYLINDERS)	TURPENTINE, GUM SPIRIT
OXYGEN (IN CYLINDERS)	VARNISHES
PAINT REMOVER	WAXES
PAINT STRIPPER	WOOD ALCOHOL (METHANOL)
PAINTS	WOOD DUST

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## **XII. SAFETY DATA SHEETS**

SDS's provide specific information on the chemicals in use. Our Safety Representative will maintain a binder in his office with an SDS on every hazardous chemical on our premises. Each SDS will be a fully completed OSHA Form 174 or the equivalent and maintained as appropriate.

The Safety Representative will also make sure that each work site maintains an SDS for the hazardous chemicals in that area at a place where it is readily available to employees while they are at work. If you do not know where they are located, ask your supervisor.

Our Safety Representative is responsible for acquiring and updating SDS's. He will contact the chemical manufacturer or vendor if additional information is necessary or if an SDS has not been supplied with an initial shipment. All new procurements for the company must be cleared by the Safety Representative.

These Safety Data Sheets contain the following information about the chemicals in your workplace and will be IN compliance with the GHS requirements.

- Section 1. Identification
- Section 2. Hazard(s) identification
- Section 3. Composition/information on ingredients
- Section 4. First-Aid measures
- Section 5. Fire-fighting measures
- Section 6. Accidental release measures
- Section 7. Handling and storage
- Section 8. Exposure controls/personal protection
- Section 9. Physical and chemical properties
- Section 10. Stability and reactivity
- Section 11. Toxicological information
- Section 12. Ecological information
- Section 13. Disposal considerations
- Section 14. Transport information
- Section 15. Regulatory information
- Section 16. Other information, including date of preparation or last revision

## **XIII. LABELS AND OTHER FORMS OF WARNING**

Our Safety Representative will also ensure that all hazardous chemicals on work sites are properly labeled and updated, as necessary. The labels list at least the chemical identity, appropriate hazard warnings, and the name and address of the manufacturer, importer or other responsible party.

Container labels must contain the following information: Identity of hazardous chemicals, appropriate hazard warnings and name and address of the chemical manufacturer, importer or other responsible party. Company and/or employees shall not remove or deface labels on incoming containers of hazardous chemicals. This policy applies to all chemical containers including drums, totes, carboys, gas cylinders, buckets, pails and bags.

Containers of products that include any hazardous chemical that is shipped *from* our location will be checked by the Safety Representative or a person assigned to that responsibility, in order to make sure all containers are properly labeled.

If there are a number of stationary containers *within* a work area that have similar contents and hazards, each of them need not be labeled. However, signs will be posted to convey the needed hazard information.

On our stationary process equipment, we may sometimes substitute regular process sheets, batch tickets, blend tickets, and similar written materials for container labels—but they will contain the same information as labels. If used, those written materials will be readily available to you during your work shift.

If you transfer chemicals from a labeled container to a portable container that is intended only for your immediate use, no labels are required on the portable container.










Pipes or piping systems do not have to be labeled but their contents will be described in the training sessions. If you ever have any questions about pipes or their contents, ask your supervisor.

#### XIV. PICTOGRAMS AND HAZARDS

Workplace chemical containers are labeled by the chemical manufacturer when received. Under OSHA's HAZCOM GHS standard, labels need to include the following:

- ✓ **Pictogram:** a symbol plus other graphic elements, such as a border, background pattern, or color that is intended to convey specific information about the hazards of a chemical. Each pictogram consists of a different symbol on a white background within a red square frame set on a point (i.e. a red diamond). There are nine pictograms under the GHS.
- ✓ **Signal words:** a single word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for less severe hazards.
- ✓ **Hazard Statement:** a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
- ✓ **Precautionary Statement:** a phrase that describes recommended measures to be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling of a hazardous chemical.

## Pictograms and Hazards

Health Hazard 	Flame 	Exclamation Mark 
<ul style="list-style-type: none"> <li>• Carcinogen</li> <li>• Mutagenicity</li> <li>• Reproductive Toxicity</li> <li>• Respiratory Sensitizer</li> <li>• Target Organ Toxicity</li> <li>• Aspiration Toxicity</li> </ul>	<ul style="list-style-type: none"> <li>• Flammables</li> <li>• Pyrophorics</li> <li>• Self-Heating</li> <li>• Emits Flammable Gas</li> <li>• Self-Reactives</li> <li>• Organic Peroxides</li> </ul>	<ul style="list-style-type: none"> <li>• Irritant (skin and eye)</li> <li>• Skin Sensitizer</li> <li>• Acute Toxicity (harmful)</li> <li>• Narcotic Effects</li> <li>• Respiratory Tract Irritant</li> <li>• Hazardous to Ozone Layer (Non Mandatory)</li> </ul>
Gas Cylinder 	Corrosion 	Exploding Bomb 
<ul style="list-style-type: none"> <li>• Gases under Pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Skin Corrosion/ burns</li> <li>• Eye Damage</li> <li>• Corrosive to Metals</li> </ul>	<ul style="list-style-type: none"> <li>• Explosives</li> <li>• Self-Reactives</li> <li>• Organic Peroxides</li> </ul>
Flame over Circle 	Environment (Non Mandatory) 	Skull and Crossbones 
<ul style="list-style-type: none"> <li>• Oxidizers</li> </ul>	<ul style="list-style-type: none"> <li>• Aquatic Toxicity</li> </ul>	<ul style="list-style-type: none"> <li>• Acute Toxicity (fatal or toxic)</li> </ul>

### XV. NON-ROUTINE TASKS

When you are required to perform hazardous non-routine tasks (e.g., cleaning tanks, entering confined spaces, etc.), special training will be provided in order to inform you regarding the hazardous chemicals to which you might be exposed and the proper precautions to take to reduce or avoid exposure.

### XVI. TRAINING

Everyone who works with or is potentially exposed to hazardous chemicals will receive initial training from the Safety Representative (or his designee) on the hazard communication standard and the safe use of those hazardous chemicals to which you may be exposed.

A program that uses both audiovisual materials, classroom-type training, and/or on-the-job training has been prepared for this purpose. The training program may vary among workers but every worker will be trained in the OSHA hazard communication standard and all chemicals to which he or she may be exposed while at work.

Whenever a new hazard is introduced, additional training will be provided as appropriate. Regular safety meetings may also be used to review the information presented in the initial training. Site supervisors will be extensively trained regarding hazards and appropriate protective measures so they will be available to answer questions from employees and provide daily monitoring of safe work practices. If you

are ever unsure about what you should do or uncertain about the consequences of any action you plan to take, *DON'T ACT. Ask your supervisor beforehand!*

The training plan will emphasize these items:

- Summary of the standard and this written program.
- Chemical and physical properties of hazardous materials (e.g., flash point, reactivity) and methods that can be used to detect the presence or release of chemicals (including chemicals in unlabeled pipes).
- Physical hazards of chemicals (e.g., potential for fire, explosion, etc.).
- Health hazards, including signs and symptoms of exposure, associated with exposure to chemicals and any medical condition known to be aggravated by exposure to the chemical.
- Procedures to protect against hazards (e.g., personal protective equipment required, proper use, and maintenance; work practices or methods to assure proper use and handling of chemicals; and procedures for emergency response).
- Work procedures to follow to assure protection when cleaning hazardous chemical spills and leaks.
- Where SDS's are located, how to read and interpret the information on both labels and SDS's, and how employees may obtain additional hazard information.

The Safety Representative or designee will regularly review our employee training program and advise management on training or retraining needs. As part of the assessment of the training program, he or she may want to obtain input from employees regarding the training they have received, and their suggestions for improving it. If you have any suggestions, give them to your supervisor. He or she will see to it that they are provided to the appropriate party.

Retraining is required when the hazard changes or when a new hazard is introduced into the workplace. It is also company policy to provide training whenever it is needed to whoever needs it. If you do not think you are fully or properly trained, or if you ever feel you need additional training in any aspect of your job or your work environment, report that to your supervisor *immediately!*

## **XVII. SUBCONTRACTORS AND MULTI-EMPLOYER SITES**

Upon notification by the responsible supervisor, our Safety Representative or a person specifically designated for the purpose will provide outside contractors with notice of any chemical hazards that may be encountered in the normal course of their work on the

premises, the labeling system in use, the protective measures to be taken, the safe handling procedures to be used, and the location and availability of SDS's. Each contractor bringing chemicals on-site must provide us with the appropriate hazard information on those substances, including the labels used and the precautionary measures to be taken in working with those chemicals.

#### **XVIII. ADDITIONAL INFORMATION**

All employees, or their designated representatives, can obtain further information on this written program, the hazard communication standard, applicable SDS's, chemical information lists and any other safety or health matter that may interest or concern them at our main office.

**Non-English speaking employees'** information shall be presented in their native language. Labels shall be legible and in English.

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## **I. PURPOSE**

The company shall institute a hearing conservation program to include training and medical surveillance when employees are exposed to sound levels greater than 90 dba on an 8-hour time-weighted average basis. The training shall be repeated annually for each employee. Training shall be updated consistent to changes in PPE and work processes. The company shall make available to affected employees and the Assistant Secretary copies of the noise exposure procedures and shall also post a copy in the workplace.

## **II.SCOPE**

When employees are subject to sound levels exceeding permissible exposure limits, feasible administrative and or engineering controls shall be utilized. If such controls fail to reduce sound levels below acceptability, than personal protective equipment is required to reduce sound levels within the acceptable range.

## **III.REFERENCES**

29 CFR 1910.95, Occupational Noise Exposure  
29 CFR 1926.52, Occupational Noise Exposure  
CCR Title 8, Section 5095, Occupational Noise

## **IV.DEFINITIONS**

- dBA (decibel on "A" weighted scale) - Standard unit of sound pressure measurement.
- TWA (Time Weighted Average) - Exposure averaged out over a certain period, usually 8 hours.
- Standard Threshold Shifts (STS) - A hearing threshold exceeding 25 dBA at any of the test frequencies of 500, 1000, 3000, 4000, or 6000 Hz in either ear.

## **V.GENERAL REQUIREMENTS**

1. A training program shall be provided for all employees who are exposed to action level noise. The training shall be repeated annually for each employee. Training shall be updated consistent to changes in PPE and work processes. The company shall make available to affected employees copies of the noise exposure procedures and shall also post a copy in the workplace. The company shall also allow the Assistant Secretary and the Director access to records.

2. A continuing effective hearing conservation program shall be administered when employees are exposed to sound levels greater than 85 dbA on an 8 hour time-weighted average basis.
3. When information indicates that employee exposure may equal/exceed the 8 hr time-weighted avg. of 85 decibels, a monitoring program shall be implemented to identify employees to be included in the hearing conservation program
4. An audiometric testing program will be established and maintained by making audiometric testing available to all employees whose exposures equal or exceed an 8-hr. time-weighted avg. 85 decibels.
5. Within 6 months of an employee's first exposure at or above the action level, a valid baseline audiogram shall be established against which future audiograms can be compared. When a mobile van is used, the baseline shall be established within 1 yr.
6. Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement. Employees shall also be notified to avoid high levels of noise.
7. At least annually after obtaining the baseline audiogram, the employer shall obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels. Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed of this fact in writing, within 21 days of the determination.
8. If a threshold shift has occurred, use of hearing protection shall be re-evaluated and/or refitted and if necessary a medical evaluation may be required.
9. Hearing protectors are available to all employees exposed to an 8-hr. time-weighted average of 85 decibels at no cost to the employee This is done at no cost to employee. Hearing protection shall be replaced as necessary. Employers shall ensure that hearing protectors are worn. Employees shall be properly trained in the use, care and fitting of protectors.
10. The company shall evaluate hearing protection for the specific noise environments in which the protector will be used.
11. Accurate records of all employee exposure and audiometric measurements shall be maintained as required by the regulation.

## **VI. NOISE LEVEL SURVEYS**

- Noise level surveys shall be conducted by qualified personnel at all work locations where employees may be exposed to noise in excess of the required action level of 85 dBA.
- Surveys shall be conducted as needed or within 60 days when warranted by significant process, work procedure, or engineering control changes which affect the workers' noise exposure.
- Any area with noise levels greater than 85 dBA shall be designated a noise hazard area and posted with signs requiring Hearing Protection.
- No person shall enter without wearing suitable personnel hearing protection, capable of reducing exposure to a level below 85 dBA.
- Affected employees or their representatives shall be given the opportunity to witness any noise survey conducted in their work area if they wish to do so.

### **PERMISSIBLE NOISE EXPOSURES**

<u>Duration per Day</u> <u>Hour</u>	<u>Sound Level</u> <u>dba Slow Response</u>
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

## **VII. HEARING CONSERVATION PARTICIPANTS**

- Any employee with a TWA equal to or greater than 85 dBA shall be notified and enrolled in the Hearing Conservation Program.
- Within six months of employees' first exposure at or above an 8-hour TWA of 85 dBA, a baseline audiogram.

- All employees included in the Hearing Conservation Program are required to have their hearing tested on an annual basis after obtaining their baseline audiogram.
- Audiometric testing will be conducted only by Company-approved clinics, physicians or mobile vans.
- Employees shall avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination

### **VIII. HEARING PROTECTION**

- Hearing protection shall be provided at no charge to all employees included in the Hearing Conservation Program. Employees shall be given a choice of several types of hearing protection.
- Supervisors shall ensure hearing protection is worn by all personnel when working:
  1. In posted areas (entrance to a periphery of areas greater than or equal to 85 dBA).
  2. Around other noise exposure areas as required.
- Hearing protection must attenuate exposure to a TWA less than 85 dBA.

### **IX. TRAINING**

- All employees who are included in the Hearing Conservation Program shall be trained on an annual basis. Subjects covered include:
  1. Effects of noise on hearing,
  2. Purpose of hearing protectors, advantages, disadvantages, and attenuation of various types,
  3. Instructions on selection, fitting, use and care; and
  4. Purpose of audiometric testing and an explanation of testing procedures.

### **X. MEDICAL EVALUATIONS**

- A Licensed Health Care Provider (audiologist, otolaryngologist or physician) will conduct and review all audiometric tests and results.
- If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed of this fact, in writing, within 21 days of the determination.

## **XI. STANDARD THRESHOLD SHIFT (STS)**

- Management will ensure that any employee identified as experiencing an STS will be informed by sealed letter within two weeks of receipt of the summary report from the Licensed Health Care Provider.
- Supervisors shall ensure that employees experiencing a STS wear approved hearing protection when exposed to noise greater than or equal to 85 dBA.
- Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. This comparison may be done by a technician.
- If the annual audiogram shows that an employee has suffered a standard threshold shift, the employer may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.
- Upon receiving notification that a STS has been experienced, the employee's Supervisor will:
  1. Communicate that hearing protectors are to be worn at all times when the noise exposure is greater than or equal to 85 dBA,
  2. Ensure employee is trained or retrained in the use and care of hearing protectors, and
  3. Will supply hearing protectors offering greater attenuation if necessary to those already wearing hearing protection.

## **XII. RECORDING WORK RELATED INJURIES**

- Basic recording criterion: Employers must record work-related "Standard Threshold Shift", or STS (an average change of 10 dB at 2000, 3000, and 4000 Hz in either ear, compared to baseline; age-adjustments allowed) provided that the employee's average hearing level at the same frequencies in the same ear is 25 dB HL or greater (an average hearing level of 25 dB or more, regardless of employee's age, i.e., no age adjustment allowed).
- Baseline/reference audiogram: To determine whether a STS has occurred, the employer must compare the current hearing test results to the employee's baseline audiogram. The baseline audiogram is the employee's original audiogram or revised audiogram as defined under OSHA's noise standard 29 CFR 1910.95.
- Reconfirmation of STS: If the annual audiogram shows a STS, a hearing retest may be performed within 30 days. If the retest does not confirm the STS, then the case need not be recorded. However, if the retest confirms the STS, then the

STS if work-related, must be recorded within 7 calendar days of retest. If a retest is not performed, then the case (again, if work-related) must be recorded within 37 days of test.

- Results of subsequent testing: If later testing performed as part of the hearing conservation program indicates that the STS is not persistent, then the employer may erase or line-out the recorded entry.
- Determination of work-relatedness: Work-relatedness must be determined according to specifications of section 1904.5 of the general recordkeeping rule. If an event/exposure in the workplace caused or contributed to the shift in hearing or "significantly aggravated" a previously existing hearing loss, then the STS is recordable.
- Forms: Use OSHA record keeping Form 300. Beginning January 1, 2004, employers have been required to record hearing loss cases in a separate column. In 2003, employers should record cases of occupational hearing loss as an "injury" (single event acoustic trauma) or "other illness" (long term noise exposure), as appropriate.
- Applicable industries: Certain industries are not covered under the general hearing conservation amendment 1910.95 (construction, agriculture, oil and gas drilling, etc.), but are included under 1904. If such employers choose to conduct audiometric testing programs, then the hearing loss recordability provisions of the rule will apply.

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## I. PURPOSE

This standard establishes necessary precautions to be taken when employees may be exposed to Hydrogen Sulfide (H<sub>2</sub>S) gas. Compliance with this program is mandatory and is applicable to all company employees who work in an environment where Hydrogen Sulfide may be present.

## II. SCOPE

Extreme hazards can be encountered when exposure to Hydrogen Sulfide is possible. All employees that work in areas that have, or could have Hydrogen Sulfide exposure must be educated in its hazards, trained to detect Hydrogen Sulfide and utilize appropriate personal protective equipment to minimize their exposure.

## III. REFERENCE

- 29 CFR 1910.1000, Subpart Z, *Toxic and Hazardous Substances*
- API RP-55, *Oil and Gas Producing and Processing Plant Operations Involving Hydrogen Sulfide*
- Title 8 CCR, Chapter 4, Subchapter 14, *Toxic and Hazardous Substances*

## IV. DEFINITIONS

*Hydrogen Sulfide (H<sub>2</sub>S)*: Colorless gas or liquid, with the odor of rotten eggs (sulfur smell).

*Permissible Exposure Limit (PEL)*: means the dermal or inhalation exposure limit. It is based on a time-weighted average concentration for an eight-hour work day, or forty-hour work week. **For Hydrogen Sulfide the PEL is 10 PPM.**

*Self Contained Breathing Apparatus (SCBA)*: Each time "SCBA" is used within this plan it refers to the 30-minute positive pressure self contained breathing apparatus units.

*Short Term Exposure Limit (STEL)*: means the dermal or inhalation exposure limit. It is based on a time-weighted average concentration for fifteen minutes. **For Hydrogen Sulfide the STEL is 15 PPM.**

*Immediately Dangerous to Life and Health (IDLH)*: **The IDLH for Hydrogen Sulfide is 100 PPM.**

## **V. INTRODUCTION**

Exposure to Hydrogen Sulfide occurs in many industries, however most exposures center around the oil and natural gas industries. Hydrogen sulfide is an extremely toxic, flammable gas that may be encountered in the production of oil and gas with high-sulfide content. Hydrogen sulfide may also be encountered in associated processes and/or produce and potable water.

Hydrogen sulfide is heavier than air, and can collect in low places. As an employee of the company, potential exposure to various forms and amounts of Hydrogen Sulfide may occur during certain job activities. However, any exposure should be avoided. If an exposure cannot be avoided through ventilation, etc., proper personnel protective equipment must be used.

## **VI. GENERAL REQUIREMENTS**

1. Locations where you may encounter Hydrogen Sulfide:
  - Drilling Operations,
  - Recycled Drilling Mud,
  - Water from sour crude wells,
  - During Blowouts
  - Tank Gauging (tanks at producing, pipeline & refining operations)
  - Field Maintenance, and
  - Tank batteries and wells,
  - Others.
2. Hydrogen Sulfide Characteristics:
  - Highly toxic, invisible and colorless
  - Smells like rotten Eggs (low concentrations)
  - At higher concentrations will paralyze your sense of smell
  - Heavier than air, so collects in low-lying areas
  - Can spontaneously combust between 43,000 and 460,000 ppm
  - Flammable
  - When burned it produces SO<sub>2</sub>, a toxic byproduct, also a deadly gas
  - Soluble in water, oils and most organics
  - Creates an acidic solution and can severely irritate your skin
  - Reacts violently to strong oxidizers, metal oxides, peroxides, and strong alkalis,
  - active metals, and some plastics and rubbers
  - Corrosive, forms spontaneously ignitable by-product "iron sulfide"

3. Health effects due to the exposure of hydrogen sulfide include: eye irritations and effects to the nerve centers of the brain which control breathing.

Below 100 ppm you will experience:

- Rotten egg smell
- Burning eyes
- Respiratory tract irritation

Prolonged exposure up to 100 ppm will cause:

- Loss of smell
- Headache
- Dizziness
- Coughing

From 100-300 ppm, in addition to previous, side effects will include:

- Drowsiness
- Severe eye and throat irritation
- Effects nerve centers of the brain which control breathing
- Possible pulmonary edema (respiratory difficulty due to fluid in lungs)

Exposure of up to 600 ppm will cause:

- Loss of reasoning and balance
- Eventual unconsciousness
- Possible death

4. Methods of Detecting Hydrogen Sulfide:

- By smell (odor) only momentarily because higher concentrations deaden your sense of smell.
- By chemically treated paper or detector tubes that change color when exposed to hydrogen sulfide
- By electronic monitoring devices (fixed or portable monitors)

Alarms will go off when concentrations exceed 10 PPM.

5. Only approved positive-pressure self-contained breathing apparatus or airline respirators with escape SCBA may be used in hydrogen sulfide environments.
6. Employees must be aware of site specific contingency/emergency plans and the provision therein. Any facility that generates more than 20 ppm hydrogen sulfide in the breathing atmosphere must have a site specific contingency plan.

## **VII. FORMS OF HYDROGEN SULFIDE EXPOSURE**

Hydrogen Sulfide exposures are almost exclusively through inhalation. However, other exposures such as eye and skin exposures should not be overlooked. Inhalation of Hydrogen Sulfide at high concentrations will certainly cause injury or death.

## **VIII. HEALTH EFFECTS OF HYDROGEN SULFIDE OVEREXPOSURE**

If steps are not taken to control exposure, inhalation of Hydrogen Sulfide will result in serious injury or death. Hydrogen sulfide is extremely toxic. It may cause death instantaneously in high airborne concentrations. Low levels are extremely irritating to the lungs, nose, throat and eyes.

### **Low concentration exposures (under 10 PPM)**

In low concentrations, Hydrogen Sulfide may be detectable by its odor; however, the smell cannot be relied upon to forewarn of dangerous concentrations because it rapidly paralyzes the sense of smell. A prolonged exposure to the lower concentrations will result in the loss of the sense of smell.

Symptoms from repeated exposure to low concentrations usually disappear after being removed from the exposure for a period of time.

### **Higher concentration exposures (10 PPM and above)**

Concentrations that are prolonged or of high levels may lead to death. It should be well understood that the sense of smell will be rendered ineffective by Hydrogen Sulfide, which can result in an individual failing to recognize the presence of dangerously high concentrations. Exposure to Hydrogen Sulfide causes death by poisoning the respiratory system.

### Physiological Effects of Hydrogen Sulfide

H <sub>2</sub> S CONCENTRATION		EFFECTS OF EXPOSURE
0.001	10	Safe for 8 hours without respirator. Obvious and unpleasant odor. Threshold Limit Value (TLV).
0.0015	15	Safe for 15 minutes without respirator. Current OSHA Short Term Exposure Limit (STEL).
0.01	100	Kills sense of smell in 3 to 15 minutes; may sting eyes and throat. Immediately dangerous to life health (IDLH). This concentration represents a maximum level from which one could escape without any irreversible health effects.
0.05	500	Dizziness; breathing stops in a few minutes; need prompt artificial respiration.
0.07	700	Unconscious quickly; death will result if not rescued promptly.
0.10	1000	Unconscious at once; followed by death within minutes.

Note: Irreparable brain damage begins in about the fifth minute of no breathing.

### IX. REPORTING OF PROBLEMS

Immediately notify your supervisor if you develop potential signs or symptoms associated with Hydrogen Sulfide exposure. You should also notify your supervisor if you have difficulty breathing while wearing a respirator or suspect problems with other personal protective equipment.

### X. EXPOSURE ASSESSMENT

Site supervisors must determine if employees are exposed to concentrations of Hydrogen Sulfide. The exposure determination shall be based on the following:

#### Personal exposure monitoring

If the initial exposure determination reveals employee exposure to be below the STEL, continuous monitoring may be warranted. In addition, continuous ventilation may be needed, if personnel need access to the area. Appropriate personnel protective equipment will be worn by all employees with the potential to be exposed to Hydrogen Sulfide in excess of permissible exposure limits.

## **XI. PREVENTING EXPOSURE**

Proper control of exposure to Hydrogen Sulfide is the responsibility of both the employer and the employee. All of the control methods discussed below are essential to minimize additional sources of Hydrogen Sulfide absorption from inhalation. Strict compliance with these provisions can virtually eliminate exposures to Hydrogen Sulfide gas.

- Review the site specific safety programs as well as the site emergency action plan.
- Ventilation systems may provide for venting of the Hydrogen Sulfide vapor prior to entrance into the area.
- Confined Space Entry Procedures will greatly reduce the hazards to employees and must be followed whenever entry into a confined space is required. For further details, review the Company Confined Space Entry program.
- Respiratory Protection shall be used in combination with continuous monitoring when warranted by the conditions of the area.

## **XII. RESPIRATORY PROTECTION**

Exposure to hazardous materials requires special precautions against absorption of toxic compounds. While engineering controls (e.g. ventilation systems) are the primary means of controlling materials such as Hydrogen Sulfide vapors, it is often necessary to rely on respiratory protection.

All personnel who could reasonably be expected to wear a respirator must comply with the Company facial hair policy which states that no facial hair is allowed that would obstruct the facial seal of a respiratory protection device.

- Only use a NIOSH certified positive-pressure air supplying respirator in a Hydrogen Sulfide environment.
- Never use a cartridge type respirator in a Hydrogen Sulfide environment, nor atmosphere containing less than 19.5% oxygen or an atmosphere immediately dangerous to life and health (IDLH).
- If a Self-Contained Breathing Apparatus (SCBA) is to be worn, all provisions applicable to the use of respirators apply as well as the provisions of the Company Respiratory protection program.
- Gas detection equipment shall be used whenever an entry into an area which may contain Hydrogen Sulfide gas is necessary.
- Equipment shall be operated per the manufacturer's instructions.
- Detection equipment shall be calibrated prior to use and on a schedule per the manufacturer's instructions.
- Continuous monitoring shall be used when Hydrogen Sulfide has been detected.

### **XIII. EMPLOYEE INFORMATION & TRAINING**

Annual training, per API RP 55, must be conducted per the Company safety training plan. Information and training will be given to all employees who may be exposed to Hydrogen Sulfide.

The training program will inform employees of the following:

- The characteristics, possible sources, and hazards of Hydrogen Sulfide
- Proper use of the Hydrogen Sulfide detection methods
- Recognition of, and proper response to, Hydrogen Sulfide warnings
- Symptoms of Hydrogen Sulfide exposure
- Proper rescue techniques and first-aid procedures to be used in a Hydrogen Sulfide exposure
- Proper use and maintenance of personal protective equipment. Demonstrated proficiency in using PPE should be required
- Wind direction awareness
- Use of safety equipment
- Use and operation of all Hydrogen Sulfide monitoring systems
- corrective action

Information and training will be given to all employees Company and Contractors who may be exposed to Hydrogen Sulfide. The training program will inform employees of the following:

- Emergency response procedures and shutdown procedures
- Locations of safety equipment
- Confined space and enclosed facility entry procedures
- Routes of egress
- Worker awareness and understanding of workplace practices and maintenance procedures to protect personnel from exposure to Hydrogen Sulfide
- Potential sources of Hydrogen Sulfide
- Documentation of employee information and training is kept on file at the main office

### **XIV. RECORD KEEPING**

The following records will be kept on file at the main office, if applicable:

- Exposure monitoring for airborne Hydrogen Sulfide
- Name and job classification of employees measured
- Details of the sampling and analytic techniques
- Results of the sampling
- Type of respiratory equipment worn

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## **I. SCOPE**

This policy defines NORM, briefly outlines how it can occur in oilfield production, gas processing, and in the delivery and transport of propane. It further discusses health hazards and how they can be minimized through monitoring, safe work guidelines, and handling of contaminated wasters.

Low level radioactive scale can be produced in the course of some oil and gas operations. The production of oil and gas moves NORM to the surface where it may accumulate at low levels in processing and transport equipment. Some of the possible locations are wellheads, piping, vessels, tubing, filters and pipe cleaning and storage yards.

## **II. RESPONSIBILITIES**

Our Compliance director, has primary authority and responsibility to ensure company implementation of the NORM management system and to ensure the health and safety of company personnel, subcontractors and customers. This is accomplished by communicating the company's emphasis on health and safety, verifying work locations are free of NORM and analyzing safe work practices to ensure procedures are followed to eliminate potential exposure.

## **III. WHERE IS NORM FOUND?**

NORM is found throughout the natural environment, in man-made materials such as building materials and fertilizer and in the following crude oil and natural gas operations:

### ***Oil and Gas Production***

NORM originating in geological oil and gas formations is usually brought to the surface in produced water. As the water approaches the surface, temperature changes cause radioactive elements to precipitate. Resulting scales and sludge may collect in water separation systems. Radium is usually found in this type of NORM contamination.

### ***Gas Processing***

Radon gas brought to the surface will enter the gas production stream. As it decays, thin radioactive lead films may form on the inner surfaces of gas processing equipment. In sales gas, the radon concentrations are identical in the inlet and outlet gas and are generally low. It has been found that the propane and LPG production process generally concentrates radon and this is where the NORM hazard potential may be the greatest.

**Transport and Delivery of Propane and LPG**

Propane transport equipment may be contaminated with NORM. This includes pipelines, rail cars and truck tanks. Even if the production site does not concentrate significant amounts of radon, loading contaminated transport tanks that vent into the facility may contaminate the loading facilities. NORM is not usually present in refining operations as oil production removes NORM contaminated water before delivery to the refinery. Propane produced at refineries is usually from NORM-free crude oil so the hazard from NORM is very slight.

**IV. HEALTH HAZARDS OF NORM**

Radium, radon, and their decay products are radioactive elements of concern in petroleum production and gas processing. Human exposure may occur when contaminated dusts and sludge are inhaled or ingested (internal exposure) or when gamma radiation from surrounding equipment strikes the body (external exposure). The amount of gamma radiation able to penetrate processing equipment is generally not large enough to present a health risk to employees although exceptions have been found.

Radium is found in most oil and gas fields in the world in varying concentrations. There is a potential to find radium in significant amounts in almost all types of equipment.

Radon is found in most natural gas deposits in the world. Radon is an inert, colorless and odorless gas. Radon itself does not present a health hazard because it is not easily absorbed into the body and is quickly cleared when absorbed.

Radon's radioactive breakdown products, called radon daughters, may be hazardous. Radon naturally breaks down into radioactive metals before nonradioactive lead. Radon daughters may be inhaled or ingested when attached to scale or dust generated during equipment inspection and repair. Radon daughter exposure has been associated with an increased risk of lung cancer.

**TYPES OF IONIZING RADIATION**

Ionizing radiation is any radiation capable of displacing electrons from atoms or molecules, thereby producing ions. Some examples are alpha, beta, gamma, x-rays, neutrons, and ultraviolet light. High doses of ionizing radiation may produce severe skin or tissue damage. The specific type of ionizing radiation includes:

**Alpha**

Alpha particles can be shielded by a sheet of paper or by human skin. If alpha emitters are inhaled, ingested, or enter the body through a cut, they can cause cancer.

**Beta**

Beta radiation can be stopped by a shield like aluminum foil or wood. If beta emitters are inhaled, ingested, or enter the body through a cut, they can cause cancer.

**Gamma**

Gamma rays (and x-rays) are a very penetrating type of radiation. Protection from gamma rays requires heavy shielding [e.g., lead, steel, depleted uranium (DU)]. This type of radiation can cause cancer and, in high doses, Acute Radiation Syndrome (ARS) even if the source is outside the body.

**Neutrons**

Neutron radiation can be shielded by water, plastic, borated metals, and concrete. Neutrons are subatomic particles emitted during the spontaneous fission of uranium and plutonium and from nuclear reactors. Neutron radiation like gamma radiation is highly penetrating and carcinogenic; however, it has a relative biological effectiveness (RBE) twice that of gamma radiation.

**Short Term Health Effects**

Unprotected overexposure to excessive amounts of radium may result in skin burns. Radon and its daughters do not cause any short term health effects.

**Long Term Health Effects**

Unprotected overexposure to radium and radium daughter contaminated dusts has been associated with an increased risk of lung cancer and leukemia. Most NORM material taken into the body is deposited in bones where it will reside for a long time. Radium will not clear from the body significantly over time. For this reason, all exposures should be kept below recognized exposure standards for the general public and unnecessary exposure to radiation should be minimized.

Excessive radiation exposure to the fetus may increase the risk of cancer after birth. The fetus is more sensitive to radiation than an adult so a woman who is, or is planning to become pregnant should work with her employer to ensure her radiation exposure from NORM is minimized.

**Occupational Exposures**

Because the gamma radiation emitted by radium can penetrate vessels and pipes, its presence can be detected from the outside of process equipment. Radon is difficult to detect as only two of its decay products emit gamma rays. Both of these daughters have half-lives of less than 30 minutes, and are only detectable when facilities have been operating for at least two hours.

Previous studies show that, in most cases, worker annual exposures due to gamma radiation levels from process equipment are zero or far below legal exposure limits. In a few cases, gamma radiation has been detected in individual

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equipment that has the potential to expose workers in excess of the prescribed exposure limits. In these rare cases, exposures can be reduced by restricting areas or by instituting operating procedures.

Equipment contaminated with NORM may also be hazardous when opened for inspection and /or repair. Exposure may occur by inhaling or ingesting radioactive dust generated during grinding, cutting or polishing operations. Until the inhalation/ingestion hazard has been fully evaluated at the worksite, precautions must be taken.

NORM contaminated work clothing may carry NORM scale and dust home, exposing family members.

## **V. WHAT YOU CAN DO TO PROTECT YOURSELF FROM NORM MONITORING**

Outside surfaces of equipment suspected to be NORM contaminated must be surveyed for the presence of gamma radiation. A gamma radiation instrument equipped with a properly calibrated one or two-inch sodium iodide scintillation detector and a slow/fast response switch should be used. It is important that the process equipment be running at least two hours before any gamma measurement is made.

If the dose rate at the surface is greater than two times background, the equipment may be contaminated with NORM and precautions outlined in the following Safe Work Guidelines should be followed before any inspection or maintenance work is performed. Any equipment emitting a gamma dose rate greater than 10 micro-Roentgens/hr may be hazardous and access should be restricted until evaluated by a radiation expert.

### **Safe Work Guidelines**

Work procedures are recommended when maintaining NORM contaminated equipment such as pipelines, filters, pumps, lines, sludge or wellhead equipment. The exposure risk is highest when grinding, cutting, polishing or performing other work that may generate dust. Get good technical advice if you suspect a NORM problem. If there is NORM contamination, all employees should attend a NORM training course.

The work procedures include provisions for:

- Equipment hazard evaluation when the equipment is opened. The evaluation should include the use of gamma detectors, pancake probe measurements and lab analysis for activity and identification of the isotope.
- Protection of workers from external gamma radiation, if necessary.
- Protection of workers from NORM contaminated dust.
- Controlling the spread of contamination.

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- Waste classification to ensure NORM is controlled while minimizing waste volume.

## **VI. NORM CONTAMINATED WASTES**

Norm contaminated materials exceeding 70 Becquerels per gram (70 Bq/gm) are subject to TDG requirements.

NORM contaminated materials with activities above 0.3 Bq/gm may be a hazardous radioactive waste. A competent radiation expert must perform a risk analysis before disposal can occur. Waste containing more than 0.3 Bq/gm may be disposed in a regular fashion depending on the total amount of waste, the radioactive isotope, isotope concentrations and the disposal location. A reputable laboratory equipped with proper equipment must determine activities.

NORM contaminated wastes may include filters from contaminated process streams, storage and transport tank scale or sludge, water separation tank sludge; well bore scale and sludge from pigging operations.

Production tubing contaminated with NORM scale should be capped, labeled and stored. Tubulars should not be rattled at the rig unless you are certain they are NORM free. Other wastes should be barreled – preferably plastic to prevent corrosion – labeled and stored.

NORM storage areas should be separated from other materials and entry should be restricted. The storage area requires periodic radiation surveys to ensure gamma levels are not increasing above hazardous levels and/or site contamination is not occurring from leaking containers.

All equipment, tubular and property should be evaluated for NORM contamination before:

- Transferring to another facility.
- Equipment sale to industry, farmers, cities, schools, etc.
- Descaling.
- Reuse of equipment.
- Donating equipment to farmers, cities, schools, etc.
- Offsite repair by third parties.

Proper protective equipment including respiratory or breathing air should be worn when entering contaminated vessels.

1. Direct skin contact with radioactive scale and solids should be avoided to the extent reasonably possible.
2. Eating, drinking, smoking and chewing should not be allowed in the work area.

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3. Personnel should thoroughly wash their hands and face following any skin contact that occurs, prior to eating, drinking or smoking, and at the end of the work.
4. Surface contamination should be handled in the wet state.
5. Contaminated equipment, pipe, etc., should be disposed of in accordance with approved waste and surplus equipment disposal procedures.
6. Methods for protection against radiation are time, distance and shielding.

**VII. TRAINING**

Employees exposed to NORM shall be trained annually and before exposure in the hazards, location, methods to identify the hazards and methods used to protect themselves (HEPA filters on respirators and limitations).

**VIII. METHODS FOR PROTECTION**

Methods for protection against radiation are time, distance and shielding. PPE and personal hygiene shall be provided at no cost to employees.

**IX. METHODS FOR TESTING**

Radiation levels can be tested utilizing a wide range of instruments including pocket dosimeters, count rate instruments, and probe efficiencies (alpha, beta, and gamma). Testing and calibration procedures must follow the National Institute of Standards and Technology and conform to the requirements of ANSI N323-1978 and MIL-STD 45662A. Appropriate methods for testing and specific radionuclides that are tested may vary, but shall include Technology Enhanced Naturally Occurring Radioactive Materials (TENORM) used and described exposures, and shall be approved by the program administer i.e. (Safety Manger).

Measurements shall be made on all suspect material by line Supervisors, i.e. (old drilling / tubing strings, downhole equipment, etc.). Anytime the presence of NORM scale is detected, immediately isolate the area and contact your local Compliance director. The Compliance director will identify and determine appropriate disposal mechanism in accordance with federal, state and local regulations.

It is Company policy not to accept onto its premises, or to work on equipment (piping or material) which give a NORM reading of greater than 10 micro-Roentgens. In the event a piece of equipment exceeds this threshold level prior to returning the equipment, the owner must survey using an approved NORM detection device, and submit the results to our company. If the readings are found acceptable, the equipment can be shipped to us. Upon arrival of the equipment at company location, the equipment will again be checked for the presence of NORM, and will be returned to the owner if the above limit is exceeded.

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## **RESPIRATORY PROTECTION PROGRAM**

### **I. PURPOSE**

This respiratory protective equipment program initiates standard operating procedures to ensure the protection of all employees from respiratory hazards through proper selection and use of respirators. Respiratory protective equipment is to be used only where engineering control of respiratory hazards is not feasible, while engineering controls are being installed, or in emergencies. This program is in accordance with the requirements of OSHA 29 CFR 1910.134.

### **II. ADMINISTRATIVE DUTIES**

The designated Respiratory Protection Program Administrator is the Compliance director. This person is solely responsible for all facets of the program and has full authority to make necessary decisions to ensure success of this program. The Program Administrator will develop written detailed instructions covering each of the basic elements in this program, and is the sole person authorized to amend these instructions.

He is also qualified by appropriate training and experience that is commensurate with the complexity of the program to administer or oversee our Respiratory Protection Program and conduct the required evaluations of program effectiveness.

Employees may review a copy of our Respiratory Protection Program in the Safety Manual. The Program Administrator reviews this program periodically to ensure its effectiveness. The Program Administrator may also amend the written program.

### **III. GENERAL REQUIREMENTS**

1. Respiratory protection training must be completed initially and annually thereafter. The training program must address employee knowledge of respirators, fit, use, limitations, emergency situations, wearing, fit checks, maintenance and storage, medical signs and symptoms of effective use, and general requirements of the OSHA standard. The training must be provided before requiring the employee to use the respirator.
2. Respiratory equipment will be provided to all employees that may be exposed to harmful vapors and oxygen deficient atmospheres. Respirators are to be used when engineering control measures are not feasible or during emergency situations with high exposure. Respirators shall be provided that are applicable and suitable for purpose intended.
3. The respiratory program administrator is the Safety Manager. This person is the individual who is knowledgeable of the complexity of the program, able to conduct evaluations and has the proper training.

4. Respiratory protection equipment is provided by the company to all affected employees at no cost.
5. Respiratory Hazards must be identified and NIOSH certified respirators must be selected and provided based on those hazards and factors affecting performance.
6. Medical evaluations shall be completed prior to fit-testing and be confidential, held during normal working hours, convenient, understandable, and the employee given a chance to discuss the results with the physician or other licensed health care professional (PLHCP).
7. Fit-testing of tight-fitting face pieces must be done by either qualitative or quantitative methods. Employees are required to pass qualitative fit test (QLFT) or quantitative fit test (QNFT) before initial use, if a different respirator is used, and annually.
8. If an employee cannot wear tight-fitting face pieces, if the seal is broken. Anything that can affect the seal is prohibited. This includes facial hair, glasses, etc. Respirators with tight-fitting facepieces shall not be worn by employees who have facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function.
9. Employees must leave the area to wash, change cartridges, or if they detect break-through or resistance. The program administrator must address appropriate surveillance, and ensure employees leave the area to wash, change cartridges, or if they detect break-through or resistance.
10. If employees need to work in IDLH environments work will commence following the IDLH selection criteria shown on page 5. Additionally, outside standby persons must be provided, maintaining communication, proper training and equipment, notification procedures, and necessary action to take in an emergency. Mandatory equipment must include SCBA or SAR with auxiliary air supply and appropriate retrieval equipment or equivalent rescue means.
11. Respirators must be maintained and cared for to ensure they are clean and sanitary. Respirators are required to be provided in a clean and sanitary manner using procedures in Appendix B of the regulation or equally effective manufacturer's procedures. Our Safety Representative is responsible for ensuring employees are maintaining and caring for respirators.
12. Respiratory protective equipment must be properly stored and inspected. They must be protected from damage, contamination, etc. For emergency use respirators must be stored accessible, clearly marked. Respirators must be inspected on a routine basis - before use and during cleaning; emergency -

monthly, and before and after each use; escape-only - before being carried into workplace.

#### **IV. RESPIRATOR SELECTION**

Respirators are selected on the basis of respiratory hazards to which the worker is exposed and workplace and user factors that affect respirator performance and reliability. All selections are made by the Foreman, Compliance director, or designee. Respirators, training and medical evaluations are provided at no cost to employees. The Program Administrator will develop detailed written standard operating procedures governing the selection of respirators using the NIOSH Respirator Decision Logic and/or OSHA standards. Outside consultation, manufacturer's assistance, and other recognized authorities will be consulted if there is any doubt regarding proper selection.

##### **Selection Procedure Checklist**

When selecting any respirator in general:

Select and provide respirators based on respiratory hazard(s) to which a worker is exposed and workplace and user factors that affect respirator performance and reliability.

Select a National Institute for Occupational Safety and Health (NIOSH) certified respirator.

Identify and evaluate the respiratory hazard(s) in the workplace, including a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Consider the atmosphere to be immediately dangerous to life or health (IDLH) if you cannot identify or reasonably estimate employee exposure.

Select respirators that provide protection to the employee, and correctly fits, the user. When selecting respirators for IDLH atmospheres

##### **Provide these respirators:**

A full face piece pressure demand Self-contained, positive pressure, breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes, or

- A combination full-face piece pressure demand supplied-air respirator Self-contained breathing apparatus (SAR) with auxiliary self-contained air supply.
- Provide a NIOSH-certified 5-minute escape bottle to be used in conjunction with the above respiratory protective equipment in IDLH conditions, or when using a atmosphere-supplying respirator.
- Consider all oxygen-deficient atmospheres to be IDLH. Exception: If the program administrator, or designee, can demonstrate that, under all foreseeable conditions,

the oxygen concentration can be maintained within the ranges specified in Table II of 29 CFR 1910.134 (i.e., for the altitudes set out in the table), then atmosphere-purifying respirators may be used.

***When selecting respirators for atmospheres that is not IDLH***

- Provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.
- Select respirators appropriate for the chemical state and physical form of the contaminant.
- For protection against gases and vapors, provide:
  - An atmosphere-supplying respirator, or
  - An air-purifying respirator, provided that: (1) The respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or (2) If there is no ESLI appropriate for conditions in our workplace, implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life.
- For protection against particulates, provide:
  - An atmosphere-supplying respirator; or
  - An air-purifying respirator equipped with a filter certified by NIOSH as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator equipped with a filter certified for particulates by NIOSH; or
  - For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

**Respirator Types and Uses**

The following types of respirators are in use in this facility:

Types:	Situation used:
30 Minute SCBA	Emergency escape and Confined Space Entry
15 Minute SCBA	Confined Space Entry (Escape Only)
Supplied Air Respirator (SAR), or airline	Confined Space Entry
Air Purifying Respirator (APR)	Blasting/Painting/and some Chemical Loading

Only NIOSH-certified respirators are selected and used. Where practicable, the respirators will be assigned to individual workers for their exclusive use.

## **V. MEDICAL EVALUATIONS**

A medical evaluation to determine whether an employee is able to use respiratory protective equipment is an important element of an effective Respiratory Protection Program and is necessary to prevent injuries, illnesses, and even, in rare cases, death from the physiological burden imposed by respiratory protection equipment use.

Persons will not be assigned to tasks requiring the use of respirators nor fit tested unless it has been determined that they are physically able to perform the work and use the respirator.

An approved physician, licensed health care professional (PLHCP) and/or designee will perform medical evaluations using a medical questionnaire found in Sections 1 and 2, Part A of Appendix C of 29 CFR 1910.134.

All medical questionnaires and examinations are confidential and handled during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire is administered so that the employee understands its content. All employees are provided an opportunity to discuss the questionnaire and examination results with their physician or other licensed health care professional (PLHCP).

Before any initial examination or questionnaire is given, we supply the PLHCP with the following information so that he/she can make the best recommendation concerning an employee's ability to use a respirator:

- Type and weight of the respiratory protection equipment to be used by the employee;
- Duration and frequency of respirator use (including use for rescue and escape);
- Expected physical work effort;
- Additional protective clothing and equipment to be worn;
- Temperature and humidity extremes that may be encountered.

Once the PLHCP determines whether the employee has the ability to use or not use respiratory Protective equipment, he/she sends the a written recommendation containing only the following information:

- Limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;
- The need, if any, for follow-up medical evaluations; and
- A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

### ***Follow-up medical examination***

A follow-up medical examination will be provided if a positive response is given to any

question among questions 1 through 8 in Section 2, Part A of Appendix C of 29 CFR 1910.134 or if an employee's initial medical examination demonstrates the need for a follow-up medical examination. Our follow-up medical examination includes tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, our company shall provide a powered air-purifying respirator (PAPR), if the PLHCP's medical evaluation finds that the employee can use such a respirator. In the above case the company may choose to transfer an employee to a position that does not require a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the company is no longer required to provide a PAPR.

#### ***Additional medical examinations***

Our company provides additional medical evaluations if:

- An employee reports medical signs or symptoms that are related to ability to use a respirator;
- A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be re-evaluated;
- Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation; or
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee. Contact the approved physician/licensed health care professional (PLHCP) for a copy of your confidential medical evaluation or questionnaire.

#### **VI. FIT TESTING PROCEDURES**

Respiratory protective equipment must fit properly to provide protection to users. If a tight seal is not maintained between the facepiece and the employee's face, contaminated air can be drawn into the facepiece and be breathed by the employee. Fit testing seeks to protect the employee against breathing contaminated ambient air and is one of the core provisions of our respirator program.

In general, fit testing may be either qualitative or quantitative. Qualitative fit testing (QLFT) involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of the respirator user. If that user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate.

In a quantitative respirator fit test (QNFT), the adequacy of respirator fit is assessed by

measuring the amount of leakage into the respirator. Appropriate instrumentation is required to quantify respirator fit in QNFT.

The Program Administer makes sure those employees are fit tested at the following times with the same make, model, style, and size of respirator that will be used:

- Before any of our employees are required to use any respirator with a negative or positive pressure tight-fitting facepiece;
- Whenever a different respirator facepiece (size, style, model, or make) is used;
- At least annually;
- Whenever the employee reports, or our company, PLHCP, supervisor, or Program Administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight; and
- When the employee, subsequently after passing a QLFT or QNFT, notifies the company, Program Administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable. That employee will be re-tested with a different respirator facepiece.

Employees must pass one of the following fit test types that follow the protocols and procedures contained in 29 CFR 1910.134 Appendix A:

- QLFT (May be used to test tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators if tested in the negative pressure mode); or
- QNFT (May be used to fit test a tight-fitting half facepiece respirator that must achieve a fit factor of 100 or greater OR a tight-fitting full facepiece respirator that must achieve a fit factor of 500 or greater OR tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators if tested in the negative pressure mode).

## **VII. PROPER USE PROCEDURES**

Once the respirator has been properly selected and fitted, its protection efficiency must be maintained by proper use in accordance with 29 CFR 1910.134(g). Our company ensures with written procedures that respirators are used properly in the workplace.

Our company has used the following checklist to ensure that proper use procedures include coverage of OSHA requirements:

### ***Facepiece Seal Protection***

- Do not permit respirators with tight-fitting facepieces to be worn by employees who have:
  - Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or

- Any condition that interferes with the face-to-facepiece seal or valve function.
- If an employee wears corrective glasses or goggles or other personal protective equipment, ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.
- For all tight-fitting respirators, ensure that employees perform a user seal check each time they put on the respirator using the procedures in 29 CFR 1910.134 Appendix B-1 (User Seal Check Procedures) or procedures recommended by the respirator manufacturer that you can demonstrate are as effective as those in Appendix B-1.

### ***Continuing Respirator Effectiveness***

- Appropriate surveillance must be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, reevaluate the continued effectiveness of the respirator.
- Ensure that employees leave the respirator use area:
  - To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use; or
  - If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or
  - To replace the respirator or the filter, cartridge, or canister elements.
  - If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, replace or repair the respirator before allowing the employee to return to the work area.

### **Procedures for IDLH Atmospheres**

Ensure that:

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere;
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
- The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;
- The employer or designee authorized to do so by the company, once notified, provides necessary assistance appropriate to the situation;

- Employee(s) located outside the IDLH atmospheres are equipped with:
  - Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either:
  - Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
  - Equivalent means for rescue where retrieval equipment is not required under the bullet item above this one.

#### **VIII. MAINTENANCE AND CARE PROCEDURES**

In order to ensure continuing protection from respiratory protective devices, it is necessary to establish and implement proper maintenance and care procedures and schedules. A lax attitude toward maintenance and care will negate successful selection and fit because the devices will not deliver the assumed protection unless they are kept in good working order.

##### ***Cleaning & disinfecting***

Our company provides each respirator user with a respirator that is clean, sanitary, and in good working order. We ensure that respirators are cleaned and disinfected using the procedures below:

In Appendix B-2 of 29 CFR 1910.134 (refer to appendix B).

- Recommended by the respirator manufacturer. These procedures are of equivalent effectiveness as Appendix B-2 of 29 CFR 1910.134.

The respirators are cleaned and disinfected at the following intervals:

<b>Respirator type:</b>	<b>Are cleaned and disinfected at the following interval:</b>
Issued for the exclusive use of an employee	As often as necessary to be maintained in a sanitary condition
Issued to more than one employee	Before being worn by different individuals
Maintained for emergency use	After each use
Used in fit testing and training	After each use

##### ***Storage***

Storage of respirators must be done properly to ensure that the equipment is protected and not subject to environmental conditions that may cause deterioration. We ensure that respirators are stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they are packed or stored in a clean dry place to prevent deformation of the facepiece and exhalation valve. In addition, emergency respirators are kept accessible to the work area; stored in compartments that are clearly marked as containing emergency respirators; and stored in accordance with any applicable manufacturer instructions.

### ***Inspection***

In order to assure the continued reliability of respirator equipment, it must be inspected on a regular basis. The frequency of inspection is related to the frequency of use. Here are our frequencies for inspection:

<b>Respirator type:</b>	<b>Inspected at the following frequencies:</b>
All types used in routine situations	Before each use and during cleaning
Maintained for use in emergency situations	At least monthly and in accordance with the manufacturer's recommendations, and checked for proper function before and after each use
Emergency escape-only respirators	Before being carried into the workplace for use

Any one of our respirator inspections includes a check:

- For respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
- Of elastomeric parts for pliability and signs of deterioration.
- For self-contained breathing apparatus, in addition to the above, monthly, we maintain air and oxygen cylinders in a fully charged state and recharge when the pressure falls to 90% of the manufacturer's recommended pressure level and determine that the regulator and warning devices function properly.

Also for respirators maintained for emergency use, we certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator. This information shall be maintained until replaced following a subsequent certification.

See the attached respirator inspection records.

### ***Repairs***

Respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following

### ***Cylinders Used to Supply Breathing Air to Respirators***

- Cylinders must be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR 173 and 178), or acceptable manufacturer standards.
- Cylinders of purchased breathing air must have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air.
- The moisture content in the cylinder must not exceed a dew point of -50 deg. F (-45.6 deg. C) at 1 atmosphere pressure.

### ***Compressors***

- Ensure that compressors used to supply breathing air to respirators are constructed and situated so as to:
  - Prevent entry of contaminated air into the air-supply system;
  - Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 deg. C) below the ambient temperature;
  - Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters must be maintained and replaced or refurbished periodically following the manufacturer's instructions; and
  - Have a tag containing the most recent change date and the signature of the person certified to perform the change. The tag must be maintained at the compressor.
- For compressors that are not oil-lubricated, ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
- For oil-lubricated compressors, use a high-temperature and carbon monoxide alarm, to monitor levels.

### ***Breathing Air Couplings***

- Ensure that breathing air couplings are incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance must be introduced into breathing air lines.

### ***Breathing Gas Containers***

- Use breathing gas containers marked in accordance with the NIOSH respirator certification standard, 42 CFR part 84, or other acceptable standard.

***Filters, Cartridges, and Canisters*** Ensure that all filters, cartridges and canisters used in the workplace are labeled properly with the NIOSH approval label and that the label is not removed and remains legible.

procedures:

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and only with the respirator manufacturer's NIOSH-approved parts designed for the respirator;
- Repairs must be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and
- Reducing and admission valves, regulators, and alarms must be adjusted or repaired only by the manufacturer or a technician who is certified by the manufacturer.

### ***Discarding of respirators***

Respirators that fail an inspection or are otherwise not fit for use and cannot be repaired must be discarded in a manner to ensure they are not used again.

## **IX. AIR QUALITY PROCEDURES**

When atmosphere-supplying respirators are being used to protect employees it is essential to ensure that the air being breathed is of sufficiently high quality. Our company's procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators include coverage of the following OSHA requirements:

### ***Compressed Air, Compressed Oxygen, Liquid Air, and Liquid Oxygen Used for Respirators***

- Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen.
- Compressed breathing air must meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:
  - Oxygen content (v/v) of 19.5-23.5%;
  - Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
  - Carbon monoxide (CO) content of 10 ppm or less;
  - Carbon dioxide content of 1,000 ppm or less; and
  - Lack of noticeable odor.
- Documentation for the quality of compressed breathing air must be kept with each bottle and/or available at the location of intended use.
- Ensure that compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.
- Ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

## **X. TRAINING**

The most thorough respiratory protection program will not be effective if employees do not wear and maintain respiratory protective equipment properly. Simply put, employee training is an important part of the respiratory protection program and is essential for correct respirator use.

Our training program covers both the:

1. Respiratory hazards to which our employees are potentially exposed during routine and emergency situations, and
2. Proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.

Both training parts are provided prior to requiring an employee to use a respirator in our workplace. However, if an employee has received training within 12 months addressing the seven basic elements of respiratory protection (see "Seven basic elements" below) and the Company and the employee can demonstrate that he/she has knowledge of those elements, then that employee is not required to repeat such training initially.

**We require all employees that will be wearing respiratory protective equipment to be retrained annually and when the following situations occur:**

- Any change in the workplace that requires a different type of respiratory protective equipment to be worn;
- Inadequacies in the employee's knowledge or use of the respiratory protective equipment indicate the employee has not retained the proper understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

### ***Seven basic elements***

Our employees are trained sufficiently to be able to demonstrate knowledge of at least these seven elements:

1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
2. What the limitations and capabilities of the respirator are.
3. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
4. How to inspect, put on, remove, use, and check the seals of the respirator.
5. What the procedures are for maintenance and storage of the respirator.

6. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
7. The general requirements of 29 CFR 1910.134.

The basic advisory information on respirators, as presented below is provided by our Program Administrator and /or designee in any written or oral format, to employees who wear respirators when such use is not required by the regulations or by our company:

### ***Voluntary use of respirators***

If in the event an employee feels like it is necessary to wear a respirator in an environment where hazardous substances are below OSHA limits they must contact their Compliance director and be entered into the respiratory protection program. Exception: Employees whose only use of respirators involves the voluntary use of filtering (non-sealing) facepieces (dust masks).

## **XI. PROGRAM EVALUATION**

It is inherent in respirator use that problems with protection, irritation, breathing resistance, comfort, and other respirator-related factors occasionally arise in most respirator protection programs. Although it is not possible to eliminate all problems associated with respirator use, we try to eliminate as many problems as possible to improve respiratory protection and encourage employee acceptance and safe use of respirators. By having our program administrator thoroughly evaluate and, as necessary, revise our Respiratory Protection Program, we can eliminate problems effectively.

Program evaluation, performed by your Program Administrator, involves the following:

- Conducting evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.
- Regularly consulting employees required to use respirators to assess their views on program effectiveness and to identify any problems. Any problems that are identified during this assessment must be corrected. Factors to assess include, but are not limited to:
  - Respirator fit (including the ability to use the respirator)
  - Appropriate respirator selection for the hazards to which the employee is exposed
  - Proper respirator use under the workplace conditions the employee encounters
  - Proper respirator maintenance

## APPENDIX A      USER SEAL CHECK PROCEDURES

RE-PRINT OF: APPENDIX B-1 TO §1910.134:  
*USER SEAL CHECK PROCEDURES* (Mandatory)

The individual who uses a tight-fitting respirator must perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturer's recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

### I.      Facepiece Positive and/or Negative Pressure Checks:

- A. Positive pressure check. Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.
- B. Negative pressure check. Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

### II.      Manufacturer's Recommended User Seal Check Procedures:

The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

## **APPENDIX B      RESPIRATORY CLEANING PROCEDURES**

RE-PRINT OF: APPENDIX B-2 TO §1910.134:  
*RESPIRATOR CLEANING PROCEDURES* (Mandatory)

These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here in Appendix B-2. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in Appendix B-2, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

### **I.      Procedures for Cleaning Respirators:**

- A.    Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- B.    Wash components in warm (43° C [110° F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- C.    Rinse components thoroughly in clean, warm (43° C [110° F] maximum), preferably running water. Drain.
- D.    When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
  - 1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43° C (110° F); or,
  - 2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43° C (110° F); or,
  - 3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

- E. Rinse components thoroughly in clean, warm (43° C [110° F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- F. Components should be hand-dried with a clean lint-free cloth or air-dried.
- G. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.

## **APPENDIX C      REFERENCES**

American National Standards Institute  
*Respiratory Protection*, ANSI Z88.2

Bardclays Official California, Code of Regulations (CCR)  
*Respiratory Protective Equipment*, Cal/OSHA Title 8 CCR §1531

Department of Labor  
*Respiratory Protection, and Appendices*, OSHA 29 CFR 1910.134  
*Approval of Respiratory Protective Devices*, 42 CFR 84

Government Institutes, Inc., Rockville, Maryland  
*OSHA's Respiratory Protection Standard 1996*, Mark McGuire Moran

National Institute Occupational Health (NIOSH)  
*Guide to Industrial Respiratory Protection-1987*,  
*Guide to the Selection and Use of Particulate Respirators Certified Under 42 CFR 84 (4/23/96)*.

## RESPIRATOR FIT TEST RECORD

A. Employee: \_\_\_\_\_ Date: \_\_\_\_\_  
Employee No: \_\_\_\_\_  
Employee Job Title/Description: \_\_\_\_\_

B. Respirator: \_\_\_\_\_ Self-Contained \_\_\_\_\_ Supplied Air \_\_\_\_\_ Chemical Cartridge \_\_\_\_\_ Dust/Fume/Mist  
Chemical \_\_\_\_\_ w/Pre-Filter \_\_\_\_\_ Filter  
\_\_\_\_\_ Powered Air \_\_\_\_\_ Cartridge \_\_\_\_\_ Dust/Mist Filter \_\_\_\_\_ HEPA Filter

Respirator Selected: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
NIOSH Approval Number: \_\_\_\_\_  
Model Number: \_\_\_\_\_

C. Conditions which could affect respirator fit:

\_\_\_\_\_ Beard \_\_\_\_\_ Dentures \_\_\_\_\_ Glasses  
\_\_\_\_\_ Facial Scar \_\_\_\_\_ Moustache \_\_\_\_\_ None

Comments: \_\_\_\_\_

D. Fit Check:

Negative Pressure: \_\_\_\_\_ Pass \_\_\_\_\_ Fail \_\_\_\_\_ Not Done

Positive Pressure: \_\_\_\_\_ Pass \_\_\_\_\_ Fail \_\_\_\_\_ Not Done

Isoamyl Acetate: \_\_\_\_\_ Pass \_\_\_\_\_ Fail \_\_\_\_\_ Not Done

Sweetner Test: \_\_\_\_\_ Pass \_\_\_\_\_ Fail \_\_\_\_\_ Not Done

Irritant Smoke: \_\_\_\_\_ Pass \_\_\_\_\_ Fail \_\_\_\_\_ Not Done

Comment: \_\_\_\_\_

E. Maintenance: Cleaning: \_\_\_\_\_ Daily \_\_\_\_\_ Weekly Other \_\_\_\_\_ Individual \_\_\_\_\_ None  
Disposal: \_\_\_\_\_ Daily \_\_\_\_\_ Weekly Other \_\_\_\_\_ Plant

F. Employee acknowledgement of test results:

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Test conducted by: \_\_\_\_\_





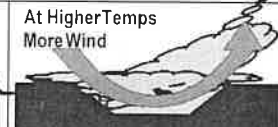
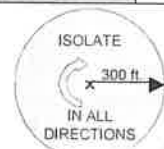
\_\_\_\_\_ Date: \_\_\_\_\_

## SPILL PREVENTION AND RESPONSE

EMERGENCY INCIDENT RESPONSE GUIDELINES	▶ OIL LEAK / RELEASE																																																																																				
<p><b>INCIDENT HAZARD TYPE:</b></p> <p><u><b>MAJOR INCIDENT:</b></u> Significant spill and fire potential involving a large area and/or entry of oil into navigable waterways – A sheen of oil on moving waters is a significant spill.</p> <p><u><b>MINOR INCIDENT:</b></u> Spill that is contained in the general spill area not affecting navigable waterways or wildlife.</p>	<p><b>UNIVERSAL PRECAUTIONS / PROCEDURES:</b></p> <ul style="list-style-type: none"> <li>▶ The order of tasks for each Incident is based on protecting 1<sup>st</sup> LIFE, 2<sup>nd</sup> the ENVIRONMENT and 3<sup>rd</sup> PROPERTY</li> <li>▶ Initiate Incident Command System (ICS) Immediately</li> <li>▶ Offensive Actions: STOP! Are you sure you have done all defensive actions possible? Base offensive actions on Risk vs. Gain analysis.</li> </ul> <p><b>Isolating the incident, denying entry, and initiating protective action(s) will be your initial response. Area evacuation should be initiated when the situation cannot be contained.</b></p>																																																																																				
HAZARD IDENTIFICATION/RECOGNITION																																																																																					
<ul style="list-style-type: none"> <li>▶ Locate/identify/verify where leak is coming from, make sure you are in a safe position (i.e. upwind or use binoculars). Assess potential area of impact (i.e. downwind of leak or damage).</li> <li>▶ <u>Isolate Scene / Deny Entry</u> - Initial isolation 300 feet in all directions. Platform configuration may restrict the isolation limits.</li> <li>▶ Initiate response. If emergency services are called for, dispatch Company personnel to lead emergency services (MSRC, Fire Department, Ambulance, Sheriff, etc.) to the scene. Ensure a safe route and staging area has been identified prior to bringing emergency services to the scene.</li> <li>▶ Refer to the accompanying EMERGENCY INCIDENT RESPONSE GUIDELINES, the DOT North American Emergency Response Guidebook, and/or the MSDS. <b>CAUTION:</b> Isolation distance may expand due to wind, size of release, or affected population.</li> <li>▶ Facility maps with chemical, first aid, and emergency equipment locations are in the Hazardous Materials Business Plan.</li> </ul>																																																																																					
ASSESSMENT OF HAZARD	<p>IDLH : 100 PPM      TLV/STEL: 5 PPM UEL: 44%      LEL: 4.0%      TLV/TWA: 1 PPM</p>																																																																																				
<p style="text-align: center;">Comparative Hazard Ratings (NTC*)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Min.</th> <th style="text-align: center;">Low</th> <th style="text-align: center;">Moderate</th> <th style="text-align: center;">High</th> <th style="text-align: center;">Extreme</th> </tr> </thead> <tbody> <tr><td>Explosion</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td></tr> <tr><td>Fire</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td></tr> <tr><td>Mass Gas Potential</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td><td></td><td></td></tr> <tr><td>Immed. Respiratory</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td><td></td><td></td></tr> <tr><td>Immed. Skin</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td><td></td><td></td></tr> <tr><td>Immed. Eye</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td><td></td><td></td></tr> <tr><td>Immed. Oral</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td><td></td><td></td></tr> <tr><td>Delayed Health</td><td style="background-color: black;"></td><td style="background-color: black;"></td><td></td><td></td><td></td></tr> <tr><td>Reactivity</td><td style="background-color: black;"></td><td></td><td></td><td></td><td></td></tr> <tr><td>Corrosivity</td><td style="background-color: black;"></td><td></td><td></td><td></td><td></td></tr> <tr><td>Oxidizer Action</td><td style="background-color: black;"></td><td></td><td></td><td></td><td></td></tr> <tr><td>Immed. Environ</td><td style="background-color: black;"></td><td></td><td></td><td></td><td></td></tr> <tr><td>Delayed Environ</td><td style="background-color: black;"></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		Min.	Low	Moderate	High	Extreme	Explosion						Fire						Mass Gas Potential						Immed. Respiratory						Immed. Skin						Immed. Eye						Immed. Oral						Delayed Health						Reactivity						Corrosivity						Oxidizer Action						Immed. Environ						Delayed Environ						<p><b>Hazard Summary:</b></p> <ul style="list-style-type: none"> <li>▶ Combustible liquid (Flash Point 200 Deg. F ); toxic H<sub>2</sub>S is present in oil at up to 50 ppm in closed stream/vessels; H<sub>2</sub>S hazards can be in enclosed areas below grade locations where air is stagnant; crude oil and H<sub>2</sub>S vapors/gas are heavier than air; irritant properties include skin and upper respiratory systems, Reduce prolonged or repeated skin contact; reacts with strong oxidizers; contains approximately 0.1% Benzene. NAERG '96 ID 9277, Guide No. 171. <b>Review physical and chemical properties to anticipate behavior and potential outcomes.</b></li> <li>▶ What is wind direction, speed and other weather conditions?</li> <li>▶ What is the safest route for emergency response resources?</li> </ul>
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**GENERAL SAFETY POLICIES**  
**Section: 5.10 Spill Prevention and Response**

**Revision Number: 1**  
**Revision Date: 6/20/2013**  
**File Name: P510**

<b>TOXIC</b> 	<b>FIRE</b> 	<b>EXPLOSIVE</b> 	<b>HEAVIER THAN AIR</b> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>At Cooler Temps/ Less Wind</b>   </div> <div style="text-align: center;"> <b>At Higher Temps More Wind</b>   </div> </div>																				
<b>ZONE OF IMPACT / ZONING</b>			Contact The O'Brien's Response Management (714-577-2100) for spill related issues.																				
<b>Initial Isolation distances:</b> Isolate 300 feet in all directions then protect persons immediately downwind for 1 mile. Platform configuration may restrict isolation limits.			<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>► Use the isolation distances as a guide to determine incident perimeter and barriers. Exclusion (hot) zone, Contamination Reduction (warm) zone, and Support (cold) zone will be established by emergency response personnel.</p> </div> </div>																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Potential Toxic Components of Crude Oil</th> <th style="text-align: center;">(PEL) Permissible ** Exposure Limit</th> <th style="text-align: center;">Other limits **</th> </tr> </thead> <tbody> <tr> <td>Hydrogen Sulfide</td> <td style="text-align: center;">10 ppm</td> <td>50 ppm (Ceiling); 100 (IDLH)</td> </tr> <tr> <td>Benzene</td> <td style="text-align: center;">0.1 ppm</td> <td>50 ppm (Ceiling); 500 (IDLH)</td> </tr> <tr> <td>Xylene</td> <td style="text-align: center;">100 ppm</td> <td>900 ppm (IDLH)</td> </tr> <tr> <td>Toluene</td> <td style="text-align: center;">100 ppm</td> <td>500 ppm (IDLH)</td> </tr> <tr> <td>Ethyl Benzene</td> <td style="text-align: center;">100 ppm</td> <td>800 ppm (IDLH)</td> </tr> </tbody> </table> <p><small>**NIOSH Threshold Limit Values</small></p>				Potential Toxic Components of Crude Oil	(PEL) Permissible ** Exposure Limit	Other limits **	Hydrogen Sulfide	10 ppm	50 ppm (Ceiling); 100 (IDLH)	Benzene	0.1 ppm	50 ppm (Ceiling); 500 (IDLH)	Xylene	100 ppm	900 ppm (IDLH)	Toluene	100 ppm	500 ppm (IDLH)	Ethyl Benzene	100 ppm	800 ppm (IDLH)		
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<b>ACTION PLANNING</b>			<b>Initiate Incident Command System (ICS); identify location of Command Post (CP) uphill and upwind of the incident.</b>																				
<b>SAFETY:</b> <ul style="list-style-type: none"> <li>► Determine if all personnel at the site (of the emergency) have been accounted for.</li> <li>► Rescue victims if it can be done safely (proper protective equipment).</li> <li>► Do not move seriously injured individuals unless they are in immediate danger.</li> <li>► Evacuate personnel/public to the site specific safe and open briefing area away from dangers.</li> </ul>			<b>PROTECTION:</b> <ul style="list-style-type: none"> <li>►</li> </ul>																				
<b>STABILIZATION:</b> <ul style="list-style-type: none"> <li>► Shut off flow if it can be done from a safe distance.</li> <li>► <b>Containment and recovery:</b> Complete site assessment, identify operational zones and assign teams, identify containment and recovery opportunities, initial incident action plan, site sampling plan, waste management plan, wildlife rehabilitation plan and general plan.</li> </ul>			<b>TERMINATION:</b> <ul style="list-style-type: none"> <li>► <b>Air:</b> Monitor situation, clear immediate area, let wind disperse.</li> <li>► <b>Water:</b> Dispose in an appropriate facility, or use absorbents to separate product from water.</li> <li>► <b>Soil:</b> Transport for disposal or let bacteria degrade product.</li> </ul>																				
<b>RESOURCES (RE-STAT)</b>																							
<b>RESPONSE PERSONNEL:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">Initiate Incident Response Team(s)</td> <td style="width: 50%;">General Alarm (Local)</td> </tr> <tr> <td>Person In Charge (platforms)</td> <td>562-606-5705</td> </tr> <tr> <td>Health/Safety &amp; Environmental</td> <td>562-628-1526</td> </tr> <tr> <td>Corporate IRT</td> <td>562-628-1526</td> </tr> <tr> <td>MSRC (Spill Co-op)</td> <td>800-259-6772</td> </tr> <tr> <td>Mercy Air Ambulance</td> <td>800-222-3456</td> </tr> </table>			Initiate Incident Response Team(s)	General Alarm (Local)	Person In Charge (platforms)	562-606-5705	Health/Safety & Environmental	562-628-1526	Corporate IRT	562-628-1526	MSRC (Spill Co-op)	800-259-6772	Mercy Air Ambulance	800-222-3456	<b>Reporting:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;">National Response Center</td> <td style="width: 50%;">800-424-8802</td> </tr> <tr> <td>Department of Transportation</td> <td>202-366-4595</td> </tr> <tr> <td>State Office of Emergency Services</td> <td>800-852-7550</td> </tr> <tr> <td>Minerals Management Service</td> <td>805-389-7770</td> </tr> </table> <p>Refer to the Emergency Action Plan, Section 4.0 for other</p>	National Response Center	800-424-8802	Department of Transportation	202-366-4595	State Office of Emergency Services	800-852-7550	Minerals Management Service	805-389-7770
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**Public Resources:**

Long Beach Fire Department      562-218-8179  
US Coast Guard LA                    310-521-3800  
US Coast Guard Long Beach        800-221-8724 (emer.)  
La County Sheriff                    310-830-1123  
Orange County Sheriff                714-647-7000

Refer to the **Integrated Contingency Plan** or Emergency Incident Placard for detailed contact information.

reporting requirements.

**Information Resources:**

CHEMTREC                                800-424-9300  
Northridge Tox Center                800-682-9000  
O'Brien's Response                    714-577-2100  
Management

**Contractors:**

For post incident clean-up: See the EAP or ICP.

**DECONTAMINATION / DISPOSAL / DOCUMENTATION**

- ▶ Response personnel don SCBA, body protection (level B), and gloves.
- ▶ Begin flushing victim with water while removing all clothing. Note: Flush head and face first and protect airway; next flush damaged area. (Flush at least 2 minutes w/fire hose or emergency shower). Flush eyes for 20 minutes. Bag clothing for later disposal.
- ▶ When complete provide tyvek clothing to patient to ensure privacy and provide disposable blanket. (Once victim is stripped / flushed, there should be no risk of secondary contamination).
  - Walking victims should be instructed to the exclusion zone and decon themselves.
  - ERT Hazmat decon operations will follow the decontamination protocols in the **Integrated Contingency Plan**.
  - For Disposal: Neutralize liquid, for soil: Have contractor advise, see resource section.
- ▶ Post-incident critique must be conducted and documented. Any personnel exposed shall be medically evaluated and exposure documented.

**SAFETY / ADDITIONAL CONCERNS**

- ▶ For Large Spill Clean-up: a representative number of passive dosimeters (organic vapor) should be placed on response personnel to document potential: Benzene, Xylene, Toluene, Ethyl Benzene.
- ▶ Normal clean-up will be Level D personnel protective equipment utilizing Tyvek or similar full body disposable clothing with Nitrile or other impervious gloves. **Note:** EHS will survey area for contaminants prior to committing level D protected personnel.
- ▶ If response personnel are required to work in Level A, B or C protection, then all personnel assisting in decontamination will have to wear the appropriate level of protective clothing.

## **GENERAL REQUIREMENTS**

1. Proper storage of chemicals to minimize the potential for a spill must be addressed. Chemical substances should be stored in proper containers to minimize the potential for a spill. Whenever possible, chemicals should be kept in closed containers and stored so they are not exposed to storm water.
2. Spill response materials or spill kits must be adequate for any anticipated spills. A proper spill kit must contain the appropriate supplies for materials that may be spilled. Supplies must be easily accessible when required, and considerations must be made for both the type and quantity of materials.
3. Employees must be trained on proper spill prevention and response procedures. Employees must be instructed on the proper response procedures for spilled materials. The training should include materials available for use, proper waste disposal, and communication procedures.
4. Areas where chemicals may be used or stored must be maintained using good housekeeping best management practices. This includes, but is not limited to, clean and organized storage, labeling, and secondary containment where necessary
5. Proper communication measures must be in place and initiated upon a spill or release of materials. The program should address proper communication measures for employees to initiate in the event of a spill. Communication procedures should be based on type and quantity of materials spilled.

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## **I. WASTE STORAGE AND HANDLING**

Field personnel must be familiar with and implement the following health and safety procedures during waste management activities, especially during packaging, sampling, handling or similar activities where it is likely to be exposed.

- Review SDS for chemicals suspected to be in the waste.
- Refer to typical health and safety requirements specific to field operations and wear the proper personal protective equipment.
- Drums containing waste should never be lifted by hand; use proper waste handling equipment.
- Follow confined space entry standard in enclosed areas.
- If there are any unsafe conditions or items needing repair, contact immediate supervisor and take corrective action immediately.
- Review first aid and fire fighting protocols prior to initial exposure to material.
- Be sure to contact the EH&S contact if uncertainties exist.
- The facility does not accept any waste water contained in totes.
- Materials in totes shall never be pumped or transferred into a vacuum truck

## **II. WASTE STORAGE**

Storage procedures begin when waste is generated and ends at removal and transportation of the waste for recycling, disposal or treatment. All wastes should be stored and handled in a manner that prevents the creation of nuisances (odor, spills, dust, etc.).

## **III. CONTAINERS**

Containers used to store waste should be nonabsorbent, durable, watertight, and designed for safe handling. Containers should also be of sufficient size to prevent overflow (22 CCR 66262.30). Waste storage and handling may include the following list of storage containers:

- Bulk liquid storage tanks (Baker tanks)
- Roll-off bins/boxes [California Highway Patrol (CHP) or Department of Transportation (DOT) approved]
- DOT Drums

## **IV. TIME LIMIT FOR STORAGE**

Per 22 CCR 66262.34, the time limit for hazardous waste storage is 90 days and requires the following:

- Appropriate containers.
- Proper storage area.

- Properly filled-out hazardous waste label affixed to all hazardous waste containers immediately.
- The date which each period of accumulation begins must be clearly marked on the storage container or entered on the label.
- Storage of hazardous waste for more than 90 days requires a special permit from the appropriate regulatory agencies.
- Weekly inspections and records must be completed by the Site Supervisor, or designee, weekly while waste is in storage. Copies should be forwarded to the Company environmental contact.

## V. STORAGE CONTAINER LABELS

A properly completed label must be placed on all waste containers. Labels are available at the field office. Depending upon the hazardous characteristics of the waste stored in the container, the following types of labels should be used. All labels must be filled out completely using a waterproof pen:

- Waste Pending Analysis Labels—For wastes that are suspected to be hazardous but are awaiting laboratory analysis to determine the hazardous classification, a waste label indicating the laboratory analysis is pending must be affixed to the storage container.
- Hazardous Waste Labels—For wastes that are known to be hazardous or determined to be hazardous through laboratory analysis. A special label must be used, "hazardous waste".
- Non-hazardous Waste Labels—This type of label should be used for wastes that are known to be non-hazardous or determined to be non-hazardous through laboratory analysis, "non-hazardous waste".
- Non-regulated Waste Labels—This label should be used for wastes that are accumulated pending disposal that are not regulated as hazardous or universal wastes.
- Drained Used Oil Filter Labels—Used oil filters should be drained and placed in a closed drum exhibiting a "drained used oil filter" label.
- Empty Labels—Drums that are onsite and planned to be utilized for containing wastes may be marked with the "Empty" label. Additionally, drums that held a hazardous waste or hazardous material and are now empty may be marked as such.

Alternative methods of identification (such as temporary type signs) may be acceptable when storing waste in rented bins or tanks. Additional labels may be required for DOT, or other regulatory agency.

## VI. WASTE PROFILING AND DISPOSAL

Each waste material must be identified as either hazardous or non-hazardous so it is properly disposed of. Once a waste stream has been identified as hazardous or non-hazardous, an application must be submitted to an approved disposal or recycling facility for acceptance of the waste. Most disposal and recycling facilities require a properly completed waste profile sheet, appropriate laboratory report and may also request a sample. The Company will coordinate the profiling function on a case by case basis. Please refer to the flow chart in Figure 1 for assistance in determining whether or not a material is hazardous and how to dispose of it. Please take note:

- EPA "Listed" waste can be found at <http://www.epa.gov/osw/hazard/wastetypes/listed.htm>
- "Universal Waste" consists of: electronic devices, batteries, mercury-containing equipment, cathode ray tubes and non-empty aerosol cans.

## VII. TRANSPORTATION OF WASTE

All shipments of both hazardous and non-hazardous waste require documentation to track the material from the generating facility to the disposal or recycling facility (Title 22 CCR 66262.20). The type of documentation approved as shipping papers include:

- Uniform Hazardous Waste Manifest—The Company will coordinate the preparation of the hazardous waste shipping paperwork with help from field personnel on a case by case basis. Uniform hazardous waste manifests are obtained from EPA approved vendors. Every container of 119 gallons or less must be marked with the following words and information (See Figure 2 for sample label):

HAZARDOUS WASTE-Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Generator's Name and Address \_\_\_\_\_

Generator's EPA Identification Number \_\_\_\_\_

Manifest Tracking Number \_\_\_\_\_

- Non-hazardous Waste Manifest—For non-hazardous wastes, these forms are available from the transportation vendor at the time of shipment pickup.
- Bill of Lading—Used for **non-hazardous wastes only**.

## **VIII. DOCUMENTATION AND RECORD KEEPING**

Regulatory agencies require record retention from three up to five years. Documentation requests from the regulating agencies are routine, therefore, complete records are important. Duplicate files should be kept at the particular facility as backup copies.

## **IX. CONTINGENCY SPILL RESPONSE AND REPORTING**

The Business Plan contains specific information regarding hazardous waste spills. Please follow the appropriate spill response and reporting procedure when required.

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FIGURE 1 – Waste Classification and Disposal Flow Chart

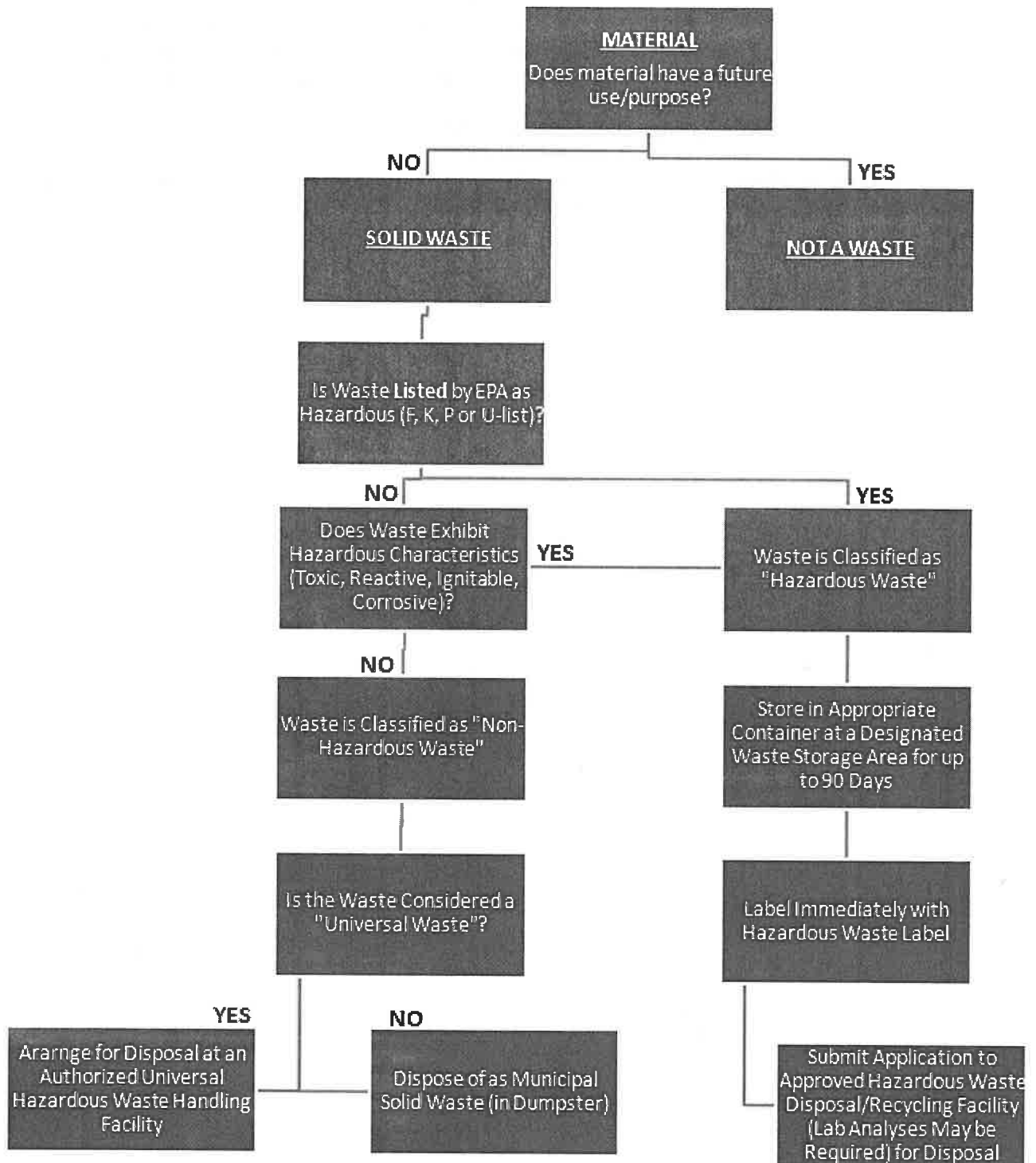
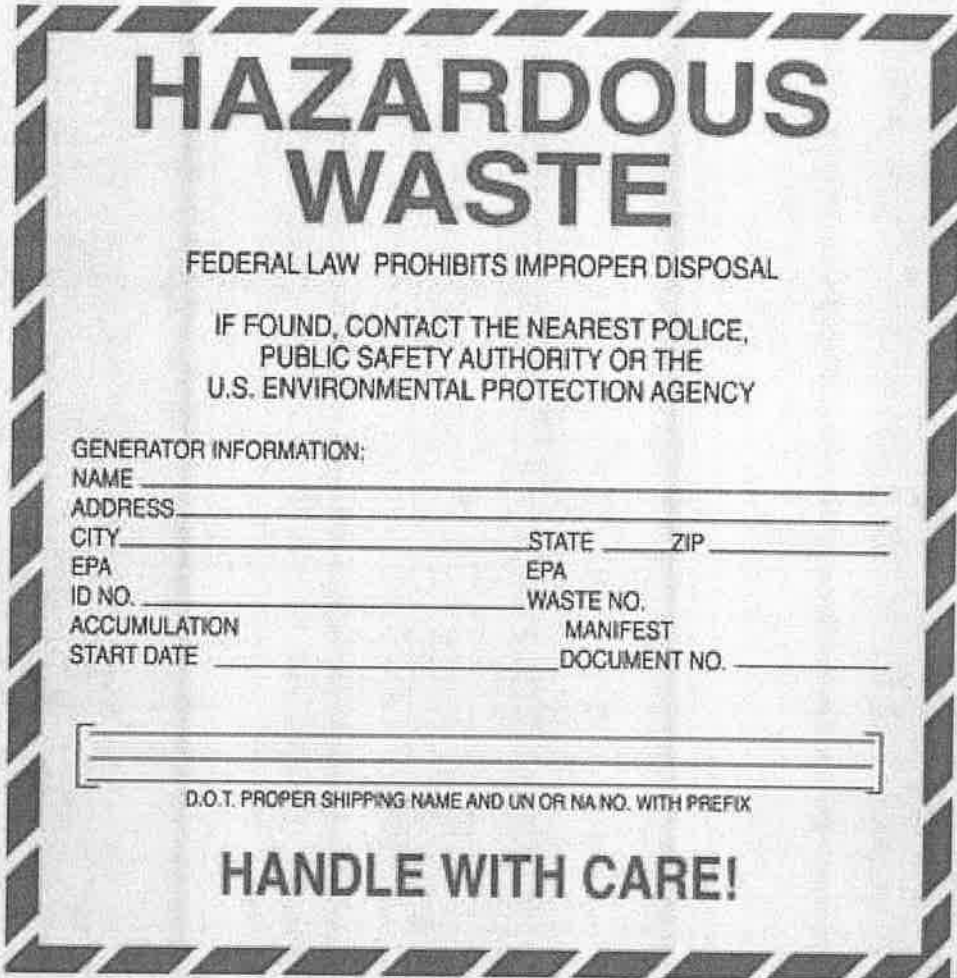


FIGURE 2 – Hazardous Waste Label



**HAZARDOUS  
WASTE**

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE,  
PUBLIC SAFETY AUTHORITY OR THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION:

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

EPA \_\_\_\_\_ EPA \_\_\_\_\_

ID NO. \_\_\_\_\_ WASTE NO. \_\_\_\_\_

ACCUMULATION \_\_\_\_\_ MANIFEST \_\_\_\_\_

START DATE \_\_\_\_\_ DOCUMENT NO. \_\_\_\_\_

\_\_\_\_\_

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

**HANDLE WITH CARE!**

## **SUBCONTRACTOR MANAGEMENT PROGRAM**

### **Purpose**

This Subcontractor Management Program establishes and implements safe work practices designed to minimize the risks associated with subcontract operations.

This Subcontractor Management Program also requires a detailed contractor selection criteria. When selecting a contractor, site supervisors must obtain and evaluate information regarding the contractor's safety and environmental performance.

Management must also ensure that contractors have their own written safe work practices. Agreement must be documented on appropriate contractor safety and environmental policies and practices before the contractor begins work at any company run facilities (refer to the company Master Service Agreement (MSA) required of all field contractors).

Contracted employees must be knowledgeable and experienced in the work practices necessary to perform their job in a safe and environmentally sound manner. Documentation of each contracted employee's expertise to perform his/her job and a copy of the contractor's safety policies, procedures and training records must be made evaluated prior to awarding any contract.

### **Contractor Selection Criteria**

A major step in achieving acceptable subcontractor performance is selecting a safe and environmentally responsible contractor. Therefore, it is appropriate for management to request that contractors submit specific performance information in their contract response proposals.

Management must:

1. Perform periodic evaluations of the performance of contract employees that verifies they are fulfilling their obligations, i.e. (site evaluation, incident tracking and/or BBS observation), and
2. maintain a subcontractor employee injury and illness log for all applicable subcontract work.

Site supervisors must inform subcontractors of any known hazards at the facility they are working on including, but not limited to potential for fires, explosions, slips, trips, falls, other injuries, and hazards associated with lifting operations.

Site supervisors must also develop and implement safe work practices to control the presence, entrance, and exit of subcontract employees in operation areas.

## General Requirements

Safe work practices should meet the most current provisions of any applicable federal, state, or local regulations. Company safety manuals clearly illustrate applicable safe work practices required at each location. The company safety manual (or equivalent) must be kept up to date and made readily available at each work site.

1. Subcontractors will be pre-qualified by reviewing their safety programs, safety training documents, and safety statistics prior to issuing a Master Service Agreement (MSA).
2. A series of safety metrics such as, Total Recordable Incident Rate (TRIR), Experience Modifier Rating (EMR), Lost Time Incident Rate (LTIR), and Fatality Rate shall be used as a criteria for selecting subcontractors.

Any subcontractor failing to meet the following minimum safety metric criteria shall not be considered for work:

- Failing to maintain proper insurance coverage, MSA documentation, and/or applicable contractor license.
- Being cited by OSHA or other agency for a significant violation within the last three (3) years.
- Experience modification rating (EMR) in excess of 1.0 for the previous three (3) year average.
- Total Recordable Incident Rate (TRIR) or Lost Time Incident Rate (LTIR) for a contractor is in excess of 4.0.

The contractor safety questionnaire attached to the appendix of this document shall be utilized for this purpose.

3. Subcontractors shall be included in pre-job meetings or kick-off meetings, and safety orientations. Subcontractors must check in with the Company site supervisor daily to ensure all applicable personnel are included in pre-job safety orientations and pre-job meetings.
4. Subcontractors will be included in tailgate safety meetings, job safety analysis or hazard assessments, and on the job safety inspections. Subcontractors must check in with the Company site supervisor daily to ensure all applicable personnel are included in regular job safety inspections and participate in job hazard analysis.

**GENERAL SAFETY POLICIES****Section: 5.12 Subcontractor Management Program****Revision Number: 1****Revision Date: 6/20/2013****File Name: P512**

5. Post-job safety performance reviews are required of all subcontractors. At a minimum a rehash of the subcontractors performance with regard to the safety metrics stated above shall be completed by site supervisors upon completion of job.

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**ACKNOWLEDGEMENT AND RECEIPT  
OF SAFETY HANDBOOK**

**I CERTIFY THAT**

- I HAVE RECEIVED MY OWN COPY OF THE COMPANY SAFETY HANDBOOK;
- I HAVE READ AND UNDERSTAND THE REQUIREMENTS IN THE HANDBOOK, INCLUDING THE CODE OF SAFE PRACTICES; AND
- I HAVE BEEN INFORMED ABOUT AND UNDERSTAND THE CONDITIONS WHERE I WILL BE WORKING.

---

NAME (PLEASE PRINT)

---

SIGNATURE

---

DATE

## **WASTE ANALYSIS PLAN**

**RI-NU SERVICES LLC  
815 MISSION ROCK ROAD  
SANTA PAULA, CALIFORNIA 93060**



**RI-NU Services, LLC  
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Fontana, CA 92336**

**April 2017**

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## Attachments

Attachment 1	Waste Profile Sheets
Attachment 2	Procedure for Sampling Waste in Drums

## **SUMMARY OF WASTE ACCEPTANCE PRACTICES**

This Waste Analysis Plan (WAP) details the procedures for ensuring the Ri-Nu Services LLC facility located at 815 Mission Rock Road in Santa Paula, California (the facility) only accepts non-hazardous wastes. The following is a summary of the waste acceptance practices that are presented in more detail throughout this document:

1. It is the responsibility of the waste generator to conduct laboratory analysis of their waste stream to ensure it is not a hazardous waste prior to sending it to Ri-Nu for treatment and disposal.
2. The generator submits a "profile application" of the proposed waste stream to Ri-Nu for approval. The profile application includes:
  - a. A description of the waste stream (tank bottoms, drill mud, etc.).
  - b. A description of the process that generated the waste stream.
  - c. A physical description of the waste stream (color, odor, pH range, % solids).
  - d. Laboratory analytical conducted by a 3<sup>rd</sup> party State-certified laboratory for the waste stream confirming it is not a hazardous waste.
3. The generator submits an actual sample of the proposed waste stream to Ri-Nu.
4. Ri-Nu compares the waste stream sample to the profile description and conducts internal sample analyses in their in-house lab to compare to the 3<sup>rd</sup> party analytical submitted by the generator. The in-house lab will be used only for internal testing and will not be a State-certified lab used for complete waste profiling.
5. Ri-Nu also conducts bench scale treatability testing to be sure their treatment process can reduce the waste stream contaminants to levels below the facility's discharge limits. Even if the waste stream proves to be non-hazardous, if it cannot be treated sufficiently, it will not be accepted by the facility.
6. If the physical inspection of the waste stream sample matches the profile description and Ri-Nu's in-house laboratory analyses are consistent with the 3<sup>rd</sup> party analytical results, Ri-Nu will allow the generator to schedule delivery of their waste to the Ri-Nu facility.

7. When the generator's truck arrives at the Ri-Nu facility to transfer their waste, Ri-Nu conducts the following check for each load:
  - a. A sample of the waste stream is taken from the delivery truck before it is unloaded and physically compared to the original waste stream sample supplied by the generator. Physical comparisons include color, odor and % solids.
  - b. Ri-Nu's in-house lab then conducts additional "fingerprint" analyses of the sample from the delivery truck. This may include checking pH, flash point, metals content, etc.
8. If the waste load fails either the physical inspection or the analytical "fingerprint" check, it is rejected and the truck leaves the facility without unloading the waste.
9. The load check process takes roughly 30 minutes to complete. Once the load passes the load check, the waste is unloaded at the facility.
10. The waste generator is required to re-certify their waste characterization:
  - a. Annually for each waste stream managed by the Ri-Nu facility; and
  - b. Whenever a change in raw materials or a change in the process that creates the waste stream alters the characteristics of that waste.

These practices ensure that Ri-Nu does not accept a waste stream that is a hazardous waste.

## **1.0 INTRODUCTION**

In accordance with the Environmental Health Standards for the Management of Hazardous Waste, codified in the California Code of Regulations (CCR) 22 CCR §66264.13, and in accordance with Title 40 of the Code of Federal Regulations, Part 264 (40 CFR 264), this Waste Analysis Plan (WAP) is a description of the chemical and physical characteristics of the non-hazardous waste stored and treated at the Ri-Nu Services LLC facility located at 815 Mission Rock Road in Santa Paula, California (the facility). This WAP includes the waste analysis procedures, which help ensure that the facility has sufficient information to make sound storage, treatment, safety, and compliance decisions. Wastes stored at the facility are non-hazardous waste, sludge, and muds generated by a variety of sources. Non-hazardous waste streams accepted at the facility include, but are not limited to, the following:

- Sludge generated from truck washouts
- Drilling muds generated from the oil and gas industry
- Oil and gas production wastes
- Waste sludge generated from various industrial processes

This WAP describes the methods and procedures used to ensure that the waste streams received at the facility are those permitted for storage and treatment. Specifically, this WAP details procedures to ensure that a particular waste stream is “as described” by the generating activity and non-hazardous according to federal and state regulations.

To achieve the above goals, all incoming waste streams will undergo a pre-acceptance evaluation and a waste shipment evaluation. Outgoing waste streams will retain this characterization for offsite transportation and treatment or disposal. If altered, outgoing waste streams will be re-characterized as described below.

## **2.0 NON-HAZARDOUS WASTE CHARACTERIZATION**

Non-hazardous wastes managed at the facility are subject to waste analyses for a variety of purposes, including:

- Determination as to whether a solid waste is hazardous, and therefore, not acceptable for treatment at the facility, as defined by 40 CFR 261.3(a)(2) and CCR Title 22, Division 4.5, Chapters 11
- Determination of the constituents of each non-hazardous waste stream managed at the facility
- Determination as to whether a waste stream is restricted under 40 CFR 268 Subpart C
- Collection of sufficient information to safely manage waste at the facility, including determination of container specifications and Department of Transportation (DOT) shipping names, as applicable
- Confirmation that waste shipments conform with waste profile records and shipping papers
- Confirmation that the constituents of the waste are consistent with the outbound waste profile for offsite shipments of the waste

### **2.1 Waste Profiles**

Prior to initial receipt of waste at the facility, a full characterization of the waste stream must be performed by the generator of the waste. This characterization will include:

- A description of the waste stream.
- A description of the process that generated the waste stream.
- A physical description of the waste stream (color, odor, pH range, % solids).
- Laboratory analytical conducted by a 3rd party State-certified laboratory for the waste stream confirming it is not a hazardous waste.

The results of the full characterization constitute the waste profile. Full characterization identifies all of the constituents and characteristics necessary for proper designation and management of a

waste stream. Full characterization also accounts for 100% of the constituents in a waste stream (e.g., 30% oil and 70% water). A profile containing this information will be maintained for each waste stream from each separate generator. However, different waste streams with the same composition may share a common waste profile. Examples of the facility's liquid and solid waste profile sheets are included in Attachment 1.

Characterization of a waste stream may also utilize existing published or documented data on the non-hazardous waste or wastes generated from similar processes. A waste profile may incorporate data from several sources including information from a safety data sheet.

All waste streams will be periodically re-profiled in accordance with Section 2.3 of this WAP or whenever a change in raw materials or a change in the process that creates the waste stream alters the characteristics of that waste.

If the facility cannot, within reasonable certainty, determine whether a particular waste is properly identified by an existing profile, the waste will be considered to represent a new waste stream. For every new waste stream identified, a full characterization will be performed and a waste profile will be generated before the waste may be accepted at the facility.

In emergency situations (e.g., a spill response), the facility may receive and manage a waste prior to the completion of the waste profile. In such instances, the waste will be managed in accordance with the best existing knowledge of the waste. A complete waste profile will be generated by the generator as soon as practicable, at which time the waste will be managed in accordance with the profile information and this WAP.

## **2.2 Waste Characterization - Non-Hazardous Waste Determination**

California hazardous waste is regulated under *Environmental Health Standards for the Management of Hazardous Waste* (CCR Title 22, Division 4.5, Chapters 10 to 56). The regulation provides the guidelines for determining if a waste is Resource Conservation and Recovery Act (RCRA) hazardous or California (non-RCRA) hazardous. The first step is determining if a waste is a RCRA-hazardous waste by following the steps listed below:

- Determine if the waste exhibits one of the RCRA-hazardous waste characteristics (22 CCR 66261, Article 3):

- Ignitability (D001), for example if a waste is a liquid with a flash point is  $<140^{\circ}\text{F}$ .
- Corrosivity (D002), for example if a waste is a liquid with a pH is  $\leq 2$  or  $\geq 12$ .
- Reactivity (D003).
- Toxicity (D004 through D043) is determined by comparing the constituent concentrations in the analytical report to the regulatory levels that are presented in 22 CCR §66261.24. If the concentrations are equal to or greater than the contaminant threshold levels, the waste is a RCRA hazardous waste.
- Determine if the waste is a listed waste as defined by 22 CCR §66261.31 through §66261.33(f). Listed wastes include the following:
  - Waste from non-specific sources (F-Listed)
  - Waste from specific sources (K-Listed)
  - Discarded unused products including acutely hazardous (P-Listed) and toxic (U-Listed) wastes

If the waste does not meet the definition of a RCRA-hazardous waste, then the following steps will be completed to determine if the waste meets the definition of a non-RCRA hazardous waste:

- Determine if the waste exhibits a non-RCRA corrosivity characteristic. Non-RCRA corrosivity as defined in 22 CCR 66261.22 is if a waste is "not aqueous and, when mixed with an equivalent weight of water, produce a solution with a pH less than or equal to 2 or greater than or equal to 12.5; or is not a liquid and when mixed with an equivalent weight of water, produce a solution that corrodes steel at a rate of greater than 6.35 millimeters (0.25-inch) per year at  $130^{\circ}\text{F}$ ."
- Determine if the waste exhibits a non-RCRA toxicity characteristic as defined by 22 CCR 66261.24. Analytical results for liquids will be compared to the Soluble Threshold Limit Concentrations (STLCs). If a constituent of concern equals or exceeds the respective STLC, the waste will be characterized as a non-RCRA hazardous waste.
- Analytical results for solid wastes will be compared to the Total Threshold Limit Concentrations (TTLC) and if a constituent of concern equals or exceeds the respective Threshold Limit Concentration, the solid sample will be considered hazardous and therefore not acceptable at the facility. If the concentration of a constituent is at least 10-times the

STLC value for that chemical, it will be resubmitted for California's WET analysis, an analysis that determines the amount of the constituent that is soluble, for the specific constituent of concern. The WET analysis concentration for the constituent of concern will be compared to the STLC and if it equals or exceeds the STLC, the solid waste will be characterized as a non-RCRA hazardous waste, and therefore not acceptable at the facility.

- Has an acute oral LD<sub>50</sub> less than 2,500 milligrams per kilogram.
- Has an acute dermal LD<sub>50</sub> less than 4,300 milligrams per kilogram.
- Has an acute inhalation LC<sub>50</sub> less than 10,000 parts per million as a gas or a vapor.
- Has an acute aquatic 96-hour LC<sub>50</sub> less than 500 milligrams per liter when tested on fish using a specified test method (fish test).
- Contains a single or combined total concentration equal to or greater than 0.001 percent by weight of any of the following chemicals:
  - 2-Acetylaminofluorene (2-AAF)
  - Acrylonitrile
  - 4-Aminodiphenyl
  - Benzidine and its salts
  - Bis (Chloromethyl) there (BCME)
  - Methyl chloromethyl ether
  - 1,2-Dibromo-1-chloropropane (DBCP)
  - 3,3'-Dichlorobenzidine and its salts (DCB)
  - 4-Dimehtylaminoazobenzene (DAB)
  - Ethyleneimine (EL)
  - Alpha-Naphthylamine (1-NA)
  - Beta-Naphthylamine (2-NA)
  - 4-Nitrobiphenyl (4-NBP)
  - N-Nitrosodiemthylamine (DMN)
  - Beta-Propiolactone
  - Vinyl chloride (VCM)
- Has been shown through experience or testing to pose hazards to human health or the environment because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment.

- Determine if the waste is on the M List. An M-listed waste is a waste that has additionally added mercury as per Article 4.1 of Chapter 11, Title 22.
- Determine if the waste is found on or contains substances listed in Appendix X of Title 22, which are presumed to be hazardous waste unless, it is determined that the waste is not a hazardous waste based on procedures set forth above.
- Determine if the waste is extremely hazardous pursuant to any of the criteria of section 66261.110 or 66261.113.

If the waste does not meet the definition of a RCRA-hazardous waste or a non-RCRA hazardous waste, then it is acceptable for treatment at the facility.

Waste generated as a result of on-site treatment shall be characterized by collecting representative samples of the waste, conducting laboratory analyses on the samples, and evaluating data as described above. The lab analyses will be conducted by a contracted State-certified lab and not the on-site lab. Once characterized, a profile for the off-site disposal will be obtained for the waste (unless an existing profile already exists for ongoing waste stream) and the waste will be transported to the off-site disposal facility by a licensed waste hauler. Examples of onsite generated waste include clarifier sludge, spent filter media, etc.

### **2.3 Waste Characterization Frequency**

Each waste stream managed by the facility shall undergo full characterization annually. Waste streams that have not been managed at the facility in a preceding year do not need to be re-characterized until such time as the waste is again received at the facility.

Except as specified below, full characterization may consist of existing published or documented data on the waste or on waste generated from similar processes as well as laboratory analysis of a representative sample of the waste stream. If existing data are used, the facility will obtain confirmation from the generator that the process generating the non-hazardous waste has not significantly changed.

In the following circumstances, a waste stream will undergo full characterization consisting solely of laboratory analyses, supplemented with process knowledge as necessary to confirm the waste is non-hazardous:

- The facility has been notified, or has reason to believe, that the process or operation generating the non-hazardous waste has significantly changed.
- There is a discrepancy between a waste designation indicated on the profile for that waste and the waste designation indicated by the results of screening analyses performed upon receipt of the waste.
- The first time a waste undergoes full characterization pursuant to the WAP.
- No more than five years from the last full characterization by laboratory analysis, or the next time a waste is received at the facility, whichever is longer.

Analytical requirements will be those specified in Section 1.1.6 of this WAP. Such characterization will occur prior to receipt of the next shipment of the waste stream in question.

## **2.4 Analytical Methods**

All non-hazardous waste sampling and analysis will be conducted in accordance with the protocols stipulated in U.S. EPA SW-846, *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods*. SW-846 functions primarily as a guidance document setting forth acceptable, although not required, methods for the regulated and regulatory communities to use in responding to RCRA-related sampling and analysis requirements. Such analyses may serve to further characterize a waste stream for which documented information is inadequate, to periodically confirm profile information, or to rectify a discrepancy.

The State-certified laboratory employed to obtain analytical data must certify its use of the methods specified and must be able to provide, upon request, documentation of acceptable quality assurance/quality control procedures. Acceptable documentation will include compliance with the quality control section of SW-846 procedures. The following guidance is taken from *SW-846, Guidance Regarding Flexibility Inherent to SW-846 Methods and the Precedence of SW-846 Quality Control Criteria*.

- The specific products and instrument settings cited in SW-846 methods represent those products and settings used during method development or subsequently evaluated by the Agency for use in the method. Glassware, reagents, supplies, equipment, and settings other than those listed in this manual may be employed, provided that method performance

appropriate for the intended RCRA application has been documented. Such performance includes consideration of precision, accuracy (or bias), recovery, representativeness, comparability, and sensitivity (detection, quantitation, or reporting limits) relative to the data quality objectives for the intended use of the analytical results. In response to this inherent flexibility, if an alternative analytical procedure is employed, then the U.S. EPA expects the laboratory to demonstrate and document that the procedure is capable of providing appropriate performance for its intended application. This demonstration must not be performed after the fact, but as part of the laboratory's initial demonstration of proficiency with the method. The documentation should be in writing, maintained in the laboratory, and available for inspection upon request by authorized representatives of the appropriate regulatory authorities. The documentation should include the performance data as well as a detailed description of the procedural steps as performed (i.e., a written standard operating procedure).

- Given this allowance for flexibility, the U.S. EPA wishes to emphasize that this manual also contains procedures for "method-defined parameters", where the analytical result is wholly dependent on the process used to make the measurement. Examples include the use of the TCLP to prepare a leachate, and the flash point, pH, paint filter liquids, and corrosivity tests. In these instances, changes to the specific methods may change the end result and incorrectly identify a waste as nonhazardous. Therefore, when the measurement of such method-defined parameters is required by regulation, those methods are not subject to the flexibility afforded in other methods.
- Analysts and data users are advised that even for those analytes that are not method-defined, different procedures may produce some difference in results. Common examples include the differences in recoveries of phenolic compounds extracted from water by separatory funnel (Method 3510) and continuous liquid-liquid (Method 3520) extraction techniques, differences in recoveries of many compounds between Soxhlet (Method 3540) and ultrasonic (Method 3550) extraction techniques, and differences resulting from the choice of acid digestion of metals (Method 3050) or microwave digestion (Method 3051). Where practical, the Agency has included guidance in the individual methods regarding known potential problems, and analysts are advised to review this information carefully in choosing or modifying analytical procedures. Chapter One describes a variety of quality control (QC) procedures that may be used to evaluate the quality of the analytical results. Additional QC procedures may be described in the individual methods. The results of these QC procedures should be used by the analyst to evaluate if the choice

of the analytical procedures and/or any modifications are appropriate to generate data of the quality necessary to satisfy the data quality needs of the intended application.

- The performance data included in the SW-846 methods are not intended to be used as absolute QC acceptance criteria for method performance. The data are intended to be guidance, by providing typical method performance in typical matrices, to assist the analyst in selection of the appropriate method for the intended application. In addition, it is the responsibility of the laboratory to establish actual operating parameters and in-house QC acceptance criteria, based on its own laboratory standard operating procedures and in-house QC program, to demonstrate appropriate performance of the methods used in that laboratory for the RCRA analytical applications for which they are intended.
- The regulated community is further advised that the methods here or from other sources need only be used for those specific analytes of concern that are subject to regulation or other monitoring requirements. The fact that a method provides a long list of analytes does not mean that each of those analytes is subject to any or all regulations, or that all of those analytes must be analyzed each time the method is employed, or that all of the analytes can be analyzed using a single sample preparation procedure. It is the U.S. EPA's intention that the target analyte list for any procedure includes those analytes necessary to meet the data quality objectives of the project, i.e., those analytes subject to monitoring requirements and set out in a RCRA permit (or other applicable regulation), plus those analytes used in the methods for QC purposes, such as surrogates, internal standards, system performance check compounds, etc. Additional analytes, not included on the analyte list of a particular method(s), but needed for a specific project, may be analyzed by that particular method(s), if appropriate performance can be demonstrated for the analytes of concern in the matrices of concern at the levels of concern.

Waste Extraction Test analyses will be conducted according to the method set forth in 22 CCR Appendix II *Waste Extraction Test (WET) Procedures*. The WET extraction solution shall consist of 0.2M sodium citrate at pH 5.0 + 0.1, which is prepared by titrating an appropriate amount of analytical grade citric acid in deionized water with 4.0N NaOH, except that the extraction solution for the determination of hexavalent chromium shall consist of deionized water.

Tables 1 and 2 summarize recommended, analyte-specific test methods.

## **2.5 Sampling Procedures**

Many waste streams are heterogeneous; therefore, care must be taken to obtain a representative sample. In sampling wastes, consideration should be given to the uniformity of the waste in a container and to daily variations in production, which may cause the waste stream to vary. Table 3 contains a summary of waste sampling methods for different types of wastes. Recommended sampling access points for different waste containers and soil are listed in Table 4. Recommended numbers of samples to be taken for different types of wastes and soil are provided in Table 5.

Samples from multiple containers of the same waste will be composited for analysis (except for heterogeneous or layered wastes). Samples to be analyzed for volatile organics should be grab samples and should not be composited.

Strict chain-of-custody records will be maintained for these samples collected for regulatory compliance. Each person who handles the sample will, upon receipt, sign and date the identification tag. To ensure adequate chain-of-custody procedures, Volume II — Chapter Nine of SW-846, 3rd Edition must be followed.

The sample container must be compatible with the waste. Except for some solvents and oils, a plastic (1 quart) bottle is best. U.S. EPA procedures (SW-846) for sample preservation must be followed and U.S. EPA and DOT regulations for transporting hazardous materials/wastes must be met. Laboratories must certify that their procedures are U.S. EPA approved, and in that certification, reference U.S. EPA SW-846.

### **3.0 FACILITY CONFIRMATION OF WASTE STREAMS**

Before Ri-Nu accepts a waste into their facility, they will confirm that the waste stream matches the previously completed and accepted non-hazardous waste profile. This process will involve:

- a. The generator submits an actual sample of the proposed waste stream to Ri-Nu.
- b. Ri-Nu will compare the waste stream sample to the profile description and conducts internal sample analyses in their in-house lab to compare to the 3rd party analytical submitted by the generator. The in-house lab will be used only for internal testing and will not be a State-certified lab used for complete waste profiling.
- c. Ri-Nu will also conduct bench scale treatability testing to be sure their treatment process can reduce the waste stream contaminants to levels below the facility's discharge limits. Even if the waste stream proves to be non-hazardous if it cannot be treated sufficiently it will not be accepted by the facility.
- d. If the physical inspection of the waste stream sample matches the profile description and Ri-Nu's in house laboratory analyses are consistent with the 3rd party analytical results, Ri-Nu will allow the generator to schedule delivery of their waste to the Ri-Nu facility.
- e. When the generator's truck arrives at the Ri-Nu facility to transfer their waste, Ri-Nu conducts the following check for each load:
  - i. A sample of the waste stream is taken from the delivery truck before it is unloaded and physically compared to the original waste stream sample supplied by the generator. Physical comparisons include color, odor and % solids.
  - ii. Ri-Nu's in-house lab then conducts additional analyses of the sample from the delivery truck. This may include checking pH, flash point, metals content, etc.
- f. If the waste load fails either the physical inspection or the analytical check, it is rejected and the truck leaves the facility without unloading the waste.
- g. The load check process takes roughly 30 minutes to complete. Once the load passes the load check, the waste is unloaded at the facility.

#### **4.0 WASTE STREAM ANALYTICAL REQUIREMENT EXAMPLES**

When profiling a waste stream, waste analysis parameters and the rationale for using a specific analytical parameter are based on the physical as well as the chemical characteristics of each waste stream. Only analyses relevant to the non-hazardous waste characteristics for a particular waste stream are necessary. In some cases, the facility will have to test for specific constituents.

Physical characterization includes parameters such as container information on labels, visual appearance (color, odor, physical state, etc.), pH, flash point, moisture content, specific gravity, viscosity, miscibility in water, and the quantity received. Chemical characterization includes laboratory analyses necessary to delineate the chemical nature of the waste stream.

This WAP section provides examples of waste streams expected to be received at the facility and the analytical required to profile each stream.

At a minimum, every profile application should include laboratory results for Title 22 metals.

##### **4.1 Oil Exploration and Production Wastes (E&P Wastes)**

The term "E&P Wastes" is used to describe wastes generated by exploration, development, and production activities related to oil production, including the extraction of crude oil from the ground, and subsequent purification processes that takes place to remove co-produced excess water and other unwanted wastes into three categories: produced water; drilling wastes, and associated wastes (Department of Toxic Substances Control, 2002). E&P wastes intrinsic to oil production are currently exempt from regulations as hazardous wastes under Federal law, pursuant to 40 CFR Section 261.4(b)(5). The E&P waste exemption was also incorporated into California regulations pursuant to 22 CCR Sections 66261.4(b)(2) and 66261.24(a)(1). This exemption applies in California in cases where the waste is hazardous solely by meeting the federal characteristic for toxicity under the Toxicity Characteristic Leaching Procedure (TCLP). Therefore, a waste that is hazardous solely by meeting or exceeding the maximum contaminant concentration for constituents extracted by TCLP, and for which federal regulatory thresholds have been established, is exempted from regulation as hazardous waste in California. However, the exemption does not apply if toxicity is determined based on criteria other than TCLP, or the waste meets any of the three characteristics of hazardous waste codified in 22 CCR Chapter 11 Article 3, Sections 66261.20 et seq., namely ignitability, corrosivity, and reactivity (Department of Toxic Substances Control 2002).

The United States Environmental Protection Agency (U.S. EPA) published lists of exempt and non-exempt E&P wastes, although the lists should not be considered to be comprehensive (U.S. EPA 2002). The exempt wastes list that applies to those wastes generated by E&P operations include the following:

- Produced water
- Drilling fluids
- Drill cuttings
- Workover wastes
- Rigwash
- Drilling fluids and cuttings from offshore operations disposed of onshore
- Geothermal production fluids
- Liquid Hydrocarbons produced from the production stream but not from oil refining
- Well completion, treatment, and stimulation fluids
- Basic sediment, water, and other tank bottoms from storage facilities that hold product and exempt waste
- Produced sand
- Packing fluids
- Hydrogen sulfide abatement wastes from geothermal energy production

The non-exempt wastes list that applies to those wastes generated by E&P operations include the following:

- Unused fracturing fluids or acids
- Gas plant cooling tower cleaning wastes
- Vacuum truck and drum rinsate from trucks and drums transporting or containing non-exempt waste
- Liquid and solid wastes generated by crude oil and tank bottom reclaimers
- Oil and gas service company wastes such as empty drums, drum rinsate, sandblast media, painting wastes, spent solvents, spilled chemicals, and waste acids
- Refinery wastes
- Waste compressor oil, filters, and blowdown



This following table summarizes profiling analytical requirements for select E&P waste streams:

Waste Stream	Potential Analytes of Concern	Analytical Methods
Produced water	VOCs Title 22 metals (Pb, As, Ba, etc.) Oil & Grease	EPA 8260 EPA 6010, 6020 EPA 1664
Tank bottoms	VOCs Title 22 metals (Pb, As, Ba, etc.) Flash point Oil & Grease	EPA 8260 EPA 6010, 6020 EPA 1010 EPA 1664
Drill mud	VOCs Title 22 metals (Pb, As, Ba, etc.) pH Oil & Grease	EPA 8260 EPA 6010, 6020 EPA 9040, 150.1 EPA 1664

## 4.2 Miscellaneous Industrial Waste Streams

This following table summarizes profiling analytical requirements for other example waste streams:

<b>Waste Stream</b>	<b>Potential Analytes of Concern</b>	<b>Analytical Methods</b>
Industrial Wastewater Containing Metals (blowdown brine, metal finish wastewater)	Title 22 metals (Pb, As, Ba, etc.)	EPA 6010, 6020
Oily Wastewater (oil-water emulsions, UST site contaminated groundwater, bilge water)	VOCs Title 22 metals (Pb, As, Ba, etc.) Oil & Grease	EPA 8260 EPA 6010, 6020 EPA 1664
Industrial Wastewater Containing Organics (solvent bearing wastes, landfill leachate, winery wastewater)	VOCs Title 22 metals (Pb, As, Ba, etc.) Oil & Grease	EPA 8260 EPA 6010, 6020 EPA 1664

## **5.0 REFERENCES**

California Department of Public Health. California Code of Regulations Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Waste, Chapter 15 Interim Status Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities. 2016

Department of Toxic Substances Control. *Oil Exploration and Production Wastes Initiative*. May 2002.

United States Environmental Protection Agency. *Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations*. October 2002.

- *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods Compendium (EPA SW-846), Update V, Revision 8*. July 2014.
- *Federal Register: 40 Code of Federal Regulations Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities*. 2016.

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Tables

**Table 1**  
**Analytical Test Methods**

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Acenaphthene .....	8100, 8270, 8275, 8310, 8410
Acenaphthylene .....	8100, 8270, 8275, 8310, 8410
Acetaldehyde .....	8315
Acetone .....	8015, 8260, 8315
Acetonitrile .....	8015, 8033, 8260
Acetophenone .....	8270
2-Acetylaminofluorene .....	8270
1-Acetyl-2-thiourea .....	8270
Acifluorfen .....	8151
Acrolein (Propenal) .....	8015, 8260, 8315, 8316
Acrylamide .....	8032, 8316
Acrylonitrile .....	8015, 8031, 8260, 8316
Alachlor .....	8081
Aldicarb (Temik) .....	8318, 8321
Aldicarb sulfone .....	8318, 8321
Aldicarb sulfoxide .....	8321
Aldrin .....	8081, 8270
Allyl alcohol .....	8015, 8260
Allyl chloride .....	8021, 8260
2-Aminoanthraquinone .....	8270
Aminoazobenzene .....	8270
4-Aminobiphenyl .....	8270
Aminocarb .....	8321
2-Amino-4,6-dinitrotoluene (2-Am-DNT) .....	8330
4-Amino-2,6-dinitrotoluene (4-Am-DNT) .....	8330
3-Amino-9-ethylcarbazole .....	8270
Anilazine .....	8270
Aniline .....	8131, 8270
o-Anisidine .....	8270
Anthracene .....	8100, 8270, 8275, 8310, 8410
Aramite .....	8270
Aroclor-1016 (PCB-1016) .....	8082, 8270
Aroclor-1221 (PCB-1221) .....	8082, 8270
Aroclor-1232 (PCB-1232) .....	8082, 8270
Aroclor-1242 (PCB-1242) .....	8082, 8270
Aroclor-1248 (PCB-1248) .....	8082, 8270
Aroclor-1254 (PCB-1254) .....	8082, 8270
Aroclor-1260 (PCB-1260) .....	8082, 8270
Aspon .....	8141
Asulam .....	8321
Atrazine .....	8141
Azinphos-ethyl .....	8141
Azinphos-methyl .....	8141, 8270
Barban .....	8270, 8321
Baygon (Propoxur) .....	8318, 8321
Bendiocarb .....	8321
Benefin .....	8091
Benomyl .....	8321
Bentazon .....	8151
Benzal chloride .....	8121
Benzaldehyde .....	8315
Benz(a)anthracene .....	8100, 8270, 8275, 8310, 8410
Benzene .....	8021, 8260
Benzenethiol (Thiophenol) .....	8270

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Benidine.....	8270, 8325
Benzo(b)fluoranthene.....	8100, 8270, 8275, 8310
Benzo(j)fluoranthene.....	8100
Benzo(k)fluoranthene.....	8100, 8270, 8275, 8310
Benzoic acid.....	8270, 8410
Benzo(g,h,i)perylene.....	8100, 8270, 8275, 8310
Benzo(a)pyrene.....	8100, 8270, 8275, 8310, 8410
p-Benzoquinone.....	8270
Benzotrichloride.....	8121
Benzoylprop ethyl.....	8325
Benzyl alcohol.....	8270
Benzyl benzoate.....	8061
Benzyl chloride.....	8021, 8121, 8260
BHC (-Hexachlorocyclohexane).....	8081, 8121, 8270
β-BHC (β -Hexachlorocyclohexane).....	8081, 8121, 8270
δ-BHC (δ -Hexachlorocyclohexane).....	8081, 8121, 8270
γ-BHC (Lindane, (γ-Hexachlorocyclohexane).....	8081, 8121, 8270
Bis(2-chloroethoxy)methane.....	8111, 8270, 8410
Bis(2-chloroethyl) ether.....	8111, 8270, 8410, 8430
Bis(2-chloroethyl)sulfide.....	8260
Bis(2-chloroisopropyl) ether.....	8021, 8111, 8270, 8410
Bis(2-n-butoxyethyl) phthalate.....	8061
Bis(2-ethoxyethyl) phthalate.....	8061
Bis(2-ethylhexyl) phthalate.....	8061, 8270, 8410
Bis(2-methoxyethyl) phthalate.....	8061
Bis(4-methyl-2-pentyl)-phthalate.....	8061
Bolstar (Sulprofos).....	8141
Bromacil.....	8321
Bromoacetone.....	8021, 8260
4-Bromoaniline.....	8131
Bromobenzene.....	8021, 8260
Bromochloromethane.....	8021, 8260
2-Bromo-6-chloro-4-nitroaniline.....	8131
Bromodichloromethane.....	8021, 8260
2-Bromo-4,6-dinitroaniline.....	8131
4-Bromofluorobenzene.....	8260
Bromoform.....	8021, 8260
Bromomethane.....	8021, 8260
4-Bromophenyl phenyl ether.....	8111, 8270, 8275, 8410
Bromoxynil.....	8270
Butanal.....	8315
1-Butanol (n-Butyl alcohol).....	8015
n-Butanol.....	8260
2-Butanone (Methyl ethyl ketone, MEK).....	8015, 8260
Butralin.....	8091
n-Butyl alcohol (1-Butanol).....	8015
t-Butyl alcohol.....	8015
n-Butylbenzene.....	8021, 8260
sec-.....	8021, 8260
tert-Butylbenzene.....	8021, 8260
Butyl benzyl phthalate.....	8061, 8270, 8410
2-sec-Butyl-4,6-dinitrophenol (DNBP, Dinoseb).....	8041, 8151, 8270, 8321
Caffeine.....	8321
Captafol.....	8081, 8270

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Captan.....	8270
Carbaryl (Sevin) .....	8270, 8318, 8321, 8325
Carbendazim.....	8321
Carbofuran (Furaden) .....	8270, 8318, 8321
Carbon disulfide .....	8260
Carbon tetrachloride .....	8021, 8260
Carbophenothion.....	8141, 8270
Chloral hydrate .....	8260
Chloramben .....	8151
Chlordane (NOS) .....	8270
"-Chlordane .....	8081
γ-Chlordane .....	8081
Chlorfenvinphos .....	8141, 8270
Chloroacetonitrile .....	8260
2-Chloroacrylonitrile .....	8015
2-Chloroaniline .....	8131
3-Chloroaniline .....	8131
4-Chloroaniline .....	8131, 8270, 8410
Chlorobenzene .	8021, 8260
Chlorobenzilate .....	8081, 8270
2-Chlorobiphenyl .....	8082, 8275
2-Chloro-1,3-butadiene (Chloroprene) .....	8021, 8260
1-Chlorobutane .....	8260
Chlorodibromomethane (Dibromochloromethane).....	8021, 8260
2-Chloro-4,6-dinitroaniline .....	8131
1-Chloro-2,4-dinitrobenzene.....	8091
1-Chloro-3,4-dinitrobenzene.....	8091
Chloroethane .....	8021, 8260
2-Chloroethanol .....	8021, 8260, 8430
2-(2-Chloroethoxy)ethanol .....	8430
2-Chloroethyl vinyl ether.....	8021, 8260
Chloroform.....	8021, 8260
1-Chlorohexane .....	8260
Chloromethane.....	8021, 8260
5-Chloro-2-methylaniline.....	8270
Chloromethyl methyl ether .....	8021
2-Chloro-5-methylphenol .....	8041
4-Chloro-2-methylphenol .....	8041
4-Chloro-3-methylphenol .....	8041, 8270, 8410
3-(Chloromethyl)pyridine hydrochloride .....	8270
1-Chloronaphthalene .....	8270, 8275
2-Chloronaphthalene .....	8121, 8270, 8410
Chloroneb .....	8081
2-Chloro-4-nitroaniline .....	8131
4-Chloro-2-nitroaniline .....	8131
1-Chloro-2-nitrobenzene .....	8091
1-Chloro-4-nitrobenzene .....	8091
2-Chloro-6-nitrotoluene .....	8091
4-Chloro-2-nitrotoluene .....	8091
4-Chloro-3-nitrotoluene .....	8091
2-Chlorophenol .....	8041, 8270, 8410
3-Chlorophenol .....	8041
4-Chlorophenol .....	8041, 8410
4-Chloro-1,2-phenylenediamine .....	8270

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
4-Chloro-1,3-phenylenediamine.....	8270
4-Chlorophenyl phenyl ether .....	8111, 8270, 8410
2-Chlorophenyl 4-nitrophenyl ether .....	8111
3-Chlorophenyl 4-nitrophenyl ether .....	8111
4-Chlorophenyl 4-nitrophenyl ether .....	8111
o-Chlorophenyl thiourea .....	8325
Chloroprene (2-Chloro-1,3-butadiene) .....	8021, 8260
3-Chloropropionitrile .....	8260
Chloropropham .....	8321
Chloropropylate.....	8081
Chlorothalonil.....	8081
2-Chlorotoluene .....	8021, 8260
4-Chlorotoluene .....	8021, 8260
Chloroxuron .....	8321
Chlorpyrifos .....	8141
Chlorpyrifos methyl .....	8141
Chrysene .....	8100, 8270, 8275, 8310, 8410
Coumaphos.....	8141, 8270
Coumarin Dyes.....	8321
p-Cresidine .....	8270
o-Cresol (2-Methylphenol).....	8041, 8270, 8410
m-Cresol (3-Methylphenol).....	8041, 8270
p-Cresol (4-Methylphenol).....	8041, 8270, 8275, 8410
Crotonaldehyde.....	8015, 8260, 8315
Crotoxypfos.....	8141, 8270
Cyclohexanone.....	8315
2-Cyclohexyl-4,6-dinitrophenol.....	8041, 8270
2,4-D.....	8151, 8321
Dalapon.....	8151, 8321
2,4-DB.....	8151, 8321
DBCP (1,2-Dibromo-3-chloropropane).....	8011, 8021, 8081, 8260, 8270
2,4-D, butoxyethanol ester .....	8321
DCM (Dichloromethane, Methylene chloride) .....	8021, 8260
DCPA.....	8081
DCPA diacid .....	8151
4,4'-DDD.....	8081, 8270
4,4'-DDE.....	8081, 8270
4,4'-DDT .....	8081, 8270
DDVP (Dichlorvos, Dichlorovos).....	8141, 8270, 8321
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl .....	8275
Decanal .....	8315
Demeton-O, and Demeton-S.....	8141, 8270
2,4-D, ethylhexyl ester .....	8321
Diallate .....	8081, 8270
Diamyl phthalate .....	8061
2,4-Diaminotoluene .....	8270
Diazinon .....	8141
Dibenz(a,h)acridine .....	8100
Dibenz(a,j)acridine .....	8100, 8270
Dibenz(a,h)anthracene .....	8100, 8270, 8275, 8310
7H-Dibenzo(c,g)carbazole .....	8100
Dibenzofuran .....	8270, 8275, 8410
Dibenzo(a,e)pyrene .....	8100, 8270
Dibenzo(a,h)pyrene.....	8100

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Dibenzo(a,i)pyrene .....	8100
Dibenzothiophene .....	8275
Dibromochloromethane (Chlorodibromomethane) .....	8021, 8260
1,2-Dibromo-3-chloropropane (DBCP).....	8011, 8260, 8270
1,2-Dibromoethane (EDB, Ethylene dibromide) .....	8011, 8021, 8260
Dibromofluoromethane .....	8260
Dibromomethane .....	8021, 8260
2,6-Dibromo-4-nitroaniline .....	8131
2,4-Dibromophenyl 4-nitrophenyl ether .....	8111
Di-n-butyl phthalate .....	8061, 8270, 8410
Dicamba .....	8151, 8321
Dichlone .....	8081, 8270
3,4-Dichloroaniline .....	8131
1,2-Dichlorobenzene .....	8021, 8121, 8260, 8270, 8410
1,3-Dichlorobenzene .....	8021, 8121, 8260, 8270, 8410
1,4-Dichlorobenzene .....	8021, 8121, 8260, 8270, 8410
3,3'-Dichlorobenzidine .....	8270, 8325
3,5-Dichlorobenzoic acid .....	8151
2,3-Dichlorobiphenyl .....	8082, 8275
3,3'-Dichlorobiphenyl .....	8275
cis-1,4-Dichloro-2-butene.....	8260
trans-1,4-Dichloro-2-butene .....	8260
Dichlorodifluoromethane .....	8021, 8260
1,1-Dichloroethane .....	8021, 8260
1,2-Dichloroethane.....	8021, 8260
1,1-Dichloroethene (Vinylidene chloride).....	8021, 8260
cis-1,2-Dichloroethene .....	8021, 8260
trans-1,2-Dichloroethene .....	8021, 8260
Dichlorofenthion .....	8141
Dichloromethane (DCM, Methylene chloride) .....	8021, 8260
2,6-Dichloro-4-nitroaniline .....	8131
2,3-Dichloronitrobenzene .....	8091
2,4-Dichloronitrobenzene .....	8091
3,5-Dichloronitrobenzene.....	8091
3,4-Dichloronitrobenzene .....	8091
2,5-Dichloronitrobenzene .....	8091
2,3-Dichlorophenol .....	8041
2,4-Dichlorophenol .....	8041, 8270, 8410
2,5-Dichlorophenol .....	8041
2,6-Dichlorophenol .....	8041, 8270
3,4-Dichlorophenol.....	8041
3,5-Dichlorophenol.....	8041
2,4-Dichlorophenol 3-methyl-4-nitrophenyl ether .....	8111
2,6-Dichlorophenyl 4-nitrophenyl ether .....	8111
3,5-Dichlorophenyl 4-nitrophenyl ether .....	8111
2,5-Dichlorophenyl 4-nitrophenyl ether .....	8111
2,4-Dichlorophenyl 4-nitrophenyl ether .....	8111
2,3-Dichlorophenyl 4-nitrophenyl ether .....	8111
3,4-Dichlorophenyl 4-nitrophenyl ether .....	8111
Dichloroprop (Dichloroprop).....	8151, 8321
1,2-Dichloropropane .....	8021, 8260
1,3-Dichloropropane .....	8021, 8260
2,2-Dichloropropane .....	8021, 8260
1,3-Dichloro-2-propanol .....	8021, 8260

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
1,1-Dichloropropene .....	8021, 8260
cis-1,3-Dichloropropene .....	8021, 8260
trans-1,3-Dichloropropene .....	8021, 8260
Dichlorovos (DDVP, Dichlorvos) .....	8141, 8270, 8321
Dichlorprop (Dichloroprop) .....	8151, 8321
Dichlorvos (DDVP, Dichlorvos) .....	8141, 8270, 8321
Dicrotophos .....	8141, 8270
Dicofol .....	8081
Dicyclohexyl phthalate .....	8061
Dieldrin .....	8081, 8270
1,2,3,4-Diepoxybutane .....	8260
Diesel range organics (DRO) .....	8015, 8440
Diethylene glycol .....	8430
Diethyl ether .....	8015, 8260
Diethyl phthalate .....	8061, 8270, 8410
Diethylstilbestrol .....	8270
Diethyl sulfate .....	8270
1,4-Difluorobenzene .....	8260
Dihexyl phthalate .....	8061
Dihydrosaffrole .....	8270
Diisobutyl phthalate .....	8061
Dimethoate .....	8141, 8270, 8321
3,3'-Dimethoxybenzidine .....	8270, 8325
Dimethylaminoazobenzene .....	8270
2,5-Dimethylbenzaldehyde .....	8315
7,12-Dimethylbenz(a)anthracene .....	8270
3,3'-Dimethylbenzidine .....	8270, 8325
,"-Dimethylphenethylamine .....	8270
2,3-Dimethylphenol .....	8041
2,4-Dimethylphenol .....	8041, 8270
2,5-Dimethylphenol .....	8041
2,6-Dimethylphenol .....	8041
3,4-Dimethylphenol .....	8041
Dimethyl phthalate .....	8061, 8270, 8410
Dinitramine .....	8091
2,4-Dinitroaniline .....	8131
1,2-Dinitrobenzene .....	8091, 8270
1,3-Dinitrobenzene (1,3-DNB) .....	8091, 8270, 8330
1,4-Dinitrobenzene .....	8091, 8270
4,6-Dinitro-2-methylphenol .....	8270, 8410
2,4-Dinitrophenol .....	8041, 8270, 8410
2,5-Dinitrophenol .....	8041
2,4-Dinitrotoluene (2,4-DNT) .....	8091, 8270, 8330, 8410
2,6-Dinitrotoluene (2,6-DNT) .....	8091, 8270, 8330, 8410
Dinocap .....	8270
Dinonyl phthalate .....	8061
Dinoseb (2-sec-Butyl-4,6-dinitrophenol, DNBP) .....	8041, 8151, 8270, 8321
Di-n-octyl phthalate .....	8061, 8270, 8410
Dioxacarb .....	8318
1,4-Dioxane .....	8015, 8260
Dioxathion .....	8141, 8270
Di-n-propyl phthalate .....	8410
Diphenylamine .....	8270
5,5-Diphenylhydantoin .....	8270

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
1,2-Diphenylhydrazine .....	8270
Disperse Blue 3 .....	8321
Disperse Blue 14 .....	8321
Disperse Brown 1 .....	8321
Disperse Orange 3 .....	8321
Disperse Orange 30 .....	8321
Disperse Red 1 .....	8321
Disperse Red 5 .....	8321
Disperse Red 13 .....	8321
Disperse Red 60 .....	8321
Disperse Yellow 5 .....	8321
Disulfoton .....	8141, 8270, 8321
Diuron .....	8321, 8325
1,3-DNB (1,3-Dinitrobenzene) .....	8091, 8270, 8330
DNBP (2-sec-Butyl-4,6-dinitrophenol, Dinoseb) .....	8151, 8270, 8321
2,4-DNT (2,4-Dinitrotoluene) .....	8091, 8270, 8275, 8330, 8410
2,6-DNT (2,6-Dinitrotoluene) .....	8091, 8270, 8330, 8410
EDB (1,2-Dibromoethane, Ethylene dibromide) .....	8011, 8021, 8260
Endosulfan I .....	8081, 8270
Endosulfan II .....	8081, 8270
Endosulfan sulfate .....	8081, 8270
Endrin .....	8081, 8270
Endrin aldehyde .....	8081, 8270
Endrin ketone .....	8081, 8270
Epichlorohydrin .....	8021, 8260
EPN .....	8141, 8270
Ethanol .....	8015, 8260
Ethion .....	8141, 8270
Ethoprop .....	8141
Ethyl acetate .....	8015, 8260
Ethylbenzene .....	8021, 8260
Ethyl carbamate .....	8270
Ethyl cyanide (Propionitrile) .....	8015, 8260
Ethylene dibromide (EDB, 1,2-Dibromoethane) .....	8021, 8260
Ethylene glycol .....	8015, 8430
Ethylene oxide .....	8015, 8260
Ethyl methacrylate .....	8260
Ethyl methanesulfonate .....	8270
Etridiazole .....	8081
Famphur .....	8141, 8270, 8321
Fenitrothion .....	8141
Fensulfothion .....	8141, 8270, 8321
Fenthion .....	8141, 8270
Fenuron .....	8321
Fluchloralin .....	8270
Fluometuron .....	8321
Fluoranthene .....	8100, 8270, 8275, 8310, 8410
Fluorene .....	8100, 8270, 8275, 8310, 8410
Fluorescent Brightener 61 .....	8321
Fluorescent Brightener 236 .....	8321
Fluorobenzene .....	8260
2-Fluorobiphenyl .....	8270
2-Fluorophenol .....	8270
Fonophos .....	8141

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Formaldehyde .....	8315
Furaden (Carbofuran) .....	8270, 8318, 8321
Gasoline range organics (GRO) .....	8015
Halowax-1000 .....	8081
Halowax-1001 .....	8081
Halowax-1013 .....	8081
Halowax-1014 .....	8081
Halowax-1051 .....	8081
Halowax-1099 .....	8081
Heptachlor .....	8081, 8270
2,2',3,3',4,4',5-Heptachlorobiphenyl .....	8082, 8275
2,2',3,4,4',5,5'-Heptachlorobiphenyl .....	8082, 8275
2,2',3,4,4',5',6-Heptachlorobiphenyl .....	8082
2,2',3,4',5,5',6-Heptachlorobiphenyl .....	8082, 8275
Heptachlor epoxide .....	8081, 8270
Heptanal .....	8315
Hexachlorobenzene .....	8081, 8121, 8270, 8275, 8410
2,2',3,3',4,4'-Hexachlorobiphenyl .....	8275
2,2',3,4,4',5'-Hexachlorobiphenyl .....	8082, 8275
2,2',3,4,5,5'-Hexachlorobiphenyl .....	8082
2,2',3,5,5',6-Hexachlorobiphenyl .....	8082
2,2',4,4',5,5'-Hexachlorobiphenyl .....	8082
Hexachlorobutadiene .....	8021, 8121, 8260, 8270, 8410
"-Hexachlorocyclohexane ("BHC) .....	8081, 8121, 8270
β-Hexachlorocyclohexane (β-BHC) .....	8081, 8121, 8270
δ-Hexachlorocyclohexane (δ-BHC) .....	8081, 8121, 8270
γ-Hexachlorocyclohexane (γ-BHC, Lindane) .....	8081, 8121, 8270
Hexachlorocyclopentadiene .....	8081, 8121, 8270, 8410
Hexachloroethane .....	8121, 8260, 8270, 8410
Hexachlorophene .....	8270
Hexachloropropene .....	
Hexafluoro-2-methyl-2-propanol .....	8015
Hexafluoro-2-propanol .....	8015
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) .....	8330
Hexamethylphosphoramide (HMPA) .....	8141, 8270
Hexanal .....	8315
2-Hexanone .....	8260
Hexyl 2-ethylhexyl phthalate .....	8061
HMPA (Hexamethylphosphoramide) .....	8141, 8270
HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine) .....	8330
1,2,3,4,6,7,8-HpCDD .....	8280, 8290
HpCDD, total .....	8280
1,2,3,4,6,7,8-HpCDF .....	8280, 8290
1,2,3,4,7,8,9-HpCDF .....	8280, 8290
HpCDF, total .....	8280
1,2,3,4,7,8-HxCDD .....	8280, 8290
1,2,3,6,7,8-HxCDD .....	8280, 8290
1,2,3,7,8,9-HxCDD .....	8280, 8290
HxCDD, .....	8280
1,2,3,4,7,8-HxCDF .....	8280, 8290
1,2,3,6,7,8-HxCDF .....	8280, 8290
1,2,3,7,8,9-HxCDF .....	8280, 8290
2,3,4,6,7,8-HxCDF .....	8280, 8290
HxCDF .....	8280

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Hydroquinone .....	8270
3-Hydroxycarbofuran.....	8318, 8321
5-Hydroxydicamba .....	8151
2-Hydroxypropionitrile .....	8260
Indeno(1,2,3-cd)pyrene .....	8100, 8270, 8275, 8310
Iodomethane (Methyl iodide) .....	8260
Isobutyl alcohol (2-Methyl-1-propanol) .....	8015, 8260
Isodrin .....	8081, 8270
Isophorone .....	8270, 8410
Isopropalin .....	8091
Isopropyl alcohol (2-Propanol) .....	8015, 8260
Isopropylbenzene .....	8021, 8260
p-Isopropyltoluene .....	8021, 8260
Isosafrole .....	8270
Isovaleraldehyde .....	8315
Kepone .....	8081, 8270
Lannate (Methomyl) .....	8318, 8321
Leptophos .....	8141, 8270
Lindane ((γ-Hexachlorocyclohexane, γ-BHC) .....	8081, 8121, 8270
Linuron (Lorox) .....	8321, 8325
Lorox (Linuron) .....	8321, 8325
Malathion .....	8141, 8270
Maleic anhydride .....	8270
Malononitrile .....	8260
MCPA .....	8151, 8321
MCPP .....	8151, 8321
Merphos .....	8141, 8321
Mestranol .....	8270
Mesuro (Methiocarb).....	8318, 8321
Methacrylonitrile .....	8260
Methanol .....	8015, 8260
Methapyrilene .....	8270
Methiocarb (Mesuro) .....	8318, 8321
Methomyl (Lannate) .....	8318, 8321
Methoxychlor .....	8081, 8270
Methyl acrylate .....	8260
2-Methyl-1-propanol (Isobutyl alcohol) .....	8015, 8260
Methyl-t-butyl ether .....	8260
3-Methylcholanthrene .....	8100, 8270
2-Methyl-4,6-dinitrophenol .....	8041
4,4'-Methylenebis(2-chloroaniline) .....	8270
4,4'-Methylenebis(N,N-dimethylaniline) .....	8270
Methyl ethyl ketone (MEK, 2-Butanone).....	8015, 8260
Methylene chloride (Dichloromethane, DCM).....	8021, 8260
Methyl iodide (Iodomethane) .....	8260
Methyl isobutyl ketone (MIBK, 4-Methyl-2-pentanone) .....	8015, 8260
Methyl methacrylate .....	8260
Methyl methanesulfonate .....	8270
2-Methylnaphthalene .....	8270, 8410
Methyl parathion .....	8270, 8321
4-Methyl-2-pentanone (MIBK, Methyl isobutyl ketone) .....	8015, 8260
2-Methylphenol (o-Cresol) .....	8041, 8270, 8410
3-Methylphenol (m-Cresol) .....	8041, 8270
4-Methylphenol (p-Cresol).....	8041, 8270, 8410

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
2-Methylpyridine (2-Picoline) .....	8015, 8260, 8270
Methyl-2,4,6-trinitrophenylnitramine (Tetryl) .....	8330
Mevinphos .....	8141, 8270
Mexacarbate .....	8270, 8321
MIBK (Methyl isobutyl ketone, 4-Methyl-2-pentanone) .....	8015, 8260
Mirex .....	8081, 8270
Monocrotophos .....	8141, 8270, 8321
Monuron .....	, 8325
Naled .....	8141, 8270, 8321
Naphthalene .....	8021, 8100, 8260, 8270, 8275, 8310, 8410
NB (Nitrobenzene) .....	8091, 8260, 8270, 8330, 8410
1,2-Naphthoquinone .....	8091
1,4-Naphthoquinone .....	8270, 8091
1-Naphthylamine .....	8270
2-Naphthylamine .....	8270
Neburon .....	8321
Nicotine .....	8270
5-Nitroacenaphthene .....	8270
2-Nitroaniline .....	8131, 8270, 8410
3-Nitroaniline .....	8131, 8270, 8410
4-Nitroaniline .....	8131, 8270, 8410
5-Nitro-o-anisidine .....	8270
Nitrobenzene (NB) .....	8091, 8260, 8270, 8330, 8410
4-Nitrobiphenyl .....	8270
Nitrofen .....	8081, 8270
Nitroglycerin .....	8332
2-Nitrophenol .....	8041, 8270, 8410
3-Nitrophenol .....	8041
4-Nitrophenol .....	8041, 8151, 8270, 8410
4-Nitrophenyl phenyl ether .....	8111
2-Nitropropane .....	8260
Nitroquinoline-1-oxide .....	8270
N-Nitrosodi-n-butylamine .....	8015, 8260, 8270
N-Nitrosodiethylamine .....	8270
N-Nitrosodimethylamine .....	8070, 8270, 8410
N-Nitrosodi-n-butylamine (N-Nitrosodibutylamine) .....	8015, 8260, 8270
N-Nitrosodiphenylamine .....	8070, 8270, 8410
N-Nitrosodi-n-propylamine .....	8070, 8270, 8410
N-Nitrosomethylethylamine .....	8270
N-Nitrosomorpholine .....	8270
N-Nitrosopiperidine .....	8270
N- .....	8270
2-Nitrotoluene (o-Nitrotoluene, 2-NT) .....	8091, 8330
3-Nitrotoluene (m-Nitrotoluene, 3-NT) .....	8091, 8330
4-Nitrotoluene (p-Nitrotoluene, 4-NT) .....	8091, 8330
o-Nitrotoluene (2-Nitrotoluene, 2-NT) .....	8091, 8330
m-Nitrotoluene (3-Nitrotoluene, 3-NT) .....	8091, 8330
p-Nitrotoluene (4-Nitrotoluene, 4-NT) .....	8091, 8330
5-Nitro-o-toluidine .....	8270
trans-Nonachlor .....	8081
2,2'3,3'4,4'5,5'6-Nonachlorobiphenyl .....	8082, 8275
Nonanal .....	8315
2-NT (2-Nitrotoluene, o-Nitrotoluene) .....	8091, 8330
3-NT (3-Nitrotoluene, m-Nitrotoluene) .....	8091, 8330

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
4-NT (4-Nitrotoluene, p-Nitrotoluene) .....	8091, 8330
OCDD .....	8280, 8290
OCDF .....	8280, 8290
2,2',3,3',4,4',5,5'-Octachlorobiphenyl .....	8275
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) .....	8330
Octamethyl pyrophosphoramidate .....	8270
Octanal .....	8315
Oxamyl .....	8321
4,4'-Oxydianiline .....	8270
Paraldehyde .....	8015, 8260
Parathion .....	8270
Parathion, ethyl .....	8141
Parathion, methyl .....	8141
PCB-1016 (Aroclor-1016) .....	8082, 8270
PCB-1221 (Aroclor-1221) .....	8082, 8270
PCB-1232 (Aroclor-1232) .....	8082, 8270
PCB-1242 (Aroclor-1242) .....	8082, 8270
PCB-1248 (Aroclor-1248) .....	8082, 8270
PCB-1254 (Aroclor-1254) .....	8082, 8270
PCB-1260 (Aroclor-1260) .....	8082, 8270
PCNB .....	8081
1,2,3,7,8-PeCDD .....	8280, 8290
PeCDD, total .....	8280
1,2,3,7,8-PeCDF .....	8280, 8290
2,3,4,7,8-PeCDF .....	8280, 8290
PeCDF, total .....	8280
Pendimethaline (Penoxalin) .....	8091
Penoxalin (Pendimethaline) .....	8091
Pentachlorobenzene .....	8121, 8270
2,2',3,4,5'-Pentachlorobiphenyl .....	8082
2,2',4,5,5'-Pentachlorobiphenyl .....	8082, 8275
2,3,3',4',6-Pentachlorobiphenyl .....	8082
2,3',4,4',5-Pentachlorobiphenyl .....	8275
Pentachloroethane .....	8260
Pentachloronitrobenzene .....	8091, 8270
Pentachlorophenol .....	8041, 8151, 8270, 8410
Pentafluorobenzene .....	8260
Pentanal (Valeraldehyde) .....	8315
2-Pentanone .....	8015, 8260
Permethrin .....	8081
Perthane .....	8081
Phenacetin .....	8270
Phenanthrene .....	8100, 8270, 8275, 8310, 8410
Phenobarbital .....	8270
Phenol .....	8041, 8270, 8410
1,4-Phenylenediamine .....	8270
Phorate .....	8141, 8270, 8321
Phosalone .....	8270
Phosmet .....	8141, 8270
Phosphamidon .....	8141, 8270
Phthalic anhydride .....	8270
Picloram .....	8151
2-Picoline (2-Methylpyridine) .....	8015, 8260, 8270
Piperonyl sulfoxide .....	8270

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Profluralin .....	8091
Promecarb .....	8318
Pronamide .....	8270
Propachlor .....	8081, 8321
Propanal (Propionaldehyde) .....	8315, 8321
1-Propanol .....	8015, 8260
2-Propanol (Isopropyl alcohol) .....	8015, 8260
Propargyl alcohol .....	8260
Propenal (Acrolein) .....	8260, 8315
Propham .....	8321
$\beta$ -Propiolactone .....	8260
Propionaldehyde (Propanal) .....	8315
Propionitrile (Ethyl cyanide) .....	8015, 8260
Propoxur (Baygon) .....	8318, 8321
n-Propylamine .....	8260
n-Propylbenzene .....	8021, 8260
Propylthiouracil .....	8270
Prothiophos (Tokuthion) .....	8141
Pyrene .....	8100, 8270, 8275, 8310, 8410
Pyridine .....	8015, 8260, 8270
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine) .....	8330
Resorcinol .....	8270
Ronnel .....	8141
Rotenone .....	8325
Safrole .....	8270
Sevin (Carbaryl) .....	8270, 8318, 8321, 8325
Siduron .....	8321, 8325
Simazine .....	8141
Silvex (2,4,5-TP) .....	8151, 8321
Solvent Red 3 .....	8321
Solvent Red 23 .....	8321
Stiropfos (Tetrachlorvinphos) .....	8141, 8270
Strobane .....	8081
Strychnine .....	8270, 8321
Styrene .....	8021, 8260
Sulfallate .....	8270
Sulfotepp .....	8141
Sulprofos (Bolstar) .....	8141
2,4,5-T .....	8151, 8321
2,4,5-T, butoxyethanol ester .....	8321
2,4,5-T, butyl ester .....	8321
2,3,7,8-TCDD .....	8280, 8290
TCDD, total .....	8280
2,3,7,8-TCDF .....	8280, 8290
TCDF, total .....	8280
Tebuthiuron .....	8321
Temik (Aldicarb) .....	8318, 8321
TEPP .....	8141
Terbufos .....	8141, 8270
1,2,3,4-Tetrachlorobenzene .....	8121
1,2,3,5-Tetrachlorobenzene .....	8121
1,2,4,5-Tetrachlorobenzene .....	8121, 8270
2,2',3,5'-Tetrachlorobiphenyl .....	8082, 8275
2,2',4,5'-Tetrachlorobiphenyl .....	8275

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
2,2',5,5'-Tetrachlorobiphenyl .....	8082, 8275
2,3',4,4'-Tetrachlorobiphenyl .....	8082, 8275
1,1,1,2-Tetrachloroethane .....	8021, 8260
1,1,2,2-Tetrachloroethane .....	8021, 8260
Tetrachloroethene .....	8021, 8260
2,3,4,5-Tetrachlorophenol .....	8041
2,3,4,6-Tetrachlorophenol .....	8041, 8270
2,3,5,6-Tetrachlorophenol.....	8041
2,3,4,5-Tetrachloronitrobenzene .....	8091
2,3,5,6-Tetrachloronitrobenzene .....	8091
Tetrachlorvinphos (Stirophos) .....	8141, 8270
Tetraethyl dithiopyrophosphate .....	8270
Tetraethyl pyrophosphate .....	8270
Tetrazene .....	8331
Tetryl (Methyl-2,4,6-trinitrophenylnitramine) .....	8330
Thiofanox .....	8321
Thionazin (Zinophos) .....	8141, 8270
Thiophenol (Benzenethiol) .....	8270
1,3,5-TNB (1,3,5-Trinitrobenzene) .....	8270, 8330
2,4,6-TNT (2,4,6-Trinitrobenzene) .....	8330
TOCP (Tri-o-cresylphosphate) .....	8141
Tokuthion (Prothiophos) .....	8141
m-Tolualdehyde .....	8315
o-Tolualdehyde .....	8315
p-Tolualdehyde .....	8315
Toluene .....	8021, 8260
Toluene diisocyanate .....	8270
o-Toluidine .....	8015, 8260, 8270
Total petroleum hydrocarbons as diesel .....	8015
Total petroleum hydrocarbons as gasoline .....	8015
Total petroleum hydrocarbons as motor oil .....	8015
Toxaphene .....	8081, 8270
2,4,5-TP (Silvex) .....	8151, 8321
2,4,6-Tribromophenol .....	8270
2,4,6-Trichloroaniline .....	8131
2,4,5-Trichloroaniline .....	8131
1,2,3-Trichlorobenzene .....	8021, 8121, 8260
1,2,4-Trichlorobenzene .....	8021, 8121, 8260, 8270, 8275, 8410
2,2',5-Trichlorobiphenyl .....	8082, 8275
2,3',5-Trichlorobiphenyl .....	8275
2,4',5-Trichlorobiphenyl .....	8082, 8275
1,3,5-Trichlorobenzene .....	8121
1,1,1-Trichloroethane .....	8021, 8260
1,1,2-Trichloroethane .....	8021, 8260
Trichloroethene .....	8021, 8260
Trichlorofluoromethane .....	8021, 8260
Trichlorfon .....	8141, 8321
Trichloronate .....	8141
1,2,3-Trichloro-4-nitrobenzene .....	8091
1,2,4-Trichloro-5-nitrobenzene .....	8091
2,4,6-Trichloronitrobenzene .....	8091
2,3,4-Trichlorophenol .....	8041
2,3,5-Trichlorophenol .....	8041
2,3,6-Trichlorophenol .....	8041

**Table 1**  
**Determinative Methods for Organic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
2,4,5-Trichlorophenol .....	8041, 8270, 8410
2,4,6-Trichlorophenol .....	8041, 8270, 8410
2,4,6-Trichlorophenyl 4-nitrophenyl ether .....	8111
2,3,6-Trichlorophenyl 4-nitrophenyl ether .....	8111
2,3,5-Trichlorophenyl 4-nitrophenyl ether .....	8111
2,4,5-Trichlorophenyl 4-nitrophenyl ether .....	8111
3,4,5-Trichlorophenyl 4-nitrophenyl ether .....	8111
2,3,4-Trichlorophenyl 4-nitrophenyl ether .....	8111
1,2,3-Trichloropropane .....	8021, 8260
O,O,O-Triethyl phosphorothioate .....	8270
Trifluralin .....	8091, 8081, 8270
2,4,5-Trimethylaniline .....	8270
1,2,4-Trimethylbenzene .....	8021, 8260
1,3,5-Trimethylbenzene .....	8021, 8260
Trimethyl phosphate .....	8270
1,3,5-Trinitrobenzene (1,3,5-TNB).....	8270, 8330
2,4,6-Trinitrobenzene (2,4,6-TNT).....	8330
Tris-BP (Tris-(2,3-dibromopropyl) phosphate) .....	8270, 8321
Tri-o-cresylphosphate (TOCP) .....	8141
Tri-p-tolyl phosphate .....	8270
Tris-(2,3-dibromopropyl) phosphate (Tris-BP) .....	8270, 8321
Valeraldehyde (Pentanal) .....	8315
Vinyl acetate .....	8260
Vinyl chloride .....	8021, 8260
Vinylidene chloride (1,1-Dichloroethene) .....	8021, 8260
o-Xylene .....	8021, 8260
m-Xylene .....	8021, 8260
p-Xylene .....	8021, 8260
Zinophos (Thionazin) .....	8141, 8270

**Table 2**  
**Determinative Methods for Inorganic Analytes**

**Table 2**  
**Determinative Methods for Inorganic Analytes**

<b>Analyte</b>	<b>Applicable Method(s)</b>
Aluminum .....	6010, 6020, 6800, 7000, 7010
Antimony.....	6010, 6020, 6200, 6800, 7000, 7062
Arsenic .....	6010, 6020, 6200, 7010, 7061, 7062, 7063
Barium .....	6010, 6020, 6200, 6800, 7000, 7010
Beryllium .....	6010, 6020, 7000, 7010
Boron .....	6800
Bromide .....	6500, 9056, 9211
Cadmium.....	6010, 6020, 6200, 6800, 7000, 7010
Calcium .....	6010, 6020, 6200, 6800, 7000
Chloride.....	6500, 9056, 9057, 9212, 9250, 9251, 9253
Chromium.....	6010, 6020, 6200, 6800, 7000, 7010
Chromium, Hexavalent .....	7195, 7196, 7197, 7198, 7199
Cobalt.....	6010, 6020, 6200, 7000, 7010
Copper .....	6010, 6020, 6200, 6800, 7000, 7010
Cyanide .....	9010, 9012, 9013, 9213
Fluoride .....	6500, 9056, 9214
Iron.....	6010, 6020, 6200, 6800, 7000, 7010
Lead .....	6010, 6020, 6200, 6800, 7000, 7010
Lithium.....	6010, 7000
Magnesium .....	6010, 6020, 6800, 7000
Manganese .....	6010, 6020, 6200, 7000, 7010
Mercury.....	4500, 6020, 6200, 6800, 7470, 7471, 7472, 7473, 7474
Molybdenum.....	6010, 6200, 6800, 7000, 7010
Nickel .....	6010, 6020, 6200, 6800, 7000, 7010
Nitrate.....	6500, 9056, 9210
Nitrite.....	6500, 9056, 9216
Osmium.....	7000
Phosphate.....	6500, 9056
Phosphorus.....	6010
Phosphorus, White .....	7580
Potassium.....	6010, 6020, 6200, 6800, 7000
Rubidium.....	6200
Selenium .....	6010, 6020, 6200, 6800, 7010, 7741, 7742
Silver.....	6010, 6020, 6200, 6800, 7000, 7010
Sodium.....	6010, 6020, 7000
Strontium .....	6010, 6200, 6800, 7000
Sulfate.....	6500, 9035, 9036, 9038, 9056
Sulfide.....	9030, 9031, 9215
Thallium .....	6010, 6020, 6200, 6800, 7000, 7010
Thorium.....	6200
Tin .....	6200, 7000
Titanium.....	6200
Vanadium .....	6010, 6020, 6200, 6800, 7000, 7010
Zinc.....	6010, 6020, 6200, 6800, 7000, 7010
Zirconium .....	6200

**Table 3**  
**Summary of Waste Sampling Methods**

**Table 3**  
**Summary of Sampling Methods**

<b>Sampling Device</b>	<b>Other Device-Specific Guidance</b>	<b>Sample Type</b>	<b>Volume (Liters per Pass)</b>	<b>Comments (For Example: Effects on Matrix, Operational Considerations, Typical Uses)</b>
COLIWASA	ASTM D 5495 ASTM D 5743 ASTM D 6063 U.S. EPA 1980	Shallow, Composite	0.5 to 3.0	Reusable and single use models available. Inexpensive. Glass type devices may be difficult to decontaminate. Collects undisturbed sample. For mixed solid/liquid media will collect semi-liquid only. Not for high viscosity liquids.
Concentric Tube Thief	ASTM D 6063 U.S. EPA 1994d	Surface, Relatively Undisturbed, Selective	0.5 to 1.0	Recommended for powdered or granular materials or wastes in piles, bags, drums, or similar containers. Best used in dry, unconsolidated materials. Not suitable for sampling large particles due to narrow width of slot.
Coring Type Sampler (with or without valve)	ASTM D 4823 U.S. EPA 1989c	Surface or Depth, Disturbed	0.2 to 1.5	Designed for wet soils and sludge. May be equipped with a plastic liner plastic liner and caps. May be used for VOAs. Reusable and easy to decontaminate.
Discrete Level Sampler		Depth, Discrete	0.2 to 0.5	Easy to decontaminate. Obtains samples from a discrete interval. Limited by sample volume and liquids containing high solids. Can be used to store and transport sample.
Drum Thief	ASTM D 6063 ASTM D 5743 U.S. EPA 1994b	Shallow, Composite	0.1 to 0.5	Usually single use. If made of glass and reused, decontamination may be difficult. Limited by length of sampler, small volume of sample collected, and viscosity of fluids.
Kemmerer Sampler		Depth, Discrete	1.0 to 2.0	Recommended for large tanks, lakes, ponds, or lagoons. May be difficult to decontaminate. Materials may not be compatible with sample matrix but all PTFE construction is available. Sample container exposed to media at other depths while being lowered to sample point.
Lidded Sludge/Water Sampler		Discrete, Composite	1.0	1-L sample jar placed into device (low risk of contamination). May sample at different depths and samples up to 40% solids. Equipment is heavy and limited to one bottle size.
Swing Jar Sampler		Shallow, Composite	0.5 to 1.0	Used to sample liquids, powders, or small solids at a distance up to 12-ft. Adaptable to different container sizes. Not suitable for discrete samples. Can sample a wide variety of locations.
Thin-Walled Tube	ASTM D 1587 ASTM D 4823 ASTM D 4700	Surface or Depth, Undisturbed	0.5 to 5.0	Useful for collecting an undisturbed sample (depends on extension). May require a catcher to retain soil samples. Inexpensive, easy to decontaminate. Samples for VOAs may be biased when sample is extruded.
Trier	ASTM D 5451 ASTM D 6063	Surface, Relatively Undisturbed, Selective	0.1 to 0.5	Recommended for powdered or granular materials or wastes in piles, bags, drums, or similar containers. Best for moist or sticky materials. Will introduce sampling bias when used to sample coarse-grained materials.
Valve Drum Sampler		Shallow, Composite	0.3 to 1.6	Used to collect a vertical column of liquid. Available in various materials for repeat or single use. High viscosity liquids may be difficult to sample.

**Table 4**  
**Recommended Sampling Access Points**

**Table 4**  
**Sampling Access Points**

<b>Container Type</b>	<b>Sampling Point</b>
Drum (bung on one end)	Withdraw sample through the bung opening.
Drum (bung on side)	Lay drum on side with bung up. Withdraw sample through the bung opening.
Barrel, Fiber Drum, and Buckets	Withdraw sample through the top of containers. Withdraw samples through the center of the container as well as through different points diagonally opposite the point of entry.
Sacks and Bags	Withdraw samples through the fill openings. Withdraw samples through the center of the container as well as through different points diagonally opposite the point of entry.
Vacuum truck and Similar Containers	Withdraw sample through open hatch. Sample all other hatches.
Soil	Divide the surface area into an imaginary grid. (The number of grids is determined by the desired number of samples to be collected which, when combined, should give a representative sample of the waste.) Sample each grid.
Strip Tank	Withdraw sample from open tank and steam cleaners.
Paint Booths	Withdraw composite sample from water bath. Composite shall include all levels of liquid.

DRAFT

**Table 5**  
**Recommended Sample Collection (Numerical)**

**Table 5**  
**Recommended Sample Collection**

Case No.	Information Desired	Waste Type	Container Type	Number of Samples to Collect
1	Average Concentration	Liquid	Drum, Vacuum Truck, and Similar Containers	1 collected with ColiWasa
2	Average Concentration	Solid (Powder or Granular)	Bag, Drum, Bin, and Sack	1 composite sample of several samples collected at different sampling areas
3	Concentration Range	Liquid	Drum, Vacuum Truck, and Similar Containers	3 to 10 separate samples, each from a different depth of the liquid
4	Concentration Range	Solid (Powder or Granular)	Bag, Drum, and Bin	3 to 5 samples from different points
5	Average Concentration	Soil		1 composite sample of several samples collected at different sampling areas
6	Concentration Range	Soil		3 to 20 separate samples from different sampling areas
7	Average Concentration	All Types	All Containers	3 identical samples or one composite sample divided into three identical samples if homogeneous
8	Average Concentration	Liquid	Storage Tank	Same as Case 2
9	Concentration Range	Liquid	Storage Tank	Same as Case 4

**Attachment 1**  
**Waste Profile Sheets**



**Ri-Nu Services, LLC**

**815 Mission Rock Rd. – Santa Paula, CA**

Oxnard Permit No. TBD      Profile No: \_\_\_\_\_

## **Generator Background & Wastewater Profile**

### **Generator Information**

Facility / Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone: \_\_\_\_\_

### **Billing Information**

Bill To Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

### **Wastewater Profile**

Wastewater Description: \_\_\_\_\_

Describe Process Generating Waste: \_\_\_\_\_

Is this waste considered hazardous under RCRA Standards? ☐ Yes ☐ No

Is this waste considered a California Hazardous Waste? ☐ Yes ☐ No

Does this waste originate from a facility/site within Orange County Sanitation District's Service Area? ☐ Yes ☐ No

Color: \_\_\_\_\_ Odor: \_\_\_\_\_ pH Range: \_\_\_\_\_ % Solids: \_\_\_\_\_

Are any of the following chemicals present in the waste?: ☐ Yes ☐ No

☐ Chlordane    ☐ 2,4-D    ☐ Endrin    ☐ Hepachlor (and its hydroxide)

☐ Lindane    ☐ Methoxychlor    ☐ Toxaphene    ☐ 2,4,5-TP (silvex)

☐ 1,4-Dioxane    ☐ N-Nitrosodimethylamine (NDMA)    ☐ DDD, DDT, DDE

☐ Dieldrin    ☐ Mirex    ☐ Aldrin    ☐ PCBs

Flash Point:    ☐ < 70°F    ☐ 70°F - 140°F    ☐ 140°F - 200°F    ☐ >200°F

- **Attach analytical results for constituents reasonably expected to be present in the waste.**

Anticipated Volume: \_\_\_\_\_

Transport Frequency: ☐ Daily ☐ Weekly ☐ Monthly ☐ One-Time ☐ Other (specify): \_\_\_\_\_

Hauler / Transporter Name: \_\_\_\_\_

Approximate Shipping Commencement Date: \_\_\_\_\_

**Generator Certification**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility a fine and imprisonment for knowing violations. [40 C.F.R. §403.6(a)(2)(ii) (2005)]

Generator Certifying Representative Name: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

**FOR RI-NU SERVICES, LLC USE ONLY:**

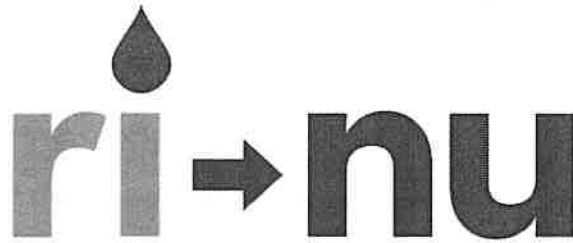
**Is this waste accepted for treatment by Ri-Nu Services LLC?** ☐ Yes ☐ No

Ri-Nu Services LLC Representative Name/Title: \_\_\_\_\_

Ri-Nu Services LLC Representative Signature: \_\_\_\_\_

Date of Approval: \_\_\_\_\_

\_\_\_\_\_



Services, LLC.

**Ri-Nu Services, LLC**

**815 Mission Rock Rd., Santa Paula, CA**

SOLIDS ONLY Profile No: \_\_\_\_\_

## Generator Background & Profile

### Generator Information

Facility / Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone: \_\_\_\_\_

### Billing Information

Bill To Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

### Waste Profile

Waste Description: \_\_\_\_\_

Describe Process Generating Waste: \_\_\_\_\_

Is this waste considered hazardous under RCRA Standards? ☐ Yes ☐ No

Is this waste considered a California Hazardous Waste? ☐ Yes ☐ No

Color: \_\_\_\_\_ Odor: \_\_\_\_\_ pH Range: \_\_\_\_\_ % Liquids (estimate): \_\_\_\_\_

- **Attach analytical results for constituents reasonably expected to be present in the waste.**

Anticipated Volume: \_\_\_\_\_

Transport Frequency: ☐ Daily ☐ Weekly ☐ Monthly ☐ One-Time ☐ Other (specify): \_\_\_\_\_

Hauler / Transporter Name: \_\_\_\_\_

Approximate Shipping Start Date: \_\_\_\_\_



**Generator Certification**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations. [40 C.F.R. §403.6(a)(2)(ii) (2005)]

Generator Certifying Representative Name: \_\_\_\_\_  
Title: \_\_\_\_\_ Date: \_\_\_\_\_

**FOR RI-NU SERVICES, LLC USE ONLY:**

**Is this waste accepted for treatment by Ri-Nu Services LLC?** ☐ Yes ☐ No

Ri-Nu Services LLC Representative Name/Title: \_\_\_\_\_

Ri-Nu Services LLC Representative Signature: \_\_\_\_\_

Date of Approval: \_\_\_\_\_

End Destination (Landfill): \_\_\_\_\_

Notes: \_\_\_\_\_

**Attachment 2**  
**Procedure for Sampling Waste in Drums**

**Attachment 2**  
**Procedure for Sampling Waste in Drums**

1. Choose the appropriate Coliwasa for the liquid to be sampled referring to Table 3.
2. Make sure that the sampler is clean.
3. Ensure that the sampler is functioning properly prior to use. Adjust the locking mechanism, if necessary to, to ensure that the neoprene rubber stopper provides a tight closure.
4. Don appropriate personal protective equipment and observe required sampling precautions.
5. Put the sampler in the open position by placing the stopper rod handle in the Tee-position and pushing the rod down until the handle sits against the sampler's locking block.
6. Slowly lower the sampler into the liquid waste. (Lower the sampler at a rate that permits the waste level to remain the same both inside and outside the sampling tube. If the liquid level inside the sampler is lower than the level outside the sampler, the sampling rate is too fast and will result in a non-representative sample.
7. When the sampler stopper reaches the bottom of the waste container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the Tee handle until it is upright and one end rests tightly on the locking block.
8. Slowly withdraw the sampler from the waste container with one hand while wiping the sampler tube with a disposable cloth or rag with the free hand.
9. Carefully discharge the sample into a suitable container by slowly opening the sampler. This is done by slowly pulling the lower end of the Tee handle away from the locking block while the lower end of the sampler is positioned in a sample container.

10. Cap the Sample container; attach the label and seal; record required information in the field log book; and complete the sample and analysis sheet.
11. Unscrew the Tee handle of the sampler and disengage the locking block. Clean sampler onsite or store the contaminated parts in a plastic storage tube for subsequent cleaning. Store used wipes/rags in plastic bags for subsequent disposal.
12. Deliver the sample to the laboratory for analysis.

## **NOISE IMPACT ASSESSMENT**

**Patriot Environmental Services**  
815 Mission Rock Road  
Santa Paula, California 93060

May 17, 2017

Prepared for: Patriot Environmental Services  
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## **NOISE IMPACT ASSESSMENT**

**Patriot Environmental Services**  
815 Mission Rock Road  
Santa Paula, California 93060

May 17, 2017

### **EXECUTIVE SUMMARY**

This Noise Impact Assessment (NIA) has been prepared for Patriot Environmental Services (Patriot) to quantify and determine the significance of noise impacts associated with the proposed modifications to the existing wastewater treatment facility located at 815 Mission Rock Road, Santa Paula, California (Facility). Patriot is in the process of acquiring the currently inactive Facility from Green Compass, who previously operated it under CUP 960-2 (LU06-0011). Patriot is requesting that the permit be reinstated and modified as necessary to allow for receiving, treatment, and disposal of nonhazardous wastewater (Project). This NIA follows methodologies outlined in the *Ventura County General Plan*, the *Ventura County Initial Study Assessment Guidelines*, and *Ventura County's Construction Noise Threshold Criteria and Control Plan*.

The Facility is an existing wastewater treatment facility permitted under CUP 960-2 (LU06-0011). Patriot is not proposing to change the waste streams that have been historically accepted at the Facility, which include industrial wastewater containing metals, oily wastewater, industrial wastewater containing organics, domestic wastes, and oilfield sludge wastes.

Patriot is requesting the following modifications to the existing permitted operations:

- Expand CUP Boundary to include three (3) adjacent parcels to the south;
- Update the list of processing equipment/tanks to match Patriot's new design;
- Construct a hazardous materials storage building;
- Revise the Facility operating hours and truck delivery schedules;
- Revise truck trips limits to simplify compliance; and
- Revise limits on employee numbers.

This NIA demonstrates that the only proposed modification with the potential to increase noise levels at nearby receptors is the addition of nighttime wastewater processing operations (haul truck trips will not occur during the nighttime). As such, this NIA focuses on the quantification and significance determination of noise impacts from the nighttime wastewater processing operations.

This NIA finds that:

- Project daytime and evening industrial noise impacts are expected to be reduced or remain unchanged as a result of the Project.
- Project nighttime industrial noise impacts are less than significant at the nearby sensitive receptors (dwellings, schools, hospitals, nursing homes, churches, and libraries) without mitigation.
- The Project will result in a Class III, less than significant, noise impact.

## NOISE IMPACT ASSESSMENT

**Patriot Environmental Services**  
815 Mission Rock Road  
Santa Paula, California 93060

May 17, 2017

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## NOISE IMPACT ASSESSMENT

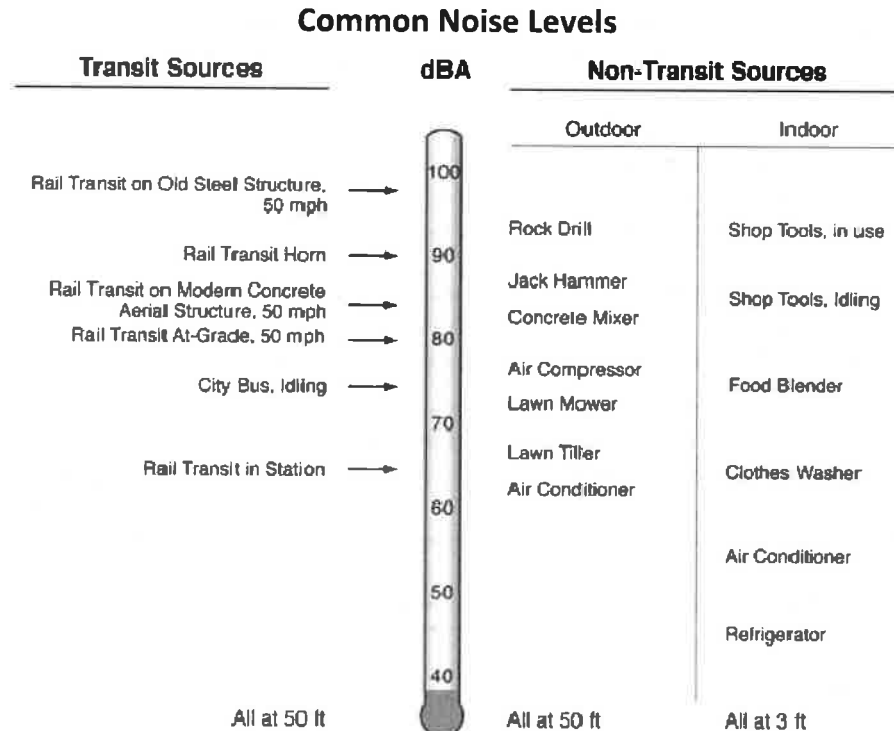
**Patriot Environmental Services**  
815 Mission Rock Road  
Santa Paula, California 93060

May 17, 2017

### 1.0 INTRODUCTION

This **Noise Impact Assessment (NIA)** has been prepared for Patriot Environmental Services (Patriot) to quantify and determine the significance of noise impacts associated with the proposed modifications to the existing wastewater treatment facility located at 815 Mission Rock Road, Santa Paula, California (Facility). Patriot is in the process of acquiring the currently inactive Facility from Green Compass, who previously operated it under CUP 960-2 (LU06-0011). Patriot is requesting that the permit be reinstated and modified as necessary to allow for receiving, treatment, and disposal of nonhazardous wastewater (Project). This NIA follows methodologies outlined in the *Ventura County General Plan*, the *Ventura County Initial Study Assessment Guidelines*, and *Ventura County's Construction Noise Threshold Criteria and Control Plan*.

Project nighttime noise impacts are quantified and compared to the appropriate significance thresholds in this NIA. To provide the reader a frame of reference by which to judge noise levels, the following illustration of various common noise levels is provided.



Source: Federal Transit Administration's *Transit Noise Impact Assessment*

## 2.0 PROJECT DESCRIPTION

The current Conditional Use Permit (CUP) 960-2 (LU06-0011) was approved by the Ventura County Planning Commission on July 29, 2010. The CUP was issued to Santa Clara Waste Water Company (SCWW), who was then acquired by Green Compass. Patriot Environmental Services is in the process of acquiring the Facility from SCWW/Green Compass. However, this acquisition is contingent upon the successful reinstatement of the CUP, issuance of a new sewer discharge permit through the City of Oxnard, and the reopening of the facility.

### 2.1 Facility Operations

Patriot is requesting that CUP 960-2 be reinstated to authorize the continued use of an existing wastewater treatment facility that accepts, treats, and disposes (offsite and via sewer discharge) various types of non-hazardous waste. Patriot is not proposing to change the waste streams that have been historically accepted, which include:

- *Industrial Wastewater Containing Metals (40 CFR Part 437 Subcategory A wastes):* This includes waste such as neutralized acid wastewater; boiler blowdown brine and metal finish wastewater.
- *Oily Wastewater (40 CFR Part 437 Subcategory B wastes):* This includes waste such oilfield wastewater, oil spills, oil-water emulsions, contaminated groundwater from petroleum sources, bilge water, and parts cleaning wastewater.
- *Industrial Wastewater Containing Organics (40 CFR Part 437 Subcategory C wastes):* This includes wastes such as solvent bearing wastes, contaminated groundwater clean-up from non-petroleum sources, landfill leachate, floral waste water and tank clean-out fluids from organic non-petroleum sources.
- *Domestic Wastes:* Septic tank waste; port-a-potty waste and secondary sewage.
- *Oilfield Sludge Wastes:* This category includes:
  - Oilfield Drilling Muds: This includes used drilling muds and cuttings generated during the drilling of oil and gas wells.
  - Oilfield Tank Bottoms: This includes solids removed from the bottom of storage tanks used in the production of crude oil.

Liquid waste streams will be treated using various processes located throughout the Facility (see Figure 3, Appendix A). This includes the equalization/adjustment tanks, clarifiers, and ozone/GEM treatment operations. A front-end loader will be utilized to process solid wastes within the mixing areas (see Figure 3, Appendix A). Here, solid wastes separated during processing within the adjacent mixing tanks and centrifuge dewatering units will be mixed with mulch and other absorbent products using a front-end loader. Once the desired moisture content and odor is achieved, solid wastes are transported to the local landfill for proper disposal.

## 2.2 Proposed Modifications

As part of the acquisition and CUP application process, Patriot is proposing to modify CUP 960-2 (LU06-0011). The following is a brief description of the proposed modifications that may impact the noise level at nearby receptors:

- **Expand the Facility and CUP boundary to include three (3) adjacent parcels to the south:** Patriot is proposing to expand operations to the three (3) adjoining parcels to the south, all of which are zoned M3 (see Figure 3, Appendix A). This expansion will add 1.67 acres to the total Facility area.
- **Update the list of processing equipment and tanks per Patriot's new design:** A comparison of proposed equipment to the equipment currently approved under CUP 960-2 is shown on the proposed site plan (see Figure 3, Appendix A). The proposed Facility process flow diagram is presented as Figure 4 (Appendix A). In total, Patriot is proposing to use fewer tanks and less processing equipment than was approved under the current CUP 960-2.
- **Modify Facility operating hours and the truck delivery schedule:** Waste treatment operating hours are proposed to occur for 24 hours per day, 365 days per year. Deliveries to and from the facility are proposed to occur Monday through Saturday during daylight hours. The following table summarizes the proposed revisions to the operating hours and delivery schedule:

ITEM	CURRENT CUP LIMITS	PROPOSED CUP LIMITS
Hours of Plant Operation	Mon. – Sat., 5:00AM – 11:00PM Closed on Sundays Any time during any day of the week to meet demands or emergencies.	24 hours/day, 365 days/year (for onsite treatment operations)
Hours of Deliveries to & from the Facility	Mon. – Fri., 7:00AM – 5:00PM Saturdays, 8:00AM – 3:00PM None on Sundays	Mon. – Fri., 7:00AM – 7:00PM Saturdays, 8:00AM – 3:00PM No trucking on Sunday Any time for emergencies <sup>1</sup>
1 – Any time and any day for emergencies, only with written authorization from the Planning Director or his/her designee based upon good cause being shown and substantially documented by the Operator.		

- **Revise limits on employee numbers:** Patriot is proposing to increase the number of employees allowed per day:

ITEM	CURRENT LIMITS	PROPOSED LIMITS
Employees	Maximum of 15 employees per day (30 one way trips)	Maximum of 15 employees per 8-hour shift = 40 employees (90 one-way trips). Expected shifts at 100% operation: 6:00 AM – 2:00 PM = 15 employees 2:00 PM – 10:00 PM = 15 employees 10:00 PM – 6:00 AM = 10 employees

For more detailed description of proposed Project operations, please see the Project Description.

## 2.3 Project Noise Sources

As this Facility is an existing permitted operation, noise impacts from the existing operations have already been considered and approved under CUP 960-2 (LU06-0011). For this reason, operations currently authorized under CUP 960-2 are considered a part of the Project baseline for this NIA.

The following proposed modifications have negligible noise implications and are **not** quantified by this NIA:

- **Facility Boundary Expansion.** The Facility operations will be expanded to include the three (3) parcels to the east. This will shift the noise generating activities to be slightly closer to some receptors and farther from other receptors. The rule of thumb for changes in noise levels due to changes of distance is that when the distance between a noise source and receptor is halved, the noise level experienced by the receptor increases by 3 dBA. Based on this rule of thumb, the small shift in the location of noise generating activities for this Project is expected to change noise levels at the receptors by less than 1 dBA. This modification is considered negligible and, therefore, is not analyzed further in this NIA.
- **New Facility Design.** Patriot is proposing to use fewer tanks and less processing equipment than was approved for the current CUP, which will reduce noise levels slightly. Haul trucks previously exited through the southern visitor entrance near Receptor 1, but will now exit through the gate in the eastern corner of the Facility. This will reduce noise from haul truck travel at Receptor 1 by a considerable margin while having negligible effects on the noise level at Receptors 2 and 3. Therefore, this modification will likely reduce noise impacts at the nearby receptors. This reduction is conservatively not included in the noise impact calculations for this NIA.
- **Truck Delivery Schedule.** Truck delivery hours on Monday through Friday will be extended for an additional two (2) hours from 5:00 PM to 7:00 PM. The number of haul truck deliveries will not change from what is currently permitted under CUP 960-2 (i.e., 500 trucks per week). This represents a negligible change in noise levels given that the additional hours are during the daytime period (i.e. 6:00 AM-7:00 PM per the Ventura County *General Plan Noise Element*) and the total number of trips will not increase. The increase in delivery hours without an increase in the number of deliveries will actually decrease the number of trips per hour and the peak hour noise level ( $L_{eq-1hr}$ ), which is the basis of significance determination in this NIA. This reduction is conservatively not included in the noise impact calculations for this NIA.

The proposed modification that may increase noise impacts is the extension of Facility operating hours from 5:00 AM to 11:00 PM to 24 hours per day. Haul truck delivery will not occur during the nighttime hours. Nighttime operations are currently not allowed, except for in emergency situations. Therefore, this NIA focuses on noise impacts resulting from proposed nighttime onsite processing operations at the Facility.

Nighttime operations that may generate noise include the equipment used to process waste materials (pumps, centrifuges, etc.), a front-end loader, and employee arrival/parking. Patriot is also proposing to increase the onsite Facility employees from 15 to 40 total. The new employees will also work in three (3) separate, eight (8) hour shifts. The noise generated by employee vehicles parking onsite during each of the three (3) specific shifts is included in this NIA.

## 2.4 Project Construction

As it is an existing operation, much of the Facility is already built-out. Patriot will be removing some of the old tankage and processing equipment, and replacing it with new equipment to match the new waste processing design. No new construction requiring significant foundation work or other large-scale development is proposed as part of the Project. The reconfiguration of the Facility will occur intermittently over a 6 to 9 months period, would be temporary in nature, and is not expected to generate noise levels in excess of what the existing permitted Facility currently generates under CUP 960-2. Per the *Ventura County Construction Noise Threshold Criteria and Control Plan*, construction activities would be confined to daytime hours only (7:00 AM-7:00 PM Monday-Friday, 9:00 AM-7:00 PM Weekends/Holidays) as this is generally the least noise-sensitive time period. As such, proposed construction activities will not occur during evening or nighttime hours. Due to the factors described above, construction nighttime noise impacts were not assessed within this NIA.

### **3.0 EXISTING SETTING**

The existing Facility is located at 815 Mission Rock Road in unincorporated Ventura County, south of the City of Santa Paula. California State Route (SR) 126 is located 0.3 miles to the north and the Santa Clara River basin runs east-west approximately 0.4 miles to the south (see Figure 1, Appendix A). This section discusses the existing regulatory and environmental settings applicable to the Project.

#### **3.1 Regulatory Setting**

This section discusses the Project's regulatory setting, specifically the Ventura County *General Plan Noise Element* (General Plan), Ventura County *Initial Study Assessment Guidelines* (CEQA Guidelines), and Ventura County's *Construction Noise Threshold Criteria and Control Plan* (Construction Guidelines).

##### **3.1.1 Ventura County General Plan**

The Ventura County *General Plan Noise Element* (General Plan), both in the *Goals, Policies & Programs* section and the *Hazards Appendix*, contains details regarding the recommended methodology for assessment of noise impacts. The General Plan presents standards for development of new noise-generating uses based on the noise sensitivity of a Project's surroundings. The General Plan includes specific significance thresholds for daytime (6:00 AM–7:00 PM), evening (7:00 PM–10:00 PM), and nighttime (10:00 PM–6:00 AM) hours. The thresholds are applicable only to sensitive receptors, which are defined as "dwellings, schools, hospitals, nursing homes, churches, and libraries" within the General Plan. If the ambient noise level at a receptor is lower than the designated standard, then the designated or "fixed" standard is used as the significance threshold for that receptor. However, if the ambient noise level at a receptor is greater than the designated standard, the "ambient noise level +3 decibels (dB)" is used as the significance threshold. A copy of the relevant text is included in Appendix B.

##### **3.1.2 Ventura County Initial Study Assessment Guidelines**

The Ventura County *Initial Study Assessment Guidelines* (CEQA Guidelines) presents methodologies for measuring noise levels and determining if noise impacts are significant. Significance thresholds depend on ambient noise levels in the area of the project during each of the defined time periods (i.e. daytime, evening, and nighttime). If the ambient levels are lower than the thresholds, the "fixed" thresholds are utilized. If ambient levels are greater than the fixed thresholds, the "ambient level +3 decibels (dB)" is utilized. The CEQA Guidelines mirror the standards established by the General Plan Noise Element described above.

##### **3.1.3 Construction Noise Threshold Criteria and Control Plan**

The Ventura County *Construction Noise Threshold Criteria and Control Plan* (Construction Guidelines) present methodologies for quantification of construction noise impacts, default noise level assumptions for common construction equipment, mitigated equipment noise levels, construction noise threshold criteria, and guidance on proper noise monitoring techniques. This NIA utilizes the methodologies presented in the Construction Guidelines to determine the expected Project noise impacts resulting from mobile equipment (i.e. front-end loader) operations. As discussed previously, per the Construction Guidelines any onsite construction activities would be confined to daytime hours only (7:00 AM–7:00 PM Monday-Friday, 9:00 AM–7:00 PM Weekends/Holidays) as this is generally the least noise-sensitive time period. A copy of the relevant text is included in Appendix B.

### 3.1.4 Definitions

The following terms are employed in this NIA:

- **Decibel (dB):** A unit division, on a logarithmic scale, whose base is the tenth root of ten, used to represent ratios of quantities proportional to power. In simple terms, if the power is multiplied by a factor of ten, then ten is added to the representation of the power on the decibel scale. If 0 dB represents 1 unit of power, 30 dB represents one thousand units, 60 dB represents one million units, etc.
- **A-Weighted Sound Level (dBA):** Sound pressure level measured using the A-weighting network, a filter which discriminates against low and very high frequencies in a manner similar to the human hearing mechanism at moderate sound levels. The A-weighted sound level is generally used when discussing environmental noise impacts.
- **Equivalent Continuous Noise Level ( $L_{eq}$ ):** The average noise level over a designated time period. This is often referred to as "equivalent sound level", hence the "eq" subscript. The "equivalence" is to a sound of constant level that has the same total acoustic energy content.
- **Ambient (i.e. Background) Noise Level:** The current noise level in the vicinity of the proposed Project that results from the combination of all sources, near and far. Please note ambient noise measurements presented in this NIA include existing noise generated at the existing Facility (see Section 3.2.3).
- **Sound Pressure Level (SPL):** The logarithmic measure of the power of a sound relative to a reference value, measured in dB. The sound pressure level is always associated with a specific location or distance from a sound source.

## 3.2 Environmental Setting

This section describes the existing noise environment and noise sources in and around the Project site, the receptors of concern near the Facility, as well as the ambient noise levels in these areas. For this Project, the existing setting includes current Facility operations.

### 3.2.1 Regional Setting

The Facility is located in an industrial/semi-rural area of unincorporated Ventura County, California, south of the City of Santa Paula. It is surrounded by industrial and agricultural land uses. The Ventura County General Plan identifies potential noise generating land uses (i.e. industrial properties) within the immediate vicinity of the Project site to the east and south. Agricultural land uses not expected to generate significant noise levels are located immediately west and north of the Project site.

The surrounding noise environment is characterized primarily by industrial operations, agricultural operations, traffic on nearby roadways (SR 126, Mission Rock Road, Shell Road), and occasional aircraft over-flights. The closest airport/airstrip is the Santa Paula Airport located approximately 2.9 miles away to the northeast, and has no appreciable influence on noise levels near the Facility. Existing noise sources near the Facility Receptors 1, 2 and 3 (R1, R2 and R3) include equipment noise from the existing Patriot/SCWW Facility, industrial noise from nearby industrial operations along Mission Rock Road, nearby agricultural equipment noise, traffic noise from roadways (SR 126, Mission Rock Road, Shell Road), occasional aircraft over-flights, and urban activities from the nearby communities of Santa Paula and Ventura. See Figure 2 (Appendix A) which shows the locations of Facility and nearby receptors.

### 3.2.2 Receptors

In the General Plan and CEQA Guidelines, noise sensitive receptors are defined as “dwellings, schools, hospitals, nursing homes, churches and libraries.” The receptors considered in this NIA are described below. When appropriate, receptors are grouped together and the noise impact at the worst-case portion of the group are determined. The closest receptor on each side of the Facility was included in this analysis. There are only three (3) receptors in the immediate vicinity of the Project. Other receptors in the surrounding area are further away and are not expected to experience Project noise. Also note that while receptors exist along the nearby roadways, this Project will not increase haul truck trips, so traffic noise at these receptors will not change as a result of the Project. See Figure 2 (Appendix A) for the locations of the relevant receptors.

- **Receptor 1 (R1)** is the two-story residential dwelling located approximately 40-feet southwest of the Project site at 907 Mission Rock Road. It is important to note that this residence has few windows facing the Facility, and the property is surrounded by an approximately 6-foot high wooden wall.
- **Receptor 2 (R2)** is the one-story residential dwelling located approximately 40-feet northeast of the Project site along Mission Rock Road.
- **Receptor 3 (R3)** is the one-story residential farm dwelling located approximately 190-feet northwest of the Project site.

### 3.2.3 Local Noise Environment

As described in Section 3.2.1, the existing ambient noise environment is characterized primarily by industrial operations (including existing operations at Patriot/SCWW Facility), agricultural operations, traffic on nearby roadways (SR 126, Mission Rock Road, Shell Road), and occasional aircraft over-flights.

To quantify the existing ambient noise environment experienced by nearby receptors, two (2) long-duration (24-hour) reference noise measurements were conducted at the Project site on April 12<sup>th</sup> through 14<sup>th</sup>, 2017 (Figure 2, Appendix A). The noise measurements were recorded using a Quest DL SoundPro, Type 2 noise meters (Serial # BG104008). The noise meter was programmed in “slow” mode, in “A” weighted form, and one (1) minute logging every for the entire measurement duration. The microphone was equipped with a windscreen during the measurement, and the noise meter was calibrated using a Quest QC-10 calibrator (Serial # QJ090052) prior to, and following each, measurement. The noise meter and calibrator were professionally calibrated by Engineering Dynamics, Inc. within one (1) year of use.

The locations of the noise measurements and the corresponding receptors are shown on Figure 2 (Appendix A). Table 1 presents the existing ambient noise levels at the receptors. Ambient noise measurement logs are included in Appendix C.

**Table 1 Ambient Noise in Facility Vicinity**

Receptor	Receptor Type	Daytime $L_{eq}$ (dBA)	Evening $L_{eq}$ (dBA)	Nighttime $L_{eq}$ (dBA)
Receptor 1 (R1)	Residential	54.7	53.8	52.2
Receptor 2 (R2)	Residential	58.2	54.7	52.2
Receptor 3 (R3)	Residential	54.7	53.8	52.2

Ventura County General Plan: Daytime = 6:00 AM-7:00 PM, Evening = 7:00 PM-10:00 PM, Nighttime = 10:00 PM-6:00 AM.

Notes:

- Daytime and evening ambient noise levels shown for informational purposes, as only nighttime noise impacts will be assessed within this NIA (see Section 2.3).
- Ambient noise levels recorded near R1 are also used to represent ambient noise levels at R3.

#### 4.0 SIGNIFICANCE THRESHOLDS

As discussed in Section 3.1, the CEQA Guidelines recommend that the noise standards from the General Plan be used as the significance threshold for noise impact assessments. The General Plan noise standards that are applicable to this Project are presented below:

- (4) *Noise generators, proposed to be located near any noise sensitive use, shall incorporate noise control measures so that ongoing outdoor noise levels received by the noise sensitive receptor, measured at the exterior wall of the building, does not exceed any of the following standards:*
- a.  *$L_{eq}1H$  of 55 dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.*
  - b.  *$L_{eq}1H$  of 50 dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.*
  - c.  *$L_{eq}1H$  of 45 dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.*

A threshold of 3 dB is commonly used to define "substantial increase." Under ambient conditions, people generally do not perceive that a noise level has changed until there is a 3 dB difference. This concept is used in Part (4) of the standard to dictate that, for receptors that are currently exposed to noise levels in excess of the designated standard, the Project should be considered significant if it causes a +3 dBA increase in noise levels. As such, if ambient noise levels at nearby receptors exceed the "fixed" thresholds from Part (4), then the measured ambient noise level "+3 dBA" will be used as the threshold to determine the significance of Project noise impacts.

Table 2 presents the significance thresholds applicable to this Project. As discussed in Section 2.3, only nighttime (10:00 PM-6:00 AM) thresholds are included because the Project is not expected to create any new daytime or evening noise impacts. Per Ventura County guidance, for situations where the measured ambient noise level in Table 1 exceeds the thresholds presented in the General Plan, then the "ambient noise level +3 dBA" becomes the noise standard. Please see Appendix B for the ambient noise measurement logs and Ventura County significance threshold determination.

**Table 2 Project Specific Significance Thresholds (dBA –  $L_{eq}$  1H)**

Receptor	Nighttime (10:00 PM – 6:00 AM)		
	Ambient Noise Level	General Plan Noise Threshold	Project Specific Noise Threshold
R1	52.2	45.0	55.2
R2	52.2	45.0	55.2
R3	52.2	45.0	55.2

Note: Per Ventura County guidance, when the measured ambient noise levels exceed the designated threshold, then the threshold becomes the "ambient noise level +3 decibels (dB)."

## 5.0 PROJECT OPERATIONAL IMPACTS

This section discusses the inputs, methodologies, and the results of the noise models used to predict Project noise impacts to nearby receptors. Specifically, noise impacts resulting from nighttime facility operations (mobile equipment, liquid and solid waste processing, etc.) are assessed.

### 5.1 Project Noise Source Characterization

In order to characterize the Project industrial noise sources, this NIA uses a combination of noise monitoring and documented Ventura County reference data to determine the noise level generated by proposed nighttime industrial operations. On April 24<sup>th</sup>, 2017, noise monitoring was conducted at Patriot's Anaheim facility. The Anaheim facility is similar to this Project because it too receives and treats non-hazardous wastewater using many of the same processes (mixing tanks, pumps, etc.) that are proposed for use at the Facility. Noise measurements of a centrifuge dewatering unit operating at a similar wastewater processing facility in Ventura County are also utilized. For mobile equipment (i.e. front-end loader) noise levels, documented reference noise source information from the Ventura County Construction Guidelines was utilized.

Table 3 below summarizes the noise source data utilized to model noise levels generated by the Project. Additional information regarding the sources, including the noise measurement logs, are included in Appendix C.

**Table 3 Industrial Noise Source Data**

Noise Source	Description	Source Type	L <sub>eq</sub> @ 50-feet (dBA)	Basis
Front-End Loader	Mobile equipment operating in the solid-waste mixing areas	Area	79.0	Ventura County Construction Guidelines
General Site Noise Sources	Pumps utilized to transfer liquids between tanks and other non-specific industrial sources located throughout the Facility	Area	55.5	Patriot Anaheim Facility Noise Monitoring
Mixing Tanks	Various mixing tanks located throughout the Facility	Point	54.9	Patriot Anaheim Facility Noise Monitoring
Centrifuges Dewatering Units	Various centrifuges located throughout the Facility	Point	74.3	Measurement at Similar Facility
Employee Parking	Employee's/employee vehicles make noise during arrival and departure.	Area	Predicted By Model	ISO 9613-2

Note: Transfer pumps were modeled as area sources within the tank farm areas, as their exact location will not be decided until the onsite tank farms are constructed and the site is operational.

## 5.2 Project Noise Impact Calculation Methodology

Using the source data shown in Table 3, SoundPLAN Essential 3.0 (SoundPLAN) computer noise model software was utilized to determine the expected noise impacts to nearby receptors from Facility nighttime operations. Source-receptor geometry, noise source data, terrain information (e.g. elevations, surface conditions), and obstructions (e.g. onsite buildings, large tank farms, and walls) were modeled. SoundPLAN models industrial and parking lot noise impacts at receptors based on the International Organization for Standardization's (ISO) "ISO 9613-2" standard for calculating outdoor sound propagation. Figure 5 (Appendix A) shows the modeled source-receptor geometry and nighttime noise impacts as modeled in SoundPLAN. The nighttime industrial model output files are included in Appendix E.

The following assumptions were utilized in the industrial source model:

- The most dominant noise sources (i.e. centrifuges, mixing tanks) are modeled as point sources in the appropriate locations. Front-end loader operations are modeled as an area sources within the mixing areas. General site noise sources (transfer pumps, other non-specific industrial sources) were also modeled as area sources because this measurement includes a variety of low intensity sources that are expected to occur throughout the onsite tank farms, but the precise location of specific sources is not yet known. The industrial model source-geometry figure (Figure 5) in Appendix A displays the locations of these modeled noise sources.
- The two onsite (2) parking areas are modeled as parking lots to account for noise generated by the ingress and egress of employee vehicles. Employees vehicles will arrive and depart the site during each of the three (3) shift changes.
- Because the area is relatively flat, terrain elevations are not included with the exception of the mixing area/pit. The mixing area slopes downward from east to west to a maximum depth of approximately 5-feet. This is where the front-end loader will operate during nighttime processing operations. This mixing pit provides some amount of noise attenuation by partially blocking line-of-sight between the equipment and nearby receptors, primarily Receptor 1.
- All noise sources (loader, pumps, mixing tanks, centrifuges) are conservatively assumed to all operate simultaneously during the nighttime peak hour.
- Reference noise spectrums from the SoundPLAN Essential 3.0 database were utilized to more accurately account for the frequency distribution of each industrial source. The diesel engine wheeled loader reference spectrum was utilized for the front-end loader and the average industrial spectrum (this spectrum is the average of about 150 industrial sources, such as compressors, fans, and coolers) was utilized for the other modeled sources.
- The Facilities buildings (office, lab, employee changing room, and hazardous materials storage building) were included in the model as permanent noise obstructions (i.e. buildings). The five (5) large tank farms located onsite throughout the Facility were also included as "industrial area" volume attenuation areas approximately 13 feet (4 meters) tall.
- The proposed landscape areas were also included as "foliage" ground absorption attenuation areas along the appropriate Facility boundaries, which provides a very small amount of added attenuation as noise propagates through them. Paved areas were also included as hard surfaces, which slightly increase noise levels due to increased noise reflection.
- The approximately 6-foot high wooden fence surrounding Receptor 1 was included as an existing wall. Conservatively, a reflection loss factor of 1.0 was included for this wall which is appropriate for barriers not designed for noise protection purposes (1.0 is the minimum reflection loss factor). As described previously, this two-story residence has few windows and no doors in areas facing the Facility.

### 5.3 Project Noise Impact Results

Table 4 presents the results of the industrial source nighttime noise prediction model for the receptors near the Facility (R1, R2 and R3). The modeled nighttime noise impact at each receptor is compared to the applicable Project significance thresholds presented in Table 2. Modeling files are included in Appendix E and industrial model results are displayed on Figure 5 (Appendix A). Note that all impacts are below the applicable nighttime significance threshold.

**Table 4 Industrial Source Nighttime Noise Impacts (dBA –  $L_{eq}$  1H)**

Receptor	Ambient Noise	Project Noise	Total Noise	Threshold	Significant?
Receptor 1	52.2	36.0	52.3	55.2	No
Receptor 2	52.2	36.6	52.3	55.2	No
Receptor 3	52.2	29.1	52.2	55.2	No

### 6.0 MITIGATIONS

As presented in Section 5.3, all Project impacts are below the applicable significance thresholds. Therefore, no mitigation is required.

### 7.0 CONCLUSIONS

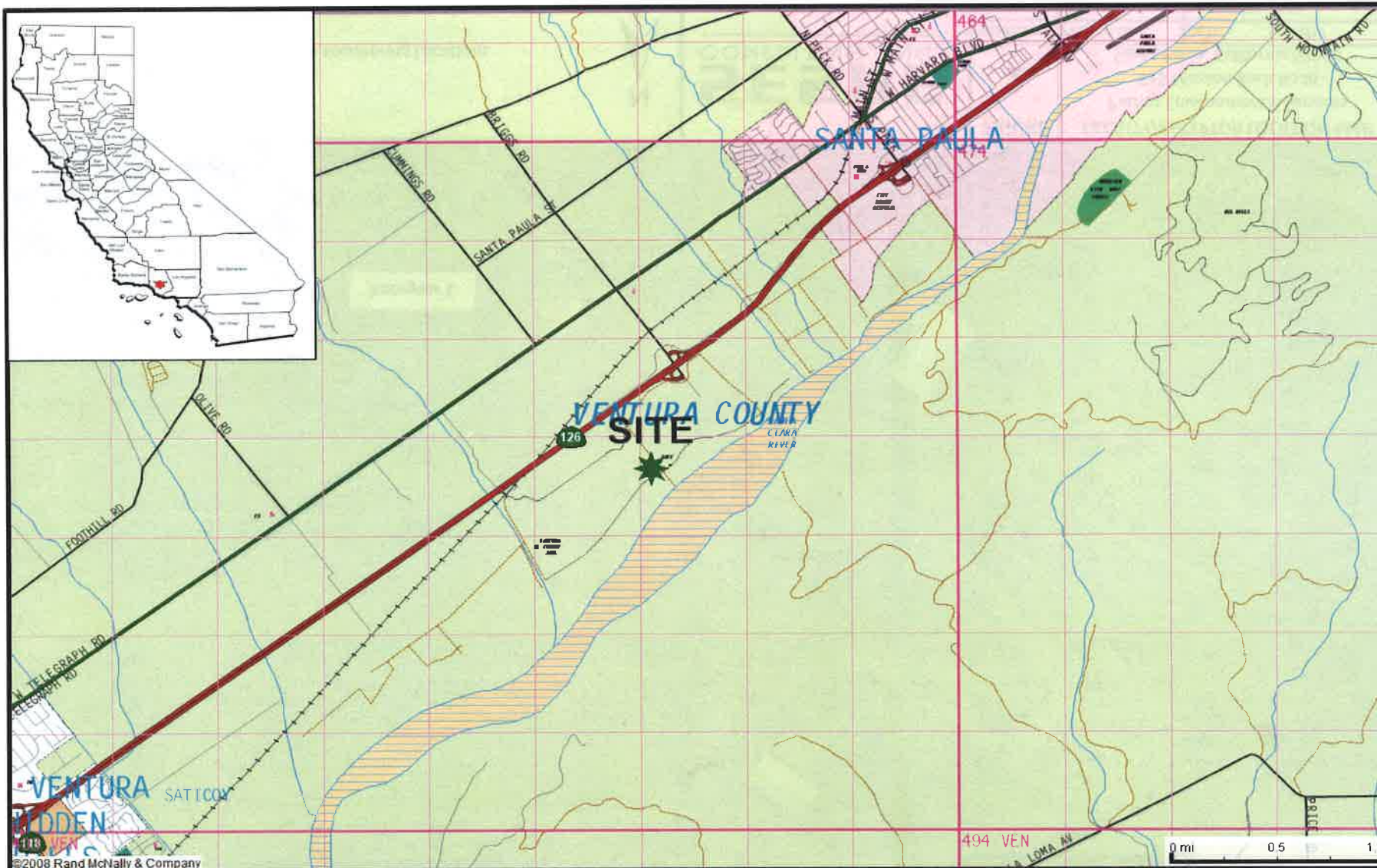
As shown in Table 4, Project noise impacts are less than the applicable thresholds. Table 4 also shows that the existing ambient noise level dominates the noise environment in this area (ambient levels are 7.2 dBA over the designated Ventura County nighttime significance threshold of 45 dBA). However, it is important to note that the Project's nighttime noise impacts are below the unadjusted significance threshold (i.e. 45 dBA).

This NIA finds that:

- Project daytime and evening industrial noise impacts are expected to be reduced or remain unchanged as a result of the Project.
- Project nighttime industrial noise impacts are less than significant at the nearby sensitive receptors (dwellings, schools, hospitals, nursing homes, churches, and libraries) without mitigation.
- The Project will result in a Class III, less than significant, noise impact.

## **APPENDIX A**

### **FIGURES**



Source: 2008 Rand McNally & Company



**SESPE**  
CONSULTING, INC.

**FIGURE**  
**1**

**REGIONAL LOCATION MAP**  
Patriot Environmental Services  
815 Mission Rock Road  
Santa Paula, California 93060

PROJECT #:	PA09.16.01	DATE:	3/23/17
SCALE:	as shown	DRAWN BY:	GPS



Source: Google Earth 2016

- Facility Boundary
- - Long-Duration (24-Hours) Noise Monitoring Locations



**SESPE**  
CONSULTING, INC.

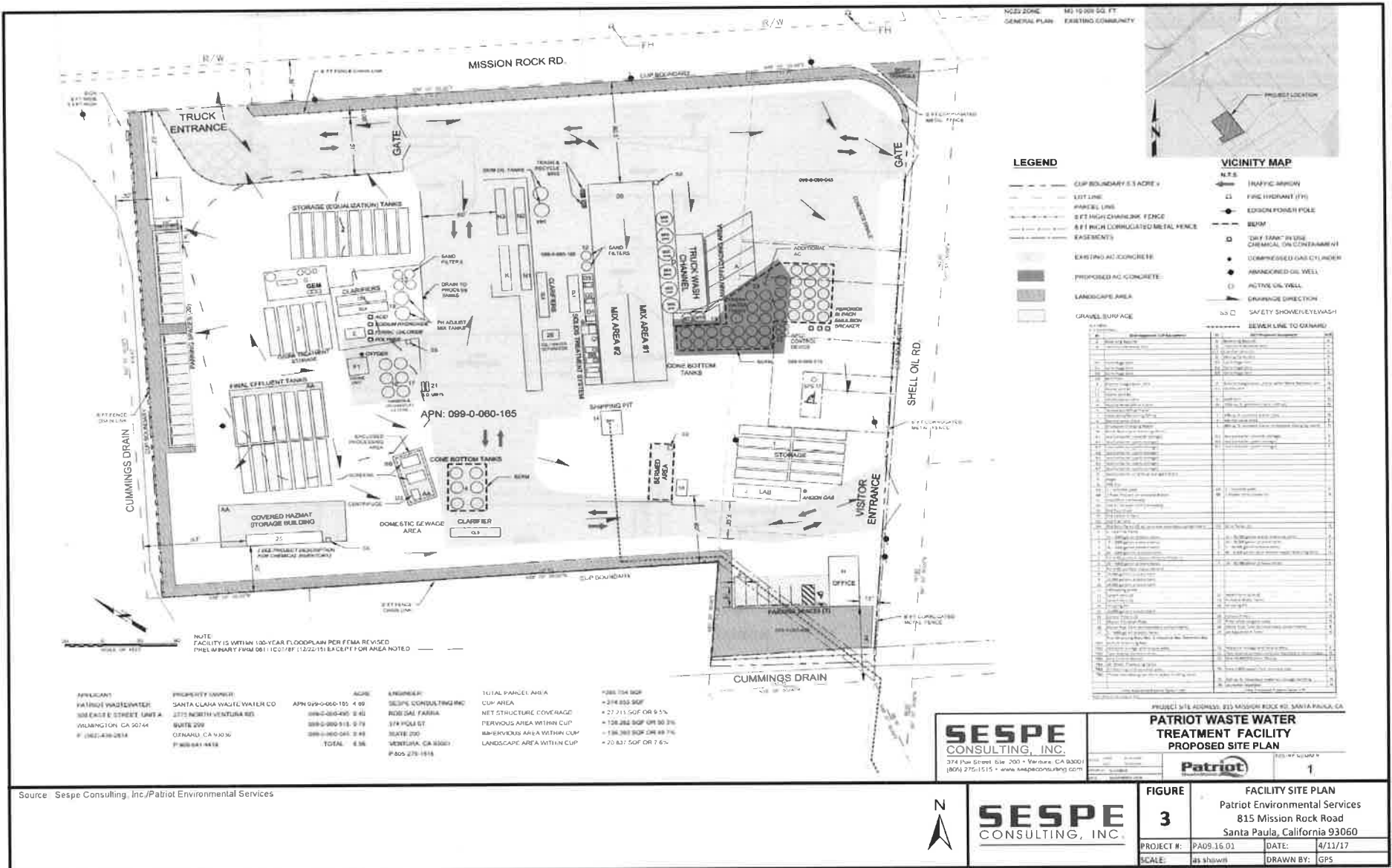
FIGURE

**2**

**FACILITY/RECEPTOR LOCATION MAP**

Patriot Environmental Services  
815 Mission Rock Road  
Santa Paula, California 93060

PROJECT #:	PA09.16.01	DATE:	4/11/17
SCALE:	as shown	DRAWN BY:	GPS



Source: Sespe Consulting, Inc./Patriot Environmental Services

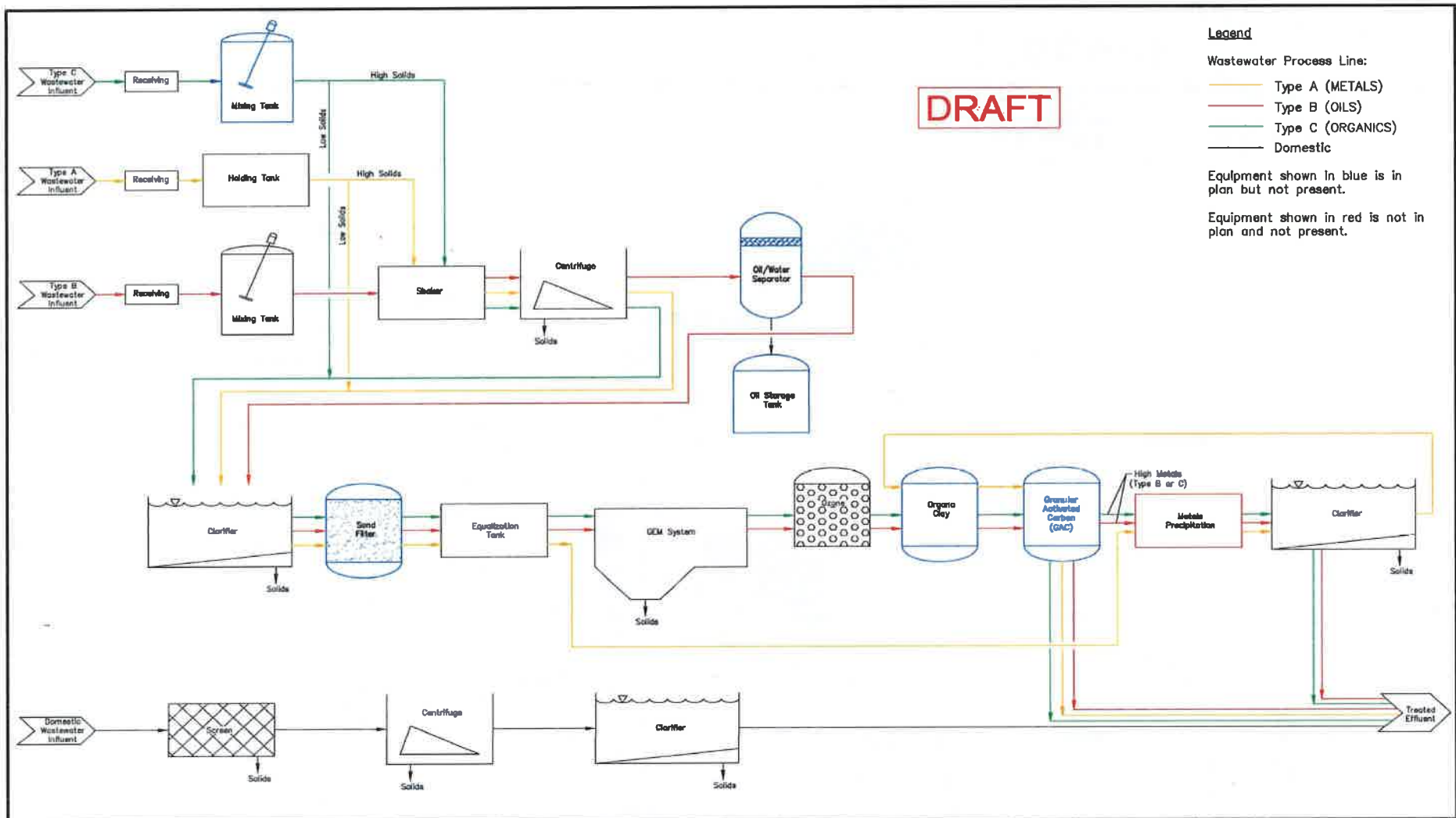


**SESPE**  
CONSULTING, INC.

FIGURE  
**3**

FACILITY SITE PLAN  
Patriot Environmental Services  
815 Mission Rock Road  
Santa Paula, California 93060

PROJECT #: PAD916.01 DATE: 4/11/17  
SCALE: as shown DRAWN BY: GPS



Source: Sespe Consulting, Inc./Patriot Environmental Services

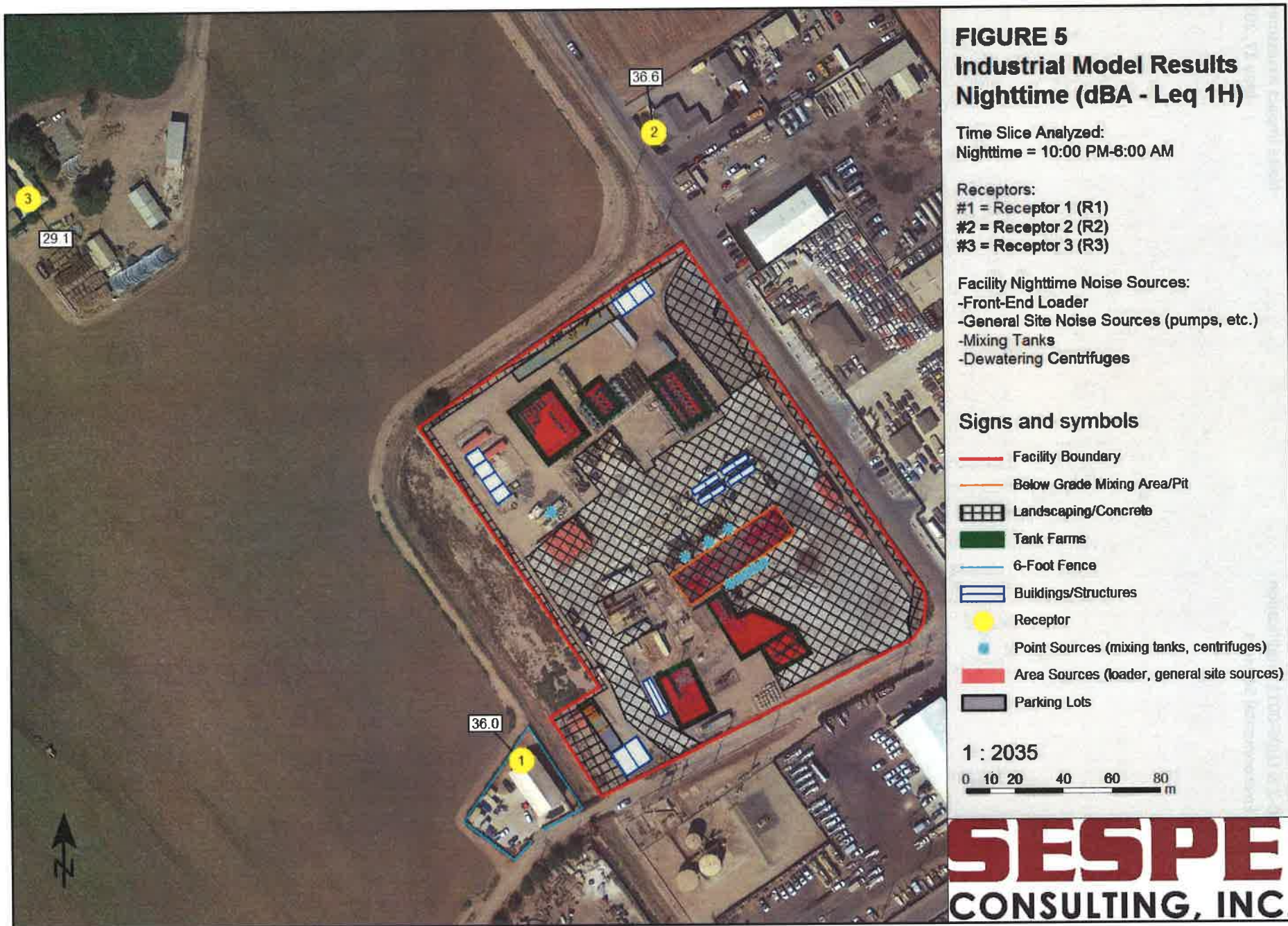


**SESPE**  
CONSULTING, INC.

FIGURE  
**4**

**PROCESS FLOW DIAGRAM**  
Patriot Environmental Services  
815 Mission Rock Road  
Santa Paula, California 93060

PROJECT #:	PA09 16 01	DATE:	4/11/17
SCALE:	N/A	DRAWN BY:	GPS



**APPENDIX B**  
**REGULATORY REFERENCE**

4. County Health and Safety/Loss Prevention (General Service Agency) is responsible for monitoring *hazardous materials* in the work place for all County employees through the Hazardous Materials Abatement Program.
5. CEO-Risk Management, Health, Safety & Loss Prevention (HSLP) will continue administration of the Asbestos Management Program which provides a full range of asbestos abatement surveillance guidance and regulatory compliance advisory services applicable to all County owned facilities and operations.
6. The County Agricultural Commissioner's Office is responsible for enforcing all pesticide regulations, issuing licenses to applicators, distributors and dealers who handle pesticides and conducting inspections of all application and distribution facilities.
7. The County Environmental Health Division will continue to work with the appropriate State agencies to assess the public health and environmental impacts of identified waste disposal sites in the County, including abandoned and illegal sites.
8. The County Sheriff's Department Office of Emergency Services, in cooperation with the County Fire Protection District will annually review and revise the County *Multihazard Functional Plan's* Major Hazardous Materials Incident Contingency section.
9. The County Public Works Agency Environmental & Energy Resources Department will maintain a CHWMP that includes goals, policies, programs and an implementation schedule for management of household *hazardous waste* for action by the County and participating cities.
10. The County Sheriff's Department Office of Emergency Services, will coordinate with local, state and federal agencies regarding off shore oil incidents and onshore oil pipeline incidents and annually update the County *Multihazard Functional Plan's* Off Shore Oil Incidents Contingency section.
11. The Environmental Health Division is responsible to implement the requirements of Division 20, Chapter 6.5, Section 25189.5 (Health and Safety Code), involving any illegal discharge or threatened illegal discharge of a *hazardous waste* within the County.
12. The Environmental & Energy Resources Department and the Environmental Health Division will continue to coordinate with the Ventura Regional Sanitation District and local cities on the Household Hazardous Waste Program, which involves a) the collection of unused household products and pesticides that are considered hazardous, and b) a community education program on the safe use and disposal of household chemical products.

## 2.16 Noise

For purposes of this Plan, "noise" can be defined as any sound having an intensity (in terms of volume, pitch or duration) at the point of human perception that has the potential to stress or damage the organs of human hearing or to cause unwanted or unhealthy physiological effects, or is otherwise considered unwanted or annoying by the listener. The effects of noise accumulate over time, so it is necessary to deal not only with the intensity of sound but also the duration of human exposure to the sound.

Noise can be annoying and physically harmful to human beings and to animals. Human exposure to intense noise can result in irreversible hearing damage, and has been linked to other physiological effects including headaches, nausea, irritability, constriction of peripheral blood vessels, changes in heart and respiratory rates and in glandular and gastrointestinal activity and increased muscular tension. The effects of noise exposure in residential environments can include coughs and hoarseness caused by the strain of shouting above the noise. Noise can also affect accuracy at work, and has been found to be linked to job-related accidents and absenteeism.

High levels of noise can have effects on animals that are similar to those on humans, in terms of tissue damage, changes in blood pressure and chemistry, and hormonal changes. Hatching failures (in birds) and other changes in reproductive processes have also been reported. Additional effects on wildlife can include panicking, disruption of breeding and nesting behavior, birth defects, changes in migratory patterns, and even changes in the size of bodily organs. Noise can also mask animals' auditory signals and interfere with some animals' communication of necessary information. Adverse effects of noise on

farm animals can include changes in milk production, incubation behavior, mating behavior, and animal size and weight.

Noise can also have adverse effects on materials and structures, particularly as a result of sonic booms and related aircraft noises. These aircraft generated noises can excite buildings to vibrate and can break windows and crack plaster.

While any number of individual measures have been proposed, mitigation measures for identifiable noise problems fall into three categories:

- Reduction of the noise at its source.
- Modification of the path of the noise.
- Reduction of noise at the receiver with various types of insulation.

Noise is directly associated with human activity, and is primarily a function of traffic, machinery and airports. On a generalized basis, motor vehicles, as a group, are the most pervasive contributors to urban noise, while aircraft, railroads and certain high intensity industrial noise generators may produce the most aggravated community annoyance reactions. Due to wide distribution and the types of machinery used, industrial sources are the second greatest noise generator. Airports are regarded as the third greatest noise generator. Other significant noise sources are powered gardening equipment, amplified music, power tools and air conditioners.

Land uses considered *noise sensitive uses* include residential, educational, and health facilities, research institutions, certain recreational, and entertainment facilities (typically, indoor theaters and parks for passive activities) and churches. Uses considered less sensitive to noise include commercial and industrial facilities and certain noise-generating recreational facilities such as playgrounds and gymnasiums.

The goal, policies and programs that apply to noise are as follows:

## **2.16.1 Goal**

To protect the health, safety and general welfare of County residents by elimination or avoidance of adverse noise impacts on existing and future *noise sensitive uses*.

## **2.16.2 Policies**

1. All *discretionary development* shall be reviewed for noise compatibility with surrounding uses. Noise compatibility shall be determined from a consistent set of criteria based on the standards listed below. An acoustical analysis by a qualified acoustical engineer shall be required of *discretionary developments* involving noise exposure or noise generation in excess of the established standards. The analysis shall provide documentation of existing and projected noise levels at on-site and off-site receptors, and shall recommend noise control measures for mitigating adverse impacts.
  - (1) *Noise sensitive uses* proposed to be located near highways, truck routes, heavy industrial activities and other relatively continuous noise sources shall incorporate noise control measures so that:
    - a. Indoor noise levels in habitable rooms do not exceed CNEL 45.
    - b. Outdoor noise levels do not exceed CNEL 60 or  $L_{eq}1H$  of 65 dB(A) during any hour.
  - (2) *Noise sensitive uses* proposed to be located near railroads shall incorporate noise control measures so that:
    - a. Guidelines (1)a. and (1)b. above are adhered to.
    - b. Outdoor noise levels do not exceed  $L_{10}$  of 60 dB(A).
  - (3) *Noise sensitive uses* proposed to be located near airports:
    - a. Shall be prohibited if they are in a CNEL 65 or greater, noise contour.
    - b. Shall be permitted in the CNEL 60 to CNEL 65 noise contour area only if means will be taken to ensure interior noise levels of CNEL 45 or less.

- (4) Noise generators, proposed to be located near any *noise sensitive use*, shall incorporate noise control measures so that ongoing outdoor noise levels received by the noise sensitive receptor, measured at the exterior wall of the building, does not exceed any of the following standards:

- a.  $L_{eq}1H$  of 55dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.
- b.  $L_{eq}1H$  of 50dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.
- c.  $L_{eq}1H$  of 45dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.

Section 2.16.2(4) is not applicable to increased traffic noise along any of the roads identified within the 2020 Regional Roadway Network (Figure 4.2.3) Public Facilities Appendix of the Ventura County General Plan (see 2.16.2-1(1)). In addition, State and Federal highways, all railroad line operations, aircraft in flight, and public utility facilities are noise generators having Federal and State regulations that preempt local regulations.

- (5) Construction noise shall be evaluated and, if necessary, mitigated in accordance with the County Construction Noise Threshold Criteria and Control Plan.
2. Discretionary development which would be impacted by noise, or generate project related noise which cannot be reduced to meet the standards prescribed in Policy 2.16.2-1., shall be prohibited. This policy does not apply to noise generated during the construction phase of a project.
  3. The priorities for noise control shall be as follows:
    - (1) Reduction of noise emissions at the source.
    - (2) Attenuation of sound transmission along its path, using barriers, landforms modification, dense plantings, and the like.
    - (3) Rejection of noise at the reception point via noise control building construction, hearing protection or other means.

### 2.16.3 Programs

1. The Oxnard and Camarillo Airport Master Plans recommend the preparation of noise abatement plans, the formation of local noise abatement committees with input from local citizens, and distribution of a periodic newsletter documenting noise abatement policies to aircraft operators and other interested parties. The airport plans also recommend periodic sampling measurements and updating of the CNEL noise model parameters, and discussion of alternative approaches for noise abatement.

In addition, the Oxnard plan recommends publication of a map of recommended noise abatement flight tracks and operating procedures, for distribution to area airports and other interested parties.

2. The Public Works Agency will continue to work with CalTrans and City transportation offices to optimize signal timings and arterial stop sign location so that stop-go truck traffic is minimized in areas surrounded by noise-sensitive uses.
3. The noise *goals, policies* and *programs*, as well as the noise appendix, will be reviewed by the Planning Division as needed.
4. The Public Works Agency will prepare a proposal for consideration by the Board of Supervisors to study the feasibility of constructing noise barriers in areas containing existing *noise sensitive uses* which are or will be significantly impacted by traffic noise.
5. The Building and Safety Division will continue to enforce Appendix Chapter 35 of the Uniform Building Code (UBC) and UBC Appendix 3501 of the Ventura County Building Code for the purposes of protecting persons within new hotels, motels, apartment houses, and dwelling units from effects of excessive noise including external community noise.

6. The Building and Safety Division and Public Works Agency shall prepare a budgetary proposal for Board consideration to amend the County Building Code, including Excavation and Grading Standards, to impose the noise criteria and mitigation measures contained within the County Construction Noise Threshold Criteria and Control Plan.

## 2.17 Civil Disturbance

Civil unrest, terrorism, and national security emergency hazards are forms of civil disturbance, which are of major public concern and necessitate a planned and coordinated response by a number of public agencies.

### Civil Unrest

Civil unrest is the spontaneous disruption of normal, orderly conduct and activities in urban areas, or outbreak of rioting or violence that is of a large-scale nature. Civil unrest can be spurred by specific events, such as large sporting events or criminal trials, or can be the result of long-term disfavor with authority. Civil unrest is usually noted by the fact that normal on-duty police and safety forces cannot adequately deal with the situation until additional resources can be acquired. This is the time period when civil unrest can grow to large proportions.

Threat to law enforcement and safety personnel can be severe and bold in nature. Securing of essential facilities and services is necessary. Looting and fires can take place as a result of perceived or actual non-intervention by authorities.

The various agencies that are vested with providing emergency response services within their respective jurisdictions are very adept at dealing with ordinary and routine emergency incidents. There are, however, incidents and circumstances that by their very nature exceed the ability and capacity of a single jurisdiction to cope with the situation. When this occurs, a request for additional resources is initiated and is accommodated through mutual aid agreements. Incidents, whether they are natural (e.g., flooding, earthquakes), or civil disturbances that occur simultaneously in a widespread manner affecting multiple jurisdictions, require a greater degree of coordination and organization. The Ventura County Law Enforcement Mutual Aid Manual addresses the mechanics of mutual aid activation and level of response. It also speaks to the establishment of a unified command structure organized to deal with incidents that affect the entire operational area whether in a direct or indirect fashion.

Active participation in the unified command and incident command system is essential if a coordinated effort is to be initiated and maintained.

The entire County, consisting of residential, industrial and commercial properties, is vulnerable to the effects of civil unrest.

### Terrorism

Terrorism is defined as the use of fear for intimidation, usually for political goals. Terrorism is a crime where the threat of violence is often as effective as the commission of the violent act itself. Terrorism affects us through fear, physical injuries, economic losses, psychological trauma, and erosion of faith in government. Terrorism is not an ideology. Terrorism is a strategy used by individuals or groups to achieve their goals.

In the wake of the 1993 World Trade Center bombing in New York and the Oklahoma City bombing in 1995, terrorism became a serious concern for emergency management, emergency responders, and the public at large. However, the 2001 attack on the World Trade Center and the Pentagon has now elevated our concern about terrorism to a level we never imagined, and requires us to be prepared to respond to situations that go beyond the terrorist incident scenarios that we are familiar with.

Terrorists espouse a wide range of causes. They can be for or against almost any issue, religious belief, political position, or group of people of one national origin or another. Because of the tremendous variety of causes supported by terrorists and the wide variety of potential targets, there is no place that is truly safe from terrorism. Throughout California there is nearly limitless number of potential targets, depending on the perspective of the terrorist. Some of these targets include: medical facilities/clinics, religious facilities, government offices, public places (such as shopping centers), schools, power plants, refineries, utility infrastructures, water storage facilities, dams, private homes of prominent individuals, financial institutions and other businesses.

operating under load or at near full power. In addition to the minute-by-minute variations in noise producing activities, construction projects are carried out in several different phases.

**Figure 2. Typical Construction Equipment Noise**

Equipment Type Noise Source	Dominant Noise Components <sup>1</sup>	50-Foot Noise Level (L <sub>eq</sub> ) dBA <sup>2,3</sup>	Noise Level Range (L <sub>p</sub> ) dBA <sup>2,3</sup>	50-Foot Maximum Noise Level (L <sub>max</sub> ) dBA <sup>2,3</sup>
Air Compressor (portable) <sup>4</sup>	E, C, H, I	81	76-89	89
Air Compressor (stationary)	E, C, H, I	82	76-89	89
Auger, Drilled Shaft Rig	E, C, F, I, W	82	76-89	89
Backhoe	E, C, F, I, H, W	85	81-90	90
Bar Bender	E, P, W	82	78-88	85
Chain Saw	E, W, C	85	72-88	88
Compactor	E, C, F, I, W	82	81-85	85
Concrete Batch Plant	W, E, C	92	80-96	96
Concrete Mixer (small trailer)	W, E, C	67	65-68	68
Concrete Mixer Truck	E, C, F, W, T	85	69-89	89
Concrete Pump Trailer	E, C, H	82	74-84	84
Concrete Vibrator	W, E, C	76	68-81	81
Crane, Derrick	E, C, F, I, T	88	79-90	90
Crane, Mobile	E, C, F, I, T	83	80-85	85
Dozer (Bulldozer)	E, C, F, I, H	80	77-90	90
Excavator	E, C, F, I, H, W	87	83-92	92
Forklift	E, C, I, W	84	81-86	86
Front End Loader	E, C, F, I, H	79	77-90	90
Generator	E, C	78	71-87	87
Gradall	E, C, F, I, W	82	78-85	85
Grader	E, C, F, I, W	85	79-89	89
Grinder	W	80	75-82	82
Hydraulic Hammer	W, E, C, H	102	99-105	105
Impact Wrench	W, P	85	75-85	85
Jack Hammer	P, W, E, C	82	75-88	88
Paver	E, D, F, I	89	82-92	92
Pile Driver (Impact/ Sonic/ Hydraulic)	W, P, E	101 / 96 / 65	94-107 / 90-99 / 65	107 / 99 / 65
Pavement Breaker	W, E, P	82	75-85	85
Pneumatic Tool	P, W, E, C	85	78-88	88
Pump	E, C	76	68-80	80
Rock Drill	W, E, P	98	83-99	99
Roller	E, C, F, I, W	74	70-83	83
Sand Blaster	W, E, C, H, I	85	80-87	87
Saw, Electric	W	78	59-80	80
Scraper	E, C, F, I, W	88	82-91	91
Shovel	E, C, F, I, W	82	77-90	90
Tamper	W, E, C	86	85-88	88
Tractor	E, C, F, I, W	82	77-90	90
Trencher		83	81-85	85
Trucks (Under Load)	E, C, F, I, T	88	81-95	95
Water Truck	W, E, C, F, I, T	90	89-94	94
Other Equipment with Diesel	E, C, F, I	82	75-88	88

Note 1. Ranked noisy components. C=Casing, E=Exhaust, F=Fan, H=Hydraulics, I=Intake air, P=Pneumatic exhaust, T=Transmission, W=Work tool.

Note 2. Table based on EPA studies and measured data from various construction equipment and manufacturer's data.

Note 3. Equipment noise levels are at 50 feet from individual construction equipment and with no other noise contributors.

Note 4. Portable air compressor rated at 75 cfm or greater and operating at greater than 50 psi.

## Appendix B

### Estimating Construction Project Noise

For project planning purposes, where the potential for noise impacts exist, it is possible to estimate the potential construction noise impacts in advance by developing an inventory of noisy construction equipment and processes for the various stages and phases of the project. Such screening methods assist construction project managers and estimators in planning for the potential need for noise mitigation.

#### Construction Equipment Inventory

An inventory of the number and type of noisy construction equipment to be used during planned daytime, evening and nighttime construction activities, their associated noise emissions, and other relevant information can be included on Figure B-2, Construction Phase Receptor Noise Estimation Worksheet. Using this form, construction noise levels for the various phases of construction can be estimated using the phase's equipment inventory, the typical 50-foot equipment noise levels (listed in Figure A-1 of Appendix A) along with typical by-phase construction equipment use factors, provided in Figures A-1 through A-5 of Appendix A.

#### Construction Noise Estimates

Calculations can be performed to estimate the daytime, evening and nighttime maximum ( $L_{max}$ ) and one-hour energy average ( $L_{eq}$ ) noise levels expected at the noise-sensitive location, based on the typical maximum equipment noise levels listed in Figure A-1 in Appendix A. The calculations are to be made for the various activities and locations where project construction noise will result in the greatest noise impact (*noise levels at other sensitive locations can also be calculated, if necessary*). The calculations and results should be entered on a form similar to Figure B-2, the Construction Phase Receptor Noise Estimation Worksheet. The result of a sample construction noise calculation is provided in Figure B-1.

The following calculation procedures may be used to estimate the construction noise by phase.

1. Calculate each phase's  $L_{max}$  according to the following method:

$$L_{max} [\text{equipment type}] = ML - 20 \log_{10} (D/50)$$

where:

ML = Typical single equipment maximum noise level ( $L_{max}$ ) at 50 feet, in dBA.  
(*This may be replaced by a measured, under-load, maximum noise level*).

D = Distance from the equipment to the noise-sensitive location, in feet.

Repeat the above calculation for each item of potentially noisy equipment. Then, select the noisiest individual pieces of equipment that operate in their loudest mode at the very same time and combine them logarithmically to estimate the overall maximum construction noise level ( $L_{max}$ ) at the noise-sensitive location(s) for each project phase, as follows:

$$L_{max} [\text{overall project at receptor}] = 10 \log_{10} (\sum 10^{(L_{max} [\text{equipment type}] / 10)})$$

## Construction Noise Threshold Criteria

2. Calculate each phase's one-hour  $L_{eq}$  according to the method recommended by the U.S. Federal Highway Administration ("Highway Construction Noise: Measurement, prediction and mitigation," U.S. Department of Transportation, Federal Highway Administration Special Report, March 1977), as follows:

First, the construction phase's one-hour  $L_{eq}$  is to be calculated at the sensitive receptor location for each item of potentially noisy equipment using the following equation:

$$L_{eq}(h) \text{ [equipment type]} = ML - 20 \log_{10} (D/50) + 10 \log_{10} (N \times HP/100)$$

where:

- ML = Typical single equipment maximum noise level ( $L_{max}$ ) at 50 feet, in dBA. *(This may be replaced by a measured, under-load, maximum noise level).*
- D = Shortest distance (feet) from the equipment type to the nearest noise-sensitive location, or if a more sensitive receptor is further away, to the noise-sensitive receptor with the greatest impact. If the distance is measured in meters, use the ratio D/15 instead of D/50.
- N = Maximum number of the same equipment type operating hourly on the project during the construction phase.
- HP = "Hourly percentage," expressed as the greatest nominal percent of time that the equipment is operated under load at the project site. This factor is based on EPA values or is estimated based on past experience with similar projects. Thus, the effective usage factor is (EUF) =  $N \times HP/100$ .

Repeat the above calculations for each item of potentially noisy equipment. Then, the individual contribution of every item of equipment are to be combined logarithmically to obtain the overall construction hourly  $L_{eq}$  at the noise-sensitive location(s) for each project phase, as follows:

$$L_{eq}(h) \text{ [overall project at receptor]} = 10 \log_{10} (\sum 10^{(\text{one-hour } L_{eq} \text{ [equipment type]} / 10)})$$

3. The calculated  $L_{max}$  and  $L_{eq}(h)$  levels can then be compared with the construction noise threshold criteria. Where it is estimated that the criteria would be exceeded, noise mitigation planning can be undertaken.

**APPENDIX C**

**AMBIENT NOISE LEVEL DETERMINATION**

**Ambient Noise Summary**

Receptor 1 (R1)

Serial Number                    BG1040008  
 Start Time                        10:05:49    12-Apr-2017  
 Run Length                       24:00:00    5529600

UNIT REV                        R12N

Microphone Information		
Description	Units	Value
Sensitivity	dB	29
Polarization	Volts	0
Meter Range	dB	120
Max Level	dB	140
Meas. Floor	dB	-20

Calibration Information			
Description		Units	Value
Pre-Cal	Level	dB	113.9
	Date		10:02:56    12-Apr-2017
Post-Cal	Level	dB	113.9
	Date		10:06:16    13-Apr-2017
ReCert	Date		Unavailable

Configuration Information			
Description	Units	Meter 1	Meter 2
Integration Threshold	dB	OFF	OFF
Exchange Rate	dB	3	3
Criterion Level	dB	90	85
Upper Limit Level	dB	140	140
Projected Time	Hrs	24	24
Weighting		A	A
Time Response		SLOW	SLOW

Measurement	Units	Meter 1 Broadband	Meter 2 Broadband
Lavg	dB	54	54
Lmax	dB	84.8	84.8
Lmin	dB	48.9	48.9
Lpk	dB	100	100
TWA	dB	58.8	58.7
PTWA	dB	58.8	58.7
DOSE	%	0.08	0.24
PDOSE	%	0.08	0.24
SEL	dB	103.4	103.3
EXP	p2s	9	9

**Ambient Noise Summary**

Receptor 1 (R1)

Measurement	Units	Value
LDN	dB	59.6
CNEL	dB	59.3
TAKTMAX (5sec)	dB	N/A
LC-A	dB	N/A

Exceedence	Units	Value
L01	dB	59.2
L10	dB	55.3
L50	dB	53
L90	dB	51.4

		Meter 1			Meter 2		
		Count	Percent	Time	Count	Percent	Time
Overload	(OL)	0	0	00:00:00	0	0	00:00:00
Under-Range	(UR)	0	0	00:00:00	0	0	00:00:00
Upper Limit	(UL)	0	0	00:00:00	0	0	00:00:00

Exceedence Table

	0	1	2	3	4	5	6	7	8	9
0	84.8	59.2	57.7	57	56.6	56.3	56	55.8	55.6	55.4
10	55.3	55.1	55	54.9	54.7	54.6	54.5	54.4	54.4	54.3
20	54.2	54.2	54.1	54	54	53.9	53.9	53.8	53.8	53.8
30	53.7	53.7	53.6	53.6	53.6	53.5	53.5	53.4	53.4	53.4
40	53.3	53.3	53.3	53.2	53.2	53.2	53.1	53.1	53.1	53
50	53	53	52.9	52.9	52.9	52.8	52.8	52.7	52.7	52.7
60	52.6	52.6	52.6	52.5	52.5	52.5	52.4	52.4	52.4	52.3
70	52.3	52.2	52.2	52.2	52.1	52.1	52	52	52	51.9
80	51.9	51.8	51.8	51.7	51.7	51.7	51.6	51.6	51.5	51.5
90	51.4	51.4	51.3	51.3	51.2	51.2	51	51	50.9	50.7

## Ambient Noise Data

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
Study 1	0:01:00	0:01:00		53.9	92.6	60	50.8
	0:02:00	0:02:00		52.9	82.4	56.6	51.2
	0:03:00	0:03:00		51.3	72.1	55.1	49.7
	0:04:00	0:04:00		52.4	72.9	54.1	50.8
	0:05:00	0:05:00		54.1	74.5	57.8	51.5
	0:06:00	0:06:00		56.9	73.7	61.3	54.3
	0:07:00	0:07:00		55.2	71.6	59.2	51.9
	0:08:00	0:08:00		55.1	71.3	58.1	51.4
	0:09:00	0:09:00		55.2	74.4	58.6	51.7
	0:10:00	0:10:00		54.1	68.1	55.8	51.8
	0:11:00	0:11:00		54.4	70.2	57	51.4
	0:12:00	0:12:00		55	80.6	63.8	51.6
	0:13:00	0:13:00		52.5	73	55.1	51.2
	0:14:00	0:14:00		52.1	68.9	54	50.3
	0:15:00	0:15:00		52.2	70.2	55.3	51
	0:16:00	0:16:00		53.1	69.9	55.4	51.3
	0:17:00	0:17:00		53.8	70.9	55.6	52.6
	0:18:00	0:18:00		54.8	71.4	56.7	51.9
	0:19:00	0:19:00		56.2	72.4	59.3	54.6
	0:20:00	0:20:00		54.7	73.4	56.7	53.2
	0:21:00	0:21:00		55.8	73	59.8	53.2
	0:22:00	0:22:00		54.5	72.6	58.8	52.1
	0:23:00	0:23:00		52.3	72.3	54.5	50.7
	0:24:00	0:24:00		55	71.6	58	52.1
	0:25:00	0:25:00		52.3	69.4	55.4	50.8
	0:26:00	0:26:00		51.9	68	53.9	49.9
	0:27:00	0:27:00		52.1	68.6	54.4	50.9
	0:28:00	0:28:00		53.3	70	56.4	51.4
	0:29:00	0:29:00		53.2	76.6	61.1	51.1
	0:30:00	0:30:00		56.8	80.5	65.6	50.8
	0:31:00	0:31:00		55.9	76.3	60.7	51.5
	0:32:00	0:32:00		54.2	76.1	58.6	51.5
	0:33:00	0:33:00		62.2	84.3	71.4	51.5
	0:34:00	0:34:00		52.2	69.4	54.2	50.6
	0:35:00	0:35:00		52.1	77.9	55.5	50.8
	0:36:00	0:36:00		56.4	76.9	62.8	52
	0:37:00	0:37:00		61.3	82.9	70.5	50.8
	0:38:00	0:38:00		52.9	70.1	55.7	51.6
	0:39:00	0:39:00		53.2	69.2	56.3	50.9
	0:40:00	0:40:00		54.5	75.9	61.1	50.6
	0:41:00	0:41:00		52.4	69.8	55.8	50.6
	0:42:00	0:42:00		52.5	69	56.7	51.2
	0:43:00	0:43:00		51.9	66.7	53.7	50.4
	0:44:00	0:44:00		52.1	66.6	53.1	50.8
	0:45:00	0:45:00		51.9	65.5	52.8	50.4
	0:46:00	0:46:00		52.1	65.5	53	51.1
	0:47:00	0:47:00		51.7	67.9	55.2	50.4
	0:48:00	0:48:00		57.7	83.2	63.8	50.2
	0:49:00	0:49:00		51.9	66.3	53.4	50.8
	0:50:00	0:50:00		51.8	66.3	53.9	50.6
	0:51:00	0:51:00		52.3	71.7	55.7	50.7
	0:52:00	0:52:00		52.4	67.7	53.5	50.9
	0:53:00	0:53:00		52.7	65.8	53.9	51.9
	0:54:00	0:54:00		52.3	75.9	57.2	50.6
	0:55:00	0:55:00		54.3	73.7	58.6	51.7
	0:56:00	0:56:00		55.2	75.1	60.9	52
	0:57:00	0:57:00		52.8	66.4	53.8	51.1
	0:58:00	0:58:00		52.4	67	53.6	50.9
	0:59:00	0:59:00		53	67	54.6	51.1
	1:00:00	1:00:00		52.3	76	55.8	51
	1:01:00	1:01:00		52	69.5	54.3	50.5
	1:02:00	1:02:00		51.8	65.4	53.3	50.6
	1:03:00	1:03:00		52.3	67.7	53.7	50.8
	1:04:00	1:04:00		51.7	67	53.1	50.9
	1:05:00	1:05:00		53.7	69.1	55.9	51.9

Start: 10:05:49 AM 4/12/2017

Stop: 10:05:49 AM 4/13/2017

## 24-Hour Measurement Summary

	Day	Evening	Night
Peak Hour:	58.3	54.3	53.4
Average Hour:	54.7	53.8	52.2

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	1:06:00	1:06:00		52.9	77.7	55.9	51.5
	1:07:00	1:07:00		52.2	66.8	53.7	50.8
	1:08:00	1:08:00		53.1	69.8	55.9	51.4
	1:09:00	1:09:00		53.1	67.1	54.8	51.8
	1:10:00	1:10:00		56.2	76	62.7	50.2
	1:11:00	1:11:00		51.9	71.3	53.9	50.3
	1:12:00	1:12:00		52.9	71.9	55.6	51.7
	1:13:00	1:13:00		56.4	76.3	60.4	52.6
	1:14:00	1:14:00		54.1	73.9	60.1	51.7
	1:15:00	1:15:00		55.9	75	60.3	51.6
	1:16:00	1:16:00		52.6	79.6	58.7	50.7
	1:17:00	1:17:00		52.1	67.8	55.2	50.5
	1:18:00	1:18:00		53.4	69.7	56.6	51.2
	1:19:00	1:19:00		55.9	84.9	63.9	50.6
	1:20:00	1:20:00		52.2	66.3	54	50.8
	1:21:00	1:21:00		56.3	75.7	61.6	51
	1:22:00	1:22:00		52.5	71.5	54.6	50.7
	1:23:00	1:23:00		56.3	74.4	60.4	51.9
	1:24:00	1:24:00		52.4	69.7	54.5	50.4
	1:25:00	1:25:00		52.4	67.1	53.7	51.3
	1:26:00	1:26:00		57.7	83.5	65.8	52.6
	1:27:00	1:27:00		53.1	68.6	55.3	51.4
	1:28:00	1:28:00		55	76.1	62.2	52.4
	1:29:00	1:29:00		59.7	83.6	67.6	52.7
	1:30:00	1:30:00		55.9	75.8	62.7	50.5
	1:31:00	1:31:00		60.9	82.4	65.6	52.3
	1:32:00	1:32:00		53	68.7	57	50.8
	1:33:00	1:33:00		58.8	82.3	64.6	50.9
	1:34:00	1:34:00		53.2	70.3	58.3	51.1
	1:35:00	1:35:00		54.3	70.8	58.2	50.7
	1:36:00	1:36:00		52.6	69.5	56.6	48.9
	1:37:00	1:37:00		51.6	72.3	55.4	49.2
	1:38:00	1:38:00		56	75	62.5	52.6
	1:39:00	1:39:00		53.7	71.8	57.2	52.1
	1:40:00	1:40:00		52.5	67.7	54.3	50.7
	1:41:00	1:41:00		53	70.5	56	51.2
	1:42:00	1:42:00		51.9	65.9	53.3	50.7
	1:43:00	1:43:00		52.9	70.4	56.1	51.6
	1:44:00	1:44:00		56.7	77	60.4	53.6
	1:45:00	1:45:00		56.2	76.4	59.1	54.2
	1:46:00	1:46:00		54.9	70.3	57.6	52.8
	1:47:00	1:47:00		53.8	78	59	52.2
	1:48:00	1:48:00		53.6	76.4	58.6	51.3
	1:49:00	1:49:00		55.4	83	64.4	52.4
	1:50:00	1:50:00		55.1	70.5	58.9	52.6
	1:51:00	1:51:00		56.1	71.8	57.9	54.9
	1:52:00	1:52:00		55.4	73.4	57.6	54.2
	1:53:00	1:53:00		55.6	73.9	58.3	52.5
	1:54:00	1:54:00		56.5	73.5	60.7	51.3
	1:55:00	1:55:00		52.1	69.5	55	50.7
	1:56:00	1:56:00		52.5	68.9	55.4	50.9
	1:57:00	1:57:00		51.9	67.4	54.2	50.6
	1:58:00	1:58:00		52.5	71.1	54.4	51.3
	1:59:00	1:59:00		52.6	71.6	55.1	50.1
	2:00:00	2:00:00		53.2	71.3	56.6	51.2
	2:01:00	2:01:00		52.7	69.1	54.4	51
	2:02:00	2:02:00		52.4	68	53.7	50.8
	2:03:00	2:03:00		52.4	72.7	53.9	50.8
	2:04:00	2:04:00		51.3	68.5	54	49.6
	2:05:00	2:05:00		54.5	70.7	58	50.7
	2:06:00	2:06:00		55.9	71.9	57.3	54.7
	2:07:00	2:07:00		55.6	70.2	57.2	52
	2:08:00	2:08:00		52.4	66.3	53.8	50.7
	2:09:00	2:09:00		52.5	70.3	54.5	50.4
	2:10:00	2:10:00		53.1	68.3	56.1	51.1
	2:11:00	2:11:00		53.2	72.5	56	51.4

**Ambient Noise Data**

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	2:12:00	2:12:00		52.5	75.8	56.5	50.8
	2:13:00	2:13:00		51.9	68.3	53.1	50.7
	2:14:00	2:14:00		52.9	71.1	55	51.3
	2:15:00	2:15:00		53.3	72.3	58	51.1
	2:16:00	2:16:00		53.2	70.6	54.5	51.8
	2:17:00	2:17:00		54.1	73.5	57.7	52.3
	2:18:00	2:18:00		54.2	81.1	60.6	51
	2:19:00	2:19:00		54.6	76.6	56.7	52.7
	2:20:00	2:20:00		53.9	70.1	55.4	51.8
	2:21:00	2:21:00		54.6	71	58.1	53.1
	2:22:00	2:22:00		53.5	73.2	56.7	51.6
	2:23:00	2:23:00		54.1	71.6	56.9	52.3
	2:24:00	2:24:00		53	68	54.3	51.6
	2:25:00	2:25:00		53.1	74.5	58	51.3
	2:26:00	2:26:00		56.8	77.4	62.4	53.2
	2:27:00	2:27:00		53.9	72.5	56.8	52.3
	2:28:00	2:28:00		54.4	73.4	56	53.4
	2:29:00	2:29:00		54.8	74.6	58.4	51.8
	2:30:00	2:30:00		53.5	74.1	55.7	50.8
	2:31:00	2:31:00		54.5	74.6	57.9	51
	2:32:00	2:32:00		54.7	74.1	57	52.4
	2:33:00	2:33:00		54.2	70	56.3	52.2
	2:34:00	2:34:00		56.2	70.1	57.3	52.8
	2:35:00	2:35:00		54.1	70.1	57.3	51
	2:36:00	2:36:00		52.7	67.5	54.4	50.5
	2:37:00	2:37:00		52.5	71.6	56.2	51.1
	2:38:00	2:38:00		52.8	66.9	53.7	51.3
	2:39:00	2:39:00		52.1	66.8	53.4	50.5
	2:40:00	2:40:00		55.5	77.4	63.6	51.1
	2:41:00	2:41:00		56	83.5	62.4	50.8
	2:42:00	2:42:00		54.7	75.7	57.4	52.1
	2:43:00	2:43:00		53.1	71.6	54.8	51.3
	2:44:00	2:44:00		52.1	69.2	54.6	50.2
	2:45:00	2:45:00		52.3	74.5	56.1	50.7
	2:46:00	2:46:00		53.2	70.2	55.8	51.7
	2:47:00	2:47:00		53.8	75.7	58.8	51.2
	2:48:00	2:48:00		55.8	70.3	57	54.5
	2:49:00	2:49:00		56.4	70.8	57.8	54.9
	2:50:00	2:50:00		54.4	72.6	56.5	52.2
	2:51:00	2:51:00		56.9	73.6	62.1	54.6
	2:52:00	2:52:00		54.4	73.6	58.9	51.7
	2:53:00	2:53:00		53.7	74.2	59	51.5
	2:54:00	2:54:00		57.2	74.6	64.4	51.6
	2:55:00	2:55:00		57.5	75.1	65.2	53.4
	2:56:00	2:56:00		56.4	71.8	60	54
	2:57:00	2:57:00		56.2	76.4	58.8	54.8
	2:58:00	2:58:00		53.6	70.5	56.8	51.5
	2:59:00	2:59:00		53.2	69.9	55.2	51.7
	3:00:00	3:00:00		60.2	84.4	67.7	51.9
	3:01:00	3:01:00		52.8	73	56.5	51.5
	3:02:00	3:02:00		53.5	73.2	56.5	51.8
	3:03:00	3:03:00		55.2	71.9	58.7	52.3
	3:04:00	3:04:00		55.3	71.8	57.4	52.3
	3:05:00	3:05:00		58.6	86.6	65	55.9
	3:06:00	3:06:00		54.4	74	57.8	53
	3:07:00	3:07:00		53.1	80.4	58.5	51.3
	3:08:00	3:08:00		53.2	70.5	55.1	51.6
	3:09:00	3:09:00		53.3	68	54.6	52.2
	3:10:00	3:10:00		54.5	71.9	57.7	52.5
	3:11:00	3:11:00		54	68.7	54.9	52.6
	3:12:00	3:12:00		53.4	72.4	54.4	52.2
	3:13:00	3:13:00		53.6	71.4	57.1	51
	3:14:00	3:14:00		54.1	77.6	57.9	52.3
	3:15:00	3:15:00		55.2	74.5	60.3	52.4
	3:16:00	3:16:00		54.9	70.6	57.3	53.2
	3:17:00	3:17:00		55.9	70.9	58.3	53.9

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	3:18:00	3:18:00		55.6	71.9	57	54
	3:19:00	3:19:00		55.6	71.4	57.1	53.8
	3:20:00	3:20:00		57.7	77.2	61.2	52.9
	3:21:00	3:21:00		53.3	70.3	56.9	51.3
	3:22:00	3:22:00		53.7	70.3	56.2	51.9
	3:23:00	3:23:00		52.8	69.4	54.5	51.3
	3:24:00	3:24:00		53.5	68.4	54.9	52.3
	3:25:00	3:25:00		53.5	77.7	58.8	51.1
	3:26:00	3:26:00		53.3	73.3	58.9	51.1
	3:27:00	3:27:00		54.4	73.3	59.7	52.1
	3:28:00	3:28:00		54.5	76.6	60.3	52.9
	3:29:00	3:29:00		53.1	70.1	55	51.7
	3:30:00	3:30:00		53.9	70.8	55.8	52.3
	3:31:00	3:31:00		54.6	75.2	57	52.1
	3:32:00	3:32:00		54.4	83.8	60.2	52.1
	3:33:00	3:33:00		53.9	72.3	56.2	52.7
	3:34:00	3:34:00		52.9	70	54.3	51.3
	3:35:00	3:35:00		53	69.5	54.5	51.4
	3:36:00	3:36:00		53.5	67.4	54.4	51.7
	3:37:00	3:37:00		53.6	69.2	55.7	51.4
	3:38:00	3:38:00		56.6	75.2	59.6	54.5
	3:39:00	3:39:00		56.9	82	61.3	53.8
	3:40:00	3:40:00		56.3	79.1	61.6	51.7
	3:41:00	3:41:00		53.6	70.7	55.3	51.7
	3:42:00	3:42:00		54	68.6	56.3	52.7
	3:43:00	3:43:00		55.4	71.8	59.4	51.8
	3:44:00	3:44:00		53.9	72.9	57.7	52.3
	3:45:00	3:45:00		54.1	70.7	55.4	52.7
	3:46:00	3:46:00		54.1	71.4	58	51.3
	3:47:00	3:47:00		52.6	67	53.8	50.9
	3:48:00	3:48:00		53	73.1	55.4	51.5
	3:49:00	3:49:00		54.4	78.2	59.6	52.3
	3:50:00	3:50:00		54.5	75.7	57	51.9
	3:51:00	3:51:00		54.8	83	60.9	53
	3:52:00	3:52:00		55.2	74.1	60.5	52.6
	3:53:00	3:53:00		54.1	73.4	55.7	52.7
	3:54:00	3:54:00		54	72.2	55.8	52
	3:55:00	3:55:00		52.9	72.5	55.2	51.4
	3:56:00	3:56:00		53.9	68.7	55.2	52.6
	3:57:00	3:57:00		54	74.8	57	52.2
	3:58:00	3:58:00		54.2	69.9	57.7	51.5
	3:59:00	3:59:00		53.8	73.9	57	52
	4:00:00	4:00:00		54.3	69.8	57.5	52.7
	4:01:00	4:01:00		53.9	75.1	58.2	51.9
	4:02:00	4:02:00		56.2	72.5	58.7	54.1
	4:03:00	4:03:00		55.9	71.6	57.4	53.1
	4:04:00	4:04:00		53.8	78.8	59.4	52
	4:05:00	4:05:00		53.9	74.5	56.3	52.3
	4:06:00	4:06:00		54.1	72.9	56.7	52.1
	4:07:00	4:07:00		55.4	73.6	59.2	52.7
	4:08:00	4:08:00		56.1	71.1	57.4	54.5
	4:09:00	4:09:00		55.5	70.2	57.6	53.1
	4:10:00	4:10:00		54.7	71.3	56.4	52.2
	4:11:00	4:11:00		54.6	73.9	57.8	52.6
	4:12:00	4:12:00		57.3	79.1	61.6	52.5
	4:13:00	4:13:00		57.1	77.7	59.6	53.1
	4:14:00	4:14:00		58.1	74.1	60.6	56.2
	4:15:00	4:15:00		55.5	72.8	58.7	51.5
	4:16:00	4:16:00		54.3	70.3	56.1	52.8
	4:17:00	4:17:00		55.1	69.6	56.9	53.3
	4:18:00	4:18:00		55.5	74	59.7	53
	4:19:00	4:19:00		58.3	79.8	65.1	52.4
	4:20:00	4:20:00		57.3	73.7	60.5	54.5
	4:21:00	4:21:00		55.8	75	61.1	52.7
	4:22:00	4:22:00		54.3	71.3	56.9	51.8
	4:23:00	4:23:00		56.3	76.3	59.4	52.8

## Ambient Noise Data

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	4:24:00	4:24:00		53.6	78.6	58.7	52.1
	4:25:00	4:25:00		53.9	71.5	54.9	52.9
	4:26:00	4:26:00		54.2	70.7	56.9	52.5
	4:27:00	4:27:00		54.7	70	56.2	53
	4:28:00	4:28:00		54.1	80.8	62.2	51.3
	4:29:00	4:29:00		53.5	69.4	55.1	51.6
	4:30:00	4:30:00		53.8	70.6	55.6	51.5
	4:31:00	4:31:00		54	73.6	58.2	52.2
	4:32:00	4:32:00		53.8	73.6	57.9	51.9
	4:33:00	4:33:00		57.6	78.9	63.7	52.4
	4:34:00	4:34:00		54.8	81.2	60.4	52.8
	4:35:00	4:35:00		54.4	74.3	59.8	52
	4:36:00	4:36:00		53.7	75.5	56.6	51.7
	4:37:00	4:37:00		52.9	67.8	54.6	51.3
	4:38:00	4:38:00		53.3	68	54.5	52.2
	4:39:00	4:39:00		53.1	69.4	55.9	51.3
	4:40:00	4:40:00		58.8	80.1	66.9	51.7
	4:41:00	4:41:00		52.9	74.6	55.2	51.4
	4:42:00	4:42:00		53.9	69.1	55.7	52.6
	4:43:00	4:43:00		54.1	73	56.2	52.4
	4:44:00	4:44:00		53.9	69.8	55.6	52.8
	4:45:00	4:45:00		55.7	72.1	59	53.7
	4:46:00	4:46:00		53.4	70	54.6	51.9
	4:47:00	4:47:00		53.8	71.1	55.6	51.7
	4:48:00	4:48:00		54.7	70.6	57.2	52.5
	4:49:00	4:49:00		54.4	69.6	55.5	53.1
	4:50:00	4:50:00		54.4	69.8	56.8	52.8
	4:51:00	4:51:00		56.6	86.9	65.1	53.1
	4:52:00	4:52:00		56.7	79.2	62.4	52.5
	4:53:00	4:53:00		53.9	70.5	56.3	52.3
	4:54:00	4:54:00		55.7	74.4	59.5	53
	4:55:00	4:55:00		54.7	71.7	56.6	52.1
	4:56:00	4:56:00		53.7	68.1	55.1	52.4
	4:57:00	4:57:00		54.1	72.9	55.9	52.5
	4:58:00	4:58:00		55	70	56.7	53.5
	4:59:00	4:59:00		55.2	71.2	57.1	51.8
	5:00:00	5:00:00		55.6	82.4	62.1	52.5
	5:01:00	5:01:00		54.1	70	56	53
	5:02:00	5:02:00		53.6	67.4	56	51.5
	5:03:00	5:03:00		54	68.9	56.1	52.3
	5:04:00	5:04:00		53.1	69.4	55.2	51.5
	5:05:00	5:05:00		54.1	73.2	56.7	51.6
	5:06:00	5:06:00		55	76.3	57.2	53.3
	5:07:00	5:07:00		54.6	71.4	56	53.6
	5:08:00	5:08:00		59.9	80.9	64.3	51.8
	5:09:00	5:09:00		53.8	68.9	55.4	52.1
	5:10:00	5:10:00		55.7	71.1	57.6	54.2
	5:11:00	5:11:00		54.9	70.3	56.3	52.7
	5:12:00	5:12:00		56.3	72	59.6	54.6
	5:13:00	5:13:00		55.9	70.4	57.7	53.2
	5:14:00	5:14:00		53.5	69.6	55.3	52.6
	5:15:00	5:15:00		57.8	76.2	62.1	52.7
	5:16:00	5:16:00		55.3	72.4	59.2	53.4
	5:17:00	5:17:00		54.6	70.4	56.9	52.8
	5:18:00	5:18:00		53.3	72.6	58.6	50.5
	5:19:00	5:19:00		59.8	80.7	66.4	54.1
	5:20:00	5:20:00		57.1	74.4	61.7	54
	5:21:00	5:21:00		54.2	75.4	57.1	52.6
	5:22:00	5:22:00		55.2	75.2	60.8	52.3
	5:23:00	5:23:00		58.3	79.1	65.2	53.7
	5:24:00	5:24:00		54.3	69.8	56.4	52.9
	5:25:00	5:25:00		54.2	70	56.9	52.5
	5:26:00	5:26:00		54.8	72	56.5	53.6
	5:27:00	5:27:00		56.6	71.3	58	54.8
	5:28:00	5:28:00		57	72.3	59.4	53.6
	5:29:00	5:29:00		56.5	78.9	59.5	54.1

**Ambient Noise Data**

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	5:30:00	5:30:00		56.4	74.1	59.7	54
	5:31:00	5:31:00		55.7	75.8	59.7	53.7
	5:32:00	5:32:00		55.9	71.9	57.7	54.4
	5:33:00	5:33:00		56.7	74.6	61.9	54.5
	5:34:00	5:34:00		55.5	74	58.1	54.1
	5:35:00	5:35:00		56.1	70.1	57.5	53.8
	5:36:00	5:36:00		55.3	74.4	57.4	53.6
	5:37:00	5:37:00		53.9	76.1	58.2	51.9
	5:38:00	5:38:00		55.5	77.7	58	53.8
	5:39:00	5:39:00		57.1	74.2	60.9	54.1
	5:40:00	5:40:00		59.4	87.2	68.1	52.9
	5:41:00	5:41:00		55.4	74.5	59.1	52
	5:42:00	5:42:00		54.5	69.5	56.6	52.9
	5:43:00	5:43:00		55.3	71.1	57.4	53.1
	5:44:00	5:44:00		56.1	71	59	54.1
	5:45:00	5:45:00		55.5	72.7	59.2	51.7
	5:46:00	5:46:00		54.8	71.7	56.6	53.3
	5:47:00	5:47:00		54.6	75	57.6	52.3
	5:48:00	5:48:00		53.9	73.3	57.8	51.9
	5:49:00	5:49:00		57.1	80.7	67	52.7
	5:50:00	5:50:00		71.7	100	84.8	53.8
	5:51:00	5:51:00		53.3	70.3	55.5	51.7
	5:52:00	5:52:00		54.4	69.1	56.2	52.1
	5:53:00	5:53:00		55.7	73.5	59.6	52.3
	5:54:00	5:54:00		56.5	75.9	62.8	52.1
	5:55:00	5:55:00		63.2	88.5	71.5	53.7
	5:56:00	5:56:00		53.5	70.8	55.8	51.6
	5:57:00	5:57:00		54.9	73.2	56.8	53
	5:58:00	5:58:00		56.1	74.7	58.2	53.6
	5:59:00	5:59:00		54.9	72.5	58.2	52.8
	6:00:00	6:00:00		55	71.1	57.5	53.4
	6:01:00	6:01:00		55.7	70.9	57.6	53.6
	6:02:00	6:02:00		57.2	73.3	61.7	54.6
	6:03:00	6:03:00		56	70.1	57.9	54.3
	6:04:00	6:04:00		56.9	73.2	58.6	55.1
	6:05:00	6:05:00		55.3	74.7	58.4	53.2
	6:06:00	6:06:00		56.8	80.2	61.2	54.6
	6:07:00	6:07:00		57.5	75.1	62.3	54.7
	6:08:00	6:08:00		56.6	76	59.7	54.6
	6:09:00	6:09:00		56	72.2	57.6	53.9
	6:10:00	6:10:00		56.2	72.1	58.3	53.4
	6:11:00	6:11:00		55.4	75.1	59	53.6
	6:12:00	6:12:00		54.9	71.6	57.3	52.7
	6:13:00	6:13:00		55.4	70.2	57	53.8
	6:14:00	6:14:00		55.4	73.6	59.6	53.5
	6:15:00	6:15:00		55.4	71.9	58.2	52.9
	6:16:00	6:16:00		55.5	70.9	57.7	53
	6:17:00	6:17:00		55.5	74.7	60.3	53.3
	6:18:00	6:18:00		53.8	68.6	55.1	52.5
	6:19:00	6:19:00		54.3	70.2	56.6	52.2
	6:20:00	6:20:00		53.7	69.5	56.7	51.7
	6:21:00	6:21:00		54.7	70.9	56.2	53.5
	6:22:00	6:22:00		55.4	71.5	57	53.7
	6:23:00	6:23:00		54.2	69.6	56.5	52.6
	6:24:00	6:24:00		54.3	72	55.9	52.6
	6:25:00	6:25:00		53.6	70.8	56.8	51.3
	6:26:00	6:26:00		54.9	70.2	56.8	53.8
	6:27:00	6:27:00		54.3	70.4	56.3	52.3
	6:28:00	6:28:00		54.8	70	56.9	53
	6:29:00	6:29:00		54.2	69.5	55.9	52.2
	6:30:00	6:30:00		55.3	70.2	57.6	53.6
	6:31:00	6:31:00		55.4	71.5	56.5	54.3
	6:32:00	6:32:00		56.2	78	58.6	54.5
	6:33:00	6:33:00		56.3	73	58.5	54.6
	6:34:00	6:34:00		54.7	70.9	57.2	53.4
	6:35:00	6:35:00		54	70.8	55.9	52.3

## Ambient Noise Data

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	6:36:00	6:36:00		55.7	73.1	59.1	53.2
	6:37:00	6:37:00		55.3	70.6	58.3	53.6
	6:38:00	6:38:00		54	69.8	56.4	52.3
	6:39:00	6:39:00		54.5	69.5	56.2	53.3
	6:40:00	6:40:00		53.7	68.7	55.2	52.5
	6:41:00	6:41:00		55.1	71	56.5	52.3
	6:42:00	6:42:00		54.4	68.8	56.3	52.8
	6:43:00	6:43:00		54.3	68.9	56	52.6
	6:44:00	6:44:00		53.9	69	55.8	51.2
	6:45:00	6:45:00		59.9	81.9	68.4	53.5
	6:46:00	6:46:00		53.9	68.5	54.9	52.9
	6:47:00	6:47:00		54.8	71.9	57.4	53.3
	6:48:00	6:48:00		54.3	69.3	56.7	51.7
	6:49:00	6:49:00		54.2	68.9	55.7	53.3
	6:50:00	6:50:00		55.1	69.6	57.1	53.4
	6:51:00	6:51:00		54.8	73.9	56.4	53.5
	6:52:00	6:52:00		53.7	69	55	52.2
	6:53:00	6:53:00		54.3	71.9	56.9	52.3
	6:54:00	6:54:00		56.7	74	60.5	54
	6:55:00	6:55:00		56	76.7	62.2	53.9
	6:56:00	6:56:00		54.3	71	56.5	52.6
	6:57:00	6:57:00		54.3	71.2	57	51.4
	6:58:00	6:58:00		54.5	71.1	57.4	52.6
	6:59:00	6:59:00		55.8	72	57.4	54
	7:00:00	7:00:00		55.3	78	60.2	50.7
	7:01:00	7:01:00		55.5	70.5	58.6	51.9
	7:02:00	7:02:00		56.1	70.9	58.2	53.3
	7:03:00	7:03:00		54	70.1	56	52.1
	7:04:00	7:04:00		55	72.2	59.9	52.4
	7:05:00	7:05:00		54.7	70.8	56.6	52.7
	7:06:00	7:06:00		54.7	71	58.5	52.8
	7:07:00	7:07:00		55.5	77.4	59.9	53
	7:08:00	7:08:00		55.4	69.8	57.3	51.9
	7:09:00	7:09:00		54.5	69.3	56.8	52.1
	7:10:00	7:10:00		56.2	73.7	60	53.1
	7:11:00	7:11:00		54.2	70.8	56.1	52.4
	7:12:00	7:12:00		52.8	66.3	54.1	51.8
	7:13:00	7:13:00		55.1	70.4	56.9	53.2
	7:14:00	7:14:00		54.5	72.5	58.2	52.5
	7:15:00	7:15:00		53	67.5	54.5	51.2
	7:16:00	7:16:00		54.2	69.8	57.3	52.1
	7:17:00	7:17:00		53.3	68.1	54.7	52.1
	7:18:00	7:18:00		53.7	69.9	56.5	52.4
	7:19:00	7:19:00		54.1	69	55.8	52.7
	7:20:00	7:20:00		53.5	68.1	55.2	51.8
	7:21:00	7:21:00		54.8	72.3	59	51.9
	7:22:00	7:22:00		53.9	69.5	55.7	52.3
	7:23:00	7:23:00		53.5	69.1	55.8	51.7
	7:24:00	7:24:00		53.6	70	54.8	51.9
	7:25:00	7:25:00		54.4	69.8	56.9	51.6
	7:26:00	7:26:00		53.6	68.8	55.9	52.4
	7:27:00	7:27:00		52.9	67.5	53.9	51.8
	7:28:00	7:28:00		53.5	70.8	57	50.8
	7:29:00	7:29:00		54.6	72.6	56.8	52.7
	7:30:00	7:30:00		54.9	70.3	56.8	53.8
	7:31:00	7:31:00		55.6	70.6	56.8	53.6
	7:32:00	7:32:00		54.5	69.1	56.2	53.4
	7:33:00	7:33:00		53.2	68	55	51.7
	7:34:00	7:34:00		52.4	67.9	54.3	50.1
	7:35:00	7:35:00		53.7	68.3	55.6	52
	7:36:00	7:36:00		53.7	68	55	51.8
	7:37:00	7:37:00		53.1	68.9	55.1	50.9
	7:38:00	7:38:00		53.7	70.7	55.5	52.4
	7:39:00	7:39:00		54.6	70.2	55.9	53.2
	7:40:00	7:40:00		52.7	68	54.5	51
	7:41:00	7:41:00		53.2	67.5	55.4	52.1

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	7:42:00	7:42:00		53.9	71.3	56.7	51.6
	7:43:00	7:43:00		53.8	68.3	55.4	52.4
	7:44:00	7:44:00		52.6	68.4	55.1	51.1
	7:45:00	7:45:00		53.8	71.2	56.9	52.3
	7:46:00	7:46:00		54.5	71.6	57.3	52.7
	7:47:00	7:47:00		56	71.9	57.8	53.9
	7:48:00	7:48:00		56	74.7	60.1	53.7
	7:49:00	7:49:00		55.3	70.8	57.2	53.3
	7:50:00	7:50:00		53.4	68.7	54.4	52.2
	7:51:00	7:51:00		52.9	66.7	54	51.1
	7:52:00	7:52:00		52.9	69.6	55.5	50.6
	7:53:00	7:53:00		53.6	67.9	55.9	51.7
	7:54:00	7:54:00		53.4	68.6	54.6	51.7
	7:55:00	7:55:00		52.8	69.2	54.9	51.3
	7:56:00	7:56:00		53.6	68.3	55.2	52.4
	7:57:00	7:57:00		52.6	68.4	55.3	50.2
	7:58:00	7:58:00		55.2	80.7	66.9	51.1
	7:59:00	7:59:00		54	70.2	56	51.9
	8:00:00	8:00:00		54.2	70.1	56	52.2
	8:01:00	8:01:00		54	69.5	56.6	52.8
	8:02:00	8:02:00		53.3	70.5	58.7	51.3
	8:03:00	8:03:00		52.5	68.7	53.6	50.8
	8:04:00	8:04:00		52.1	69.8	53.1	50.9
	8:05:00	8:05:00		52.1	66.8	53.1	51.3
	8:06:00	8:06:00		53.4	68.1	55	51.9
	8:07:00	8:07:00		52.7	68.6	54.6	51.7
	8:08:00	8:08:00		53.8	69.2	55.4	51.4
	8:09:00	8:09:00		54.5	69.8	56.3	53.3
	8:10:00	8:10:00		53.7	68.8	55.5	52.4
	8:11:00	8:11:00		53	67.4	54.9	52.2
	8:12:00	8:12:00		53	67.3	53.8	52.3
	8:13:00	8:13:00		53.2	67.8	54.1	52
	8:14:00	8:14:00		53.7	67.4	54.9	52.3
	8:15:00	8:15:00		53.4	67	54.5	52.7
	8:16:00	8:16:00		53.5	67.7	54.8	52.7
	8:17:00	8:17:00		53.4	67.6	54.6	52.4
	8:18:00	8:18:00		53.4	67.2	54.6	52.4
	8:19:00	8:19:00		53.4	67.6	54.6	52.3
	8:20:00	8:20:00		52.6	67.2	53.6	51.3
	8:21:00	8:21:00		53.3	67.6	54.2	51.8
	8:22:00	8:22:00		53	67	54.1	51.7
	8:23:00	8:23:00		54	69	58.1	52.7
	8:24:00	8:24:00		53.9	67.8	55.8	52.6
	8:25:00	8:25:00		53.4	67.2	54.6	52.1
	8:26:00	8:26:00		53.4	77	58.5	52
	8:27:00	8:27:00		53.6	67.8	55.5	52
	8:28:00	8:28:00		54.5	72.2	57.1	52.9
	8:29:00	8:29:00		53.9	68.1	55.3	52.9
	8:30:00	8:30:00		53.8	67.3	55.4	52.6
	8:31:00	8:31:00		54.1	68.1	55.8	53.1
	8:32:00	8:32:00		54.1	68.9	55.5	53.1
	8:33:00	8:33:00		53.9	71.9	55.3	52.8
	8:34:00	8:34:00		54.5	68.6	55.6	53.7
	8:35:00	8:35:00		54.3	68.9	55.8	53.1
	8:36:00	8:36:00		54.2	74	56.5	52.8
	8:37:00	8:37:00		54.5	77.1	57.3	53.4
	8:38:00	8:38:00		54.8	92.9	62.7	53.1
	8:39:00	8:39:00		54.1	67.9	55	53.1
	8:40:00	8:40:00		55.6	70.9	59	53.1
	8:41:00	8:41:00		58.9	77.8	65.2	54.1
	8:42:00	8:42:00		54.4	69.5	56.4	52.5
	8:43:00	8:43:00		54.5	68.5	55.9	53.4
	8:44:00	8:44:00		55	78.8	58.4	53.4
	8:45:00	8:45:00		54.1	70.8	55.2	52.6
	8:46:00	8:46:00		54.3	68.6	56.5	52.6
	8:47:00	8:47:00		54.3	68.6	55.6	52.2

## Ambient Noise Data

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	8:48:00	8:48:00		54.3	69.5	56.4	52.7
	8:49:00	8:49:00		53	67.6	54	52.1
	8:50:00	8:50:00		53.4	68	54.3	52.7
	8:51:00	8:51:00		53.9	68.4	55.2	52.6
	8:52:00	8:52:00		53.9	68.1	55.1	53
	8:53:00	8:53:00		53.4	67.6	54.4	52.5
	8:54:00	8:54:00		53.7	68.1	55.1	52.6
	8:55:00	8:55:00		54	67.6	55.3	52.6
	8:56:00	8:56:00		53.3	68.1	55	52
	8:57:00	8:57:00		54.1	68.6	55.8	53
	8:58:00	8:58:00		53.4	68.2	54.3	52.3
	8:59:00	8:59:00		53.9	68.4	55.3	52.6
	9:00:00	9:00:00		54.1	67.9	55.1	52.8
	9:01:00	9:01:00		54	68.3	54.7	53.2
	9:02:00	9:02:00		53.9	68.8	55.2	53
	9:03:00	9:03:00		53.6	67.8	54.7	52.7
	9:04:00	9:04:00		53.5	67.7	55	52.3
	9:05:00	9:05:00		54	69	56.5	52.7
	9:06:00	9:06:00		53.9	68.3	55.2	52.7
	9:07:00	9:07:00		54.1	68	55.2	53.3
	9:08:00	9:08:00		53.7	67.5	54.5	53
	9:09:00	9:09:00		54.1	68.6	55.8	52.7
	9:10:00	9:10:00		53.9	68	54.8	52.4
	9:11:00	9:11:00		54.2	68.5	55.3	52.7
	9:12:00	9:12:00		54.1	67.7	55.2	53
	9:13:00	9:13:00		54	69.9	56.8	53.1
	9:14:00	9:14:00		54.5	70.3	57.8	52.3
	9:15:00	9:15:00		54.3	69.8	56	52.9
	9:16:00	9:16:00		53.7	67.6	54.9	52.3
	9:17:00	9:17:00		53.8	68.1	54.5	53
	9:18:00	9:18:00		54	67.9	55	52.8
	9:19:00	9:19:00		53.6	70.3	56.1	52.1
	9:20:00	9:20:00		54.2	68.8	56.2	52.9
	9:21:00	9:21:00		54.2	69.9	56	53
	9:22:00	9:22:00		53.7	68	54.7	52.5
	9:23:00	9:23:00		53.9	68.4	55.2	51.9
	9:24:00	9:24:00		53.8	68.1	55	52.6
	9:25:00	9:25:00		53.5	67.6	54.9	52.4
	9:26:00	9:26:00		53.9	67.8	55.1	51.8
	9:27:00	9:27:00		53.7	67.9	55.3	52.9
	9:28:00	9:28:00		53.9	68.2	55	53
	9:29:00	9:29:00		54.3	68.9	55.6	53.4
	9:30:00	9:30:00		53.7	69.3	55.3	52.3
	9:31:00	9:31:00		53.9	68.5	55.2	52.9
	9:32:00	9:32:00		53.5	67.4	54.2	52.7
	9:33:00	9:33:00		53.8	68.3	55.1	52.4
	9:34:00	9:34:00		53.9	68.7	55.7	52.4
	9:35:00	9:35:00		54.2	68.4	54.9	53.1
	9:36:00	9:36:00		53.8	68.2	54.9	52.7
	9:37:00	9:37:00		53.7	67.3	54.7	52.5
	9:38:00	9:38:00		53.5	67.8	54.7	52.2
	9:39:00	9:39:00		54.4	68.4	56	53.3
	9:40:00	9:40:00		53.7	67.1	55.3	52.9
	9:41:00	9:41:00		53.4	66.5	54.1	52.6
	9:42:00	9:42:00		53.8	69	56.1	52.3
	9:43:00	9:43:00		53.3	69.3	54.5	52.4
	9:44:00	9:44:00		53	67	53.7	52.2
	9:45:00	9:45:00		53.5	68.5	55.3	52.5
	9:46:00	9:46:00		52.8	66.6	54	51.7
	9:47:00	9:47:00		53.4	67.2	54.3	52.6
	9:48:00	9:48:00		53.5	68.1	55.1	52.4
	9:49:00	9:49:00		53.3	68.8	54.1	52.2
	9:50:00	9:50:00		53	66.7	53.8	52.3
	9:51:00	9:51:00		53.3	66.9	54	52.4
	9:52:00	9:52:00		52.9	66.4	53.5	51.5
	9:53:00	9:53:00		53.1	67.1	54.3	51.5

## Ambient Noise Data

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	9:54:00	9:54:00		53.3	67.6	54.5	52.5
	9:55:00	9:55:00		53.3	67.2	54.1	52.5
	9:56:00	9:56:00		53.4	67.4	53.9	52.7
	9:57:00	9:57:00		53.4	69.9	54.4	52
	9:58:00	9:58:00		53.7	70.1	56.1	52.7
	9:59:00	9:59:00		53.5	67.2	54.7	52.3
	10:00:00	10:00:00		53.2	67.5	54.5	51.5
	10:01:00	10:01:00		53.3	68.3	55.1	51.8
	10:02:00	10:02:00		52.4	66	53.8	51.2
	10:03:00	10:03:00		52.9	66.7	53.9	52
	10:04:00	10:04:00		53.2	66.7	54	52.1
	10:05:00	10:05:00		53.1	67.3	54.1	52
	10:06:00	10:06:00		52.6	65.9	53.9	51.2
	10:07:00	10:07:00		52.8	66	53.7	51.8
	10:08:00	10:08:00		54.1	69.4	56.7	52.6
	10:09:00	10:09:00		53	66.7	54	51.6
	10:10:00	10:10:00		53	66.7	54	52.1
	10:11:00	10:11:00		53.5	67.2	54.1	52.8
	10:12:00	10:12:00		53.1	68.1	53.9	52
	10:13:00	10:13:00		53.4	67.9	54.9	52.4
	10:14:00	10:14:00		53.7	67.6	54.5	52.7
	10:15:00	10:15:00		53.4	68.1	54.9	52.3
	10:16:00	10:16:00		53.8	67.7	55	52.7
	10:17:00	10:17:00		53.7	69.1	54.9	52.9
	10:18:00	10:18:00		53.8	68.4	54.8	52.5
	10:19:00	10:19:00		53.8	68.1	55.4	52.4
	10:20:00	10:20:00		53.3	67.2	54.2	52
	10:21:00	10:21:00		53.5	67	54.2	52.7
	10:22:00	10:22:00		53.5	67.4	54.5	52.9
	10:23:00	10:23:00		53.4	67.1	54.1	52.8
	10:24:00	10:24:00		53.6	67.7	54.5	52.7
	10:25:00	10:25:00		53.6	68.5	54.6	52.4
	10:26:00	10:26:00		53.4	67.3	54.3	52.7
	10:27:00	10:27:00		53.2	67.2	54.1	51.9
	10:28:00	10:28:00		53.4	67.1	54.4	52.4
	10:29:00	10:29:00		52.7	66.3	53.6	51.7
	10:30:00	10:30:00		53.6	67.2	54.5	52.6
	10:31:00	10:31:00		53.6	70.4	56	52.7
	10:32:00	10:32:00		54.3	68	55.2	53.4
	10:33:00	10:33:00		53.4	67.5	54.3	52.4
	10:34:00	10:34:00		53.7	67.8	54.4	53.1
	10:35:00	10:35:00		53.8	67.8	54.6	52.7
	10:36:00	10:36:00		53.6	67.6	54.6	52.8
	10:37:00	10:37:00		53.9	67.3	54.7	52.9
	10:38:00	10:38:00		53.3	67	53.9	52.4
	10:39:00	10:39:00		53.2	67.8	53.8	52.4
	10:40:00	10:40:00		52.9	66.1	53.7	52
	10:41:00	10:41:00		52.9	66.6	54	52
	10:42:00	10:42:00		52.9	67	53.6	52.1
	10:43:00	10:43:00		53.5	67.7	54.3	52.7
	10:44:00	10:44:00		53.5	67.7	54.1	52.8
	10:45:00	10:45:00		53.3	67.5	53.9	52.3
	10:46:00	10:46:00		53.3	67	54	52.4
	10:47:00	10:47:00		53.3	67.4	54.1	52.6
	10:48:00	10:48:00		53	66.4	53.8	52.2
	10:49:00	10:49:00		53.2	67.3	54.4	52.3
	10:50:00	10:50:00		53.9	68.6	54.8	53.1
	10:51:00	10:51:00		53.4	66.6	54.3	52.7
	10:52:00	10:52:00		53.3	67.1	54.3	52.1
	10:53:00	10:53:00		53	67.3	53.7	52.4
	10:54:00	10:54:00		53.1	66.6	53.7	52.6
	10:55:00	10:55:00		52.5	66.7	53.5	51.7
	10:56:00	10:56:00		53.2	66.8	54.1	51.7
	10:57:00	10:57:00		53	66.3	53.8	52.3
	10:58:00	10:58:00		53.3	67.3	53.9	52.6
	10:59:00	10:59:00		53.2	67.4	54.1	52

## Ambient Noise Data

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	11:00:00	11:00:00		53	66.7	53.7	52
	11:01:00	11:01:00		53.3	67.2	54.2	52.3
	11:02:00	11:02:00		52.9	66	53.8	51.5
	11:03:00	11:03:00		52.9	66.8	53.6	51.9
	11:04:00	11:04:00		52.7	66.2	53.6	52
	11:05:00	11:05:00		52.9	66.9	54	51.7
	11:06:00	11:06:00		52.9	68.1	55.4	52
	11:07:00	11:07:00		53.4	68	55.1	52.2
	11:08:00	11:08:00		52.8	67.4	53.8	51.9
	11:09:00	11:09:00		52.8	66.4	53.3	52.2
	11:10:00	11:10:00		52.6	70.2	53.6	51.9
	11:11:00	11:11:00		52.9	68.5	53.8	51.6
	11:12:00	11:12:00		52.8	67.4	53.8	51.5
	11:13:00	11:13:00		53.3	70	54.1	52.8
	11:14:00	11:14:00		52.9	66.5	53.3	52.3
	11:15:00	11:15:00		53	66.8	54.3	51.5
	11:16:00	11:16:00		52.9	67	54	51.9
	11:17:00	11:17:00		52.7	67	53.5	51.7
	11:18:00	11:18:00		52.6	66.5	53.4	51.6
	11:19:00	11:19:00		53	66.8	53.8	52.2
	11:20:00	11:20:00		52.9	67.3	54	51.7
	11:21:00	11:21:00		53	67.1	54.4	51.8
	11:22:00	11:22:00		52.6	66.6	53.7	51.5
	11:23:00	11:23:00		53.2	68	54.3	51.4
	11:24:00	11:24:00		52.4	66.5	53.9	51.8
	11:25:00	11:25:00		52.9	66.8	54.3	51.7
	11:26:00	11:26:00		52.9	67.8	54.1	51.9
	11:27:00	11:27:00		52.4	66.5	52.9	51.7
	11:28:00	11:28:00		53	67.9	54.8	51.9
	11:29:00	11:29:00		52.7	67.3	53.9	51.8
	11:30:00	11:30:00		53.2	70	54.6	52
	11:31:00	11:31:00		53.1	66.9	54.2	52.3
	11:32:00	11:32:00		53.3	67.5	54.2	52.6
	11:33:00	11:33:00		53.5	68.3	54.2	52.6
	11:34:00	11:34:00		52.8	68.6	53.3	52.1
	11:35:00	11:35:00		52.9	66.7	53.5	51.9
	11:36:00	11:36:00		53.3	67.9	54.1	52.2
	11:37:00	11:37:00		53.4	68	54.7	52.7
	11:38:00	11:38:00		53.6	68	54.4	52.9
	11:39:00	11:39:00		53.3	67.7	54.2	52.6
	11:40:00	11:40:00		52.9	66.9	53.4	52.4
	11:41:00	11:41:00		53.1	66.9	53.8	52.4
	11:42:00	11:42:00		53	67	54.3	52.3
	11:43:00	11:43:00		53	66.8	53.8	52.5
	11:44:00	11:44:00		53	66.8	53.6	52.5
	11:45:00	11:45:00		53.2	68.5	55.4	52.4
	11:46:00	11:46:00		54.1	71.2	55.3	53.5
	11:47:00	11:47:00		53.3	70.9	55.6	52.2
	11:48:00	11:48:00		52.9	66.8	53.5	52.3
	11:49:00	11:49:00		53	67.1	53.6	52.2
	11:50:00	11:50:00		52.7	66.2	53.1	52
	11:51:00	11:51:00		52.5	66.3	53.3	51.9
	11:52:00	11:52:00		52.5	66.7	53.2	51.9
	11:53:00	11:53:00		52.4	65.9	53	51.9
	11:54:00	11:54:00		53.1	67.1	53.9	52.4
	11:55:00	11:55:00		53.1	69	54.4	52.3
	11:56:00	11:56:00		52.7	66	53.8	52
	11:57:00	11:57:00		52.7	66	53.9	51.8
	11:58:00	11:58:00		52.7	66.1	53.6	52.1
	11:59:00	11:59:00		52.9	66.3	53.5	52.3
	12:00:00	12:00:00		52.9	67.2	53.6	52.2
	12:01:00	12:01:00		53	66.4	54.3	52
	12:02:00	12:02:00		53.1	67.2	54.5	51.9
	12:03:00	12:03:00		53.2	67.2	55.2	52.2
	12:04:00	12:04:00		52.8	67.3	54.7	51.9
	12:05:00	12:05:00		53	68.6	54.1	52

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	12:06:00	12:06:00		52.6	67.7	54.2	51.7
	12:07:00	12:07:00		52.7	65.8	53.5	51.9
	12:08:00	12:08:00		52.7	66.1	53.7	51.9
	12:09:00	12:09:00		53.2	68	54.4	52.4
	12:10:00	12:10:00		52.4	66.5	53	51.9
	12:11:00	12:11:00		52.6	66.7	53.6	51.9
	12:12:00	12:12:00		52.3	66.5	53.5	51.6
	12:13:00	12:13:00		52.8	66.3	53.6	52.1
	12:14:00	12:14:00		52.8	67.3	54.4	51.3
	12:15:00	12:15:00		52.3	66.4	53.4	51.3
	12:16:00	12:16:00		52	66.1	52.7	51.1
	12:17:00	12:17:00		52.2	70.7	54.4	51.3
	12:18:00	12:18:00		51.9	66.7	53.4	50.9
	12:19:00	12:19:00		52.1	70.4	53.8	50.7
	12:20:00	12:20:00		52.8	68.8	55	51.4
	12:21:00	12:21:00		51.5	65.1	52.3	50.6
	12:22:00	12:22:00		51.7	66.1	52.8	50.7
	12:23:00	12:23:00		51.6	66.2	52.9	50.6
	12:24:00	12:24:00		51.4	64.8	52.4	50.1
	12:25:00	12:25:00		51.9	67.1	52.9	50.8
	12:26:00	12:26:00		51.4	65.1	52.4	50.2
	12:27:00	12:27:00		51.4	65.2	52.2	51
	12:28:00	12:28:00		51.8	66.4	53.5	50.8
	12:29:00	12:29:00		51.9	65.5	52.4	51.4
	12:30:00	12:30:00		52.1	65.6	53.3	51.3
	12:31:00	12:31:00		51.9	65.7	52.9	51.1
	12:32:00	12:32:00		52.1	66.8	52.6	51.2
	12:33:00	12:33:00		51.8	66.5	52.6	50.8
	12:34:00	12:34:00		52	65.5	52.9	51
	12:35:00	12:35:00		51.8	65.9	52.6	51
	12:36:00	12:36:00		52.3	66	53.3	51.6
	12:37:00	12:37:00		51.7	65.9	52.9	51
	12:38:00	12:38:00		52	65.6	53	50.9
	12:39:00	12:39:00		51.5	65.3	52.2	50.6
	12:40:00	12:40:00		51.9	65.3	52.8	51.1
	12:41:00	12:41:00		51.7	65.4	52.4	51.1
	12:42:00	12:42:00		51.6	65.1	52.6	50.7
	12:43:00	12:43:00		51.5	65.8	52.4	50.7
	12:44:00	12:44:00		51.5	64.8	52.4	50.8
	12:45:00	12:45:00		51.8	65.4	52.8	50.4
	12:46:00	12:46:00		51.6	65.3	52.4	50.9
	12:47:00	12:47:00		51.8	65.2	52.5	51.3
	12:48:00	12:48:00		51.6	65.9	52.5	50.9
	12:49:00	12:49:00		51.6	65.9	53.4	50.8
	12:50:00	12:50:00		51.5	64.7	52.6	50.7
	12:51:00	12:51:00		51.3	64.1	52	50.5
	12:52:00	12:52:00		52	66.7	53.2	50.8
	12:53:00	12:53:00		51.5	65.3	52.1	51
	12:54:00	12:54:00		51.7	65.3	52.5	50.6
	12:55:00	12:55:00		51.6	65.3	52.9	50.4
	12:56:00	12:56:00		51.7	65.9	52.2	50.8
	12:57:00	12:57:00		52.1	69.6	55	50.2
	12:58:00	12:58:00		52.1	66.1	53.3	50.3
	12:59:00	12:59:00		51.8	66.1	53	50.4
	13:00:00	13:00:00		51.5	65.1	52.6	50.8
	13:01:00	13:01:00		51.5	65.3	52.4	50.6
	13:02:00	13:02:00		51.4	65.7	52	50.6
	13:03:00	13:03:00		50.9	63.9	51.8	49.7
	13:04:00	13:04:00		51.8	65.8	53.1	51.1
	13:05:00	13:05:00		51.8	65.1	52.4	51.2
	13:06:00	13:06:00		51.7	65.8	52.6	51
	13:07:00	13:07:00		51.8	65.7	52.9	51
	13:08:00	13:08:00		51.3	65.1	52.3	50.2
	13:09:00	13:09:00		51.5	66.1	52.8	50.5
	13:10:00	13:10:00		51.7	65.7	53.2	50.2
	13:11:00	13:11:00		51.8	65.5	52.7	51

## Ambient Noise Data

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	13:12:00	13:12:00		52.2	66.9	54.6	51.3
	13:13:00	13:13:00		51.9	65.3	52.6	51.3
	13:14:00	13:14:00		51.8	65.7	52.6	51
	13:15:00	13:15:00		51.6	65.3	52.5	50.8
	13:16:00	13:16:00		51.4	65.6	52.2	50.5
	13:17:00	13:17:00		51.3	64.8	52.1	50.6
	13:18:00	13:18:00		52.1	66.2	52.8	51
	13:19:00	13:19:00		51.6	65.7	52.5	50.6
	13:20:00	13:20:00		52	66.7	54.1	50.6
	13:21:00	13:21:00		51.6	66.6	53.1	50.4
	13:22:00	13:22:00		51.8	66.4	52.9	51
	13:23:00	13:23:00		51.2	64.6	52.1	50.5
	13:24:00	13:24:00		51.8	66.4	53.3	51.1
	13:25:00	13:25:00		51.7	66.1	53.3	50.8
	13:26:00	13:26:00		51.5	64.7	52.1	50.9
	13:27:00	13:27:00		51.6	65.2	52.2	50.4
	13:28:00	13:28:00		51.3	66.9	53.8	49.7
	13:29:00	13:29:00		51.5	65.1	52.7	50.3
	13:30:00	13:30:00		51.3	66.5	52	50.6
	13:31:00	13:31:00		51.5	66	52.2	50.2
	13:32:00	13:32:00		51.4	65.7	52.6	50.4
	13:33:00	13:33:00		51.5	67.8	53.9	50.6
	13:34:00	13:34:00		52.2	66.7	54.3	50.6
	13:35:00	13:35:00		50.7	64.4	51.3	49.8
	13:36:00	13:36:00		51.1	64.8	52.2	49.6
	13:37:00	13:37:00		51.2	64.5	52	50.2
	13:38:00	13:38:00		50.9	65.1	51.8	50
	13:39:00	13:39:00		51	64.8	52.3	49.6
	13:40:00	13:40:00		51.2	66.9	52.9	50.1
	13:41:00	13:41:00		51.3	64.7	52.1	50.7
	13:42:00	13:42:00		51.3	65.9	52.7	50.4
	13:43:00	13:43:00		51.5	64.9	52.5	50.6
	13:44:00	13:44:00		51.7	66.1	52.3	50.9
	13:45:00	13:45:00		51.7	65.2	52.8	50.8
	13:46:00	13:46:00		52.4	67.5	54.5	51.5
	13:47:00	13:47:00		52.2	66.8	54	51.6
	13:48:00	13:48:00		52.1	65.6	52.8	51.6
	13:49:00	13:49:00		51.9	65.6	52.6	51.1
	13:50:00	13:50:00		52.2	67.1	53.4	51.4
	13:51:00	13:51:00		51.4	65.1	52	50.7
	13:52:00	13:52:00		52.1	65.8	53.1	50.7
	13:53:00	13:53:00		52.5	66.3	52.9	52.1
	13:54:00	13:54:00		51.8	66.5	52.3	51.3
	13:55:00	13:55:00		52.2	66.5	52.9	51.5
	13:56:00	13:56:00		51.8	66.3	52.5	51.3
	13:57:00	13:57:00		52.3	66	53.1	51.7
	13:58:00	13:58:00		51.9	65.7	52.7	51.4
	13:59:00	13:59:00		51.7	65.2	52.5	51
	14:00:00	14:00:00		52.2	67.4	54.6	51.7
	14:01:00	14:01:00		52.9	67.3	54.6	52.1
	14:02:00	14:02:00		52.3	65.9	52.8	51.9
	14:03:00	14:03:00		52.5	66.1	53	51.9
	14:04:00	14:04:00		52.4	65.8	52.9	52
	14:05:00	14:05:00		52.1	66.2	52.6	51.6
	14:06:00	14:06:00		52	66.7	52.4	51.3
	14:07:00	14:07:00		51.6	65.4	52	51.1
	14:08:00	14:08:00		51.6	65.7	52.6	51.1
	14:09:00	14:09:00		51.5	67.8	53.9	50.4
	14:10:00	14:10:00		52.1	66.2	52.8	51.1
	14:11:00	14:11:00		51.7	65.5	52.4	51.1
	14:12:00	14:12:00		51.6	65.5	52.4	50.7
	14:13:00	14:13:00		52.2	65.6	52.8	51.7
	14:14:00	14:14:00		52.1	65.9	52.6	51.5
	14:15:00	14:15:00		51.7	65.1	52.5	51
	14:16:00	14:16:00		52.5	69.9	53.6	51.9
	14:17:00	14:17:00		52.1	70.8	53.3	51.2

**Ambient Noise Data**

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	14:18:00	14:18:00		51.7	66.3	52.7	51.1
	14:19:00	14:19:00		51.7	65.9	52.7	50.9
	14:20:00	14:20:00		51.4	67.6	51.8	51
	14:21:00	14:21:00		51.7	64.7	52.3	51.1
	14:22:00	14:22:00		52	65.4	52.9	51.5
	14:23:00	14:23:00		52	65.5	52.6	51.4
	14:24:00	14:24:00		51.9	66.1	53.2	50.8
	14:25:00	14:25:00		51.2	65.7	52.3	50.3
	14:26:00	14:26:00		51.2	64.4	51.6	50.7
	14:27:00	14:27:00		51.3	64.4	51.9	50.5
	14:28:00	14:28:00		51.1	66.4	51.8	50.3
	14:29:00	14:29:00		51.1	65.4	51.9	50.5
	14:30:00	14:30:00		51.5	65.3	51.9	50.9
	14:31:00	14:31:00		51.5	65.2	52.4	50.6
	14:32:00	14:32:00		51.6	65.5	52.7	51
	14:33:00	14:33:00		51.7	66.3	52.7	51.1
	14:34:00	14:34:00		51.5	65.5	52.5	50.9
	14:35:00	14:35:00		51.9	66.4	52.3	51.4
	14:36:00	14:36:00		51.5	66.1	52.1	50.8
	14:37:00	14:37:00		51.5	65.7	52	50.9
	14:38:00	14:38:00		51.7	65.7	52.4	50.7
	14:39:00	14:39:00		51.6	65.3	52.3	51.1
	14:40:00	14:40:00		51.4	65.2	52	51
	14:41:00	14:41:00		52.2	66.1	53.2	51.2
	14:42:00	14:42:00		51.8	65.1	52.3	50.9
	14:43:00	14:43:00		51.4	65.7	52.3	50.9
	14:44:00	14:44:00		53.4	67.5	55.1	51.2
	14:45:00	14:45:00		53.2	70	54.7	52.4
	14:46:00	14:46:00		53.1	69.2	55.1	52.4
	14:47:00	14:47:00		53.1	66.3	53.7	52.3
	14:48:00	14:48:00		52	66.2	52.4	51.5
	14:49:00	14:49:00		52.1	65.4	52.5	51.5
	14:50:00	14:50:00		52.3	66.2	52.7	52
	14:51:00	14:51:00		52	65.6	52.4	51.6
	14:52:00	14:52:00		51.9	65.1	52.3	51.3
	14:53:00	14:53:00		52.6	65.9	53.3	52.1
	14:54:00	14:54:00		52.4	67	53.1	51.5
	14:55:00	14:55:00		52.3	66.5	52.8	51.9
	14:56:00	14:56:00		52.8	66.1	53.3	52.2
	14:57:00	14:57:00		52.8	67.1	53.1	52.4
	14:58:00	14:58:00		53	67.6	53.4	52.4
	14:59:00	14:59:00		53.1	66.7	53.8	52.4
	15:00:00	15:00:00		52.6	67	53.1	52.1
	15:01:00	15:01:00		52.5	67	52.9	52.1
	15:02:00	15:02:00		52.4	65.6	52.9	51.9
	15:03:00	15:03:00		52.3	66.8	52.9	51.6
	15:04:00	15:04:00		52.5	66	52.8	52
	15:05:00	15:05:00		52.4	65.6	52.9	52
	15:06:00	15:06:00		52.5	66.7	52.9	52
	15:07:00	15:07:00		52.3	66.1	52.8	51.2
	15:08:00	15:08:00		52	65.6	52.4	51.5
	15:09:00	15:09:00		51.6	65.5	52.3	51.1
	15:10:00	15:10:00		52	66	52.4	51.5
	15:11:00	15:11:00		51.9	69.7	53	51.3
	15:12:00	15:12:00		51.7	69.2	52.3	51.2
	15:13:00	15:13:00		51.6	64.8	52.1	51.1
	15:14:00	15:14:00		51.7	64.7	52.4	51.1
	15:15:00	15:15:00		51.7	65.1	52.3	51.3
	15:16:00	15:16:00		51.2	64.5	51.7	50.7
	15:17:00	15:17:00		51.3	64.5	52	50.5
	15:18:00	15:18:00		51.4	65.5	52.4	50.6
	15:19:00	15:19:00		51.4	64.9	52.4	50.7
	15:20:00	15:20:00		51	64.2	52.1	50.4
	15:21:00	15:21:00		51.9	67.2	52.9	51
	15:22:00	15:22:00		52	66.9	53.4	51
	15:23:00	15:23:00		51	64.8	52	50.4

**Ambient Noise Data**

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	15:24:00	15:24:00		51.8	67.1	54	50.5
	15:25:00	15:25:00		51.9	65.5	53	51
	15:26:00	15:26:00		51.1	64.5	51.7	50.6
	15:27:00	15:27:00		51	64.8	51.8	50.5
	15:28:00	15:28:00		51.1	65	52.1	50.4
	15:29:00	15:29:00		51.6	65.4	52.2	50.9
	15:30:00	15:30:00		51.5	65.6	52.5	50.5
	15:31:00	15:31:00		50.9	64.2	51.4	50.4
	15:32:00	15:32:00		51.2	64.5	51.6	50.5
	15:33:00	15:33:00		51.3	64.6	52.3	50.1
	15:34:00	15:34:00		51.4	65.5	52.1	50.7
	15:35:00	15:35:00		50.9	64	51.6	50.3
	15:36:00	15:36:00		51.2	64.7	52.2	50.7
	15:37:00	15:37:00		50.9	64.1	51.6	50.4
	15:38:00	15:38:00		51.3	64.5	51.9	50.6
	15:39:00	15:39:00		51.3	64.6	51.9	50.8
	15:40:00	15:40:00		51.3	64.7	51.7	50.8
	15:41:00	15:41:00		51	64.2	52.1	50.5
	15:42:00	15:42:00		51.9	67.4	54	51
	15:43:00	15:43:00		51.6	66.2	52.4	51
	15:44:00	15:44:00		51.2	64.9	52.1	50.7
	15:45:00	15:45:00		51.9	66.6	52.4	51.4
	15:46:00	15:46:00		51.6	65.1	52.5	50.4
	15:47:00	15:47:00		52.1	66.8	52.5	51.6
	15:48:00	15:48:00		51.7	65.6	53.1	51
	15:49:00	15:49:00		51.6	65.7	52.4	51
	15:50:00	15:50:00		51.4	65.8	53	50.3
	15:51:00	15:51:00		51.9	66.2	53.1	51
	15:52:00	15:52:00		51.6	65	52.4	50.9
	15:53:00	15:53:00		51.7	64.9	52.2	51.1
	15:54:00	15:54:00		51.4	64.6	52.5	50.8
	15:55:00	15:55:00		51.5	65.8	52.3	50.9
	15:56:00	15:56:00		51.3	64.8	52	50.6
	15:57:00	15:57:00		51.3	64.5	52.1	50.8
	15:58:00	15:58:00		51.3	65.7	51.8	50.7
	15:59:00	15:59:00		51.6	65.3	52.2	51.2
	16:00:00	16:00:00		51.6	65.8	52.6	50.8
	16:01:00	16:01:00		52.4	68.5	54.5	51.1
	16:02:00	16:02:00		52.5	66	53.7	51.5
	16:03:00	16:03:00		51.7	64.5	52.3	50.9
	16:04:00	16:04:00		51.7	65.5	52.2	51
	16:05:00	16:05:00		51.8	65.8	52.4	50.9
	16:06:00	16:06:00		51.9	65.2	53	51.2
	16:07:00	16:07:00		52.3	65.4	53.1	51.7
	16:08:00	16:08:00		52	65.6	52.6	51.4
	16:09:00	16:09:00		52.4	66	53.1	51.9
	16:10:00	16:10:00		51.9	64.9	52.7	51.1
	16:11:00	16:11:00		52.1	65.5	52.9	51.6
	16:12:00	16:12:00		51.9	67.1	53.7	51
	16:13:00	16:13:00		52	65.9	52.6	51.1
	16:14:00	16:14:00		51.8	65.6	52.3	51.2
	16:15:00	16:15:00		51.7	64.8	52.3	50.9
	16:16:00	16:16:00		51.4	66.2	52.2	50.5
	16:17:00	16:17:00		52.3	67	54.4	50.6
	16:18:00	16:18:00		51.4	64.7	52.3	50.6
	16:19:00	16:19:00		51.3	64.9	52	50.7
	16:20:00	16:20:00		51.1	64.6	51.7	50.8
	16:21:00	16:21:00		51.3	65.3	52.3	50.6
	16:22:00	16:22:00		51.4	64.7	52.1	50.6
	16:23:00	16:23:00		51.4	65.9	52.1	50.5
	16:24:00	16:24:00		51	64.4	51.4	50.5
	16:25:00	16:25:00		51.2	67.6	52.9	50.7
	16:26:00	16:26:00		51.4	64.7	52.6	50.9
	16:27:00	16:27:00		51.7	66.3	53.7	50.8
	16:28:00	16:28:00		51.7	65.3	52.5	50.9
	16:29:00	16:29:00		51.7	65.6	53.1	50.8

**Ambient Noise Data**

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	16:30:00	16:30:00		51.9	65.6	52.6	50.8
	16:31:00	16:31:00		51.6	65.7	52.5	50.9
	16:32:00	16:32:00		51.8	65.6	52.5	51.4
	16:33:00	16:33:00		51.4	65.1	52	50.8
	16:34:00	16:34:00		51.5	65.3	52	50.9
	16:35:00	16:35:00		51.6	65.7	52.4	50.9
	16:36:00	16:36:00		52.7	68.4	53.7	51.1
	16:37:00	16:37:00		51.7	65.3	53.1	51.1
	16:38:00	16:38:00		52	65.5	52.5	51.3
	16:39:00	16:39:00		51.8	64.8	52.2	51.2
	16:40:00	16:40:00		51.9	65.5	52.5	51.3
	16:41:00	16:41:00		52	65.6	52.7	51.2
	16:42:00	16:42:00		51.9	65.9	52.8	51.3
	16:43:00	16:43:00		51.7	64.7	52.2	51.1
	16:44:00	16:44:00		52.1	66.3	53	51.4
	16:45:00	16:45:00		51.9	65.2	52.5	51.5
	16:46:00	16:46:00		51.6	65.4	52.3	50.8
	16:47:00	16:47:00		51.6	65.5	52.2	51
	16:48:00	16:48:00		51.5	64.6	52	51
	16:49:00	16:49:00		51.7	65.7	52.3	51.1
	16:50:00	16:50:00		51.6	65.2	52.3	51.1
	16:51:00	16:51:00		51.5	64.7	52	51
	16:52:00	16:52:00		51.6	64.7	52.2	51.3
	16:53:00	16:53:00		51.7	64.8	52.2	51.1
	16:54:00	16:54:00		51.6	65.4	52.3	51.2
	16:55:00	16:55:00		51.5	64.6	51.9	51.1
	16:56:00	16:56:00		51.8	65.5	52.6	51.1
	16:57:00	16:57:00		51.8	65.1	52.5	51.1
	16:58:00	16:58:00		52.3	66	53.4	51.8
	16:59:00	16:59:00		52	66	52.6	51.6
	17:00:00	17:00:00		52	65.4	52.5	51.7
	17:01:00	17:01:00		52	65.3	52.6	51.7
	17:02:00	17:02:00		51.9	65.1	52.6	51.2
	17:03:00	17:03:00		51.4	64.4	52.1	50.8
	17:04:00	17:04:00		51.4	64.5	52.1	50.7
	17:05:00	17:05:00		51.9	65.2	53	51.3
	17:06:00	17:06:00		52.2	65.7	52.7	51.8
	17:07:00	17:07:00		52.7	66	53.3	52.1
	17:08:00	17:08:00		52.7	66.5	53.3	52.2
	17:09:00	17:09:00		52.4	65.7	52.9	52
	17:10:00	17:10:00		52.5	65.6	53	52.1
	17:11:00	17:11:00		52.5	65.8	53	52.1
	17:12:00	17:12:00		52.3	65.5	52.9	51.9
	17:13:00	17:13:00		52.6	67.2	53.8	51.8
	17:14:00	17:14:00		52.8	68.8	54.3	51.8
	17:15:00	17:15:00		52.2	65.9	52.9	51.5
	17:16:00	17:16:00		52.2	65.9	53	51.4
	17:17:00	17:17:00		52.6	66.5	53.3	51.8
	17:18:00	17:18:00		52.5	67.3	54.4	51.7
	17:19:00	17:19:00		53.4	70	56.1	51.7
	17:20:00	17:20:00		52	66	52.8	51.5
	17:21:00	17:21:00		51.8	65.6	53	51
	17:22:00	17:22:00		51.4	65	52.1	50.8
	17:23:00	17:23:00		51.6	64.7	52.6	50.9
	17:24:00	17:24:00		51.6	65.3	52.5	51
	17:25:00	17:25:00		51.9	65.4	53	51.1
	17:26:00	17:26:00		51.5	64.8	52.1	50.8
	17:27:00	17:27:00		51.8	64.8	52.5	50.8
	17:28:00	17:28:00		52.4	65.6	53.1	51.9
	17:29:00	17:29:00		52.4	66.5	53.6	51.7
	17:30:00	17:30:00		52.4	66.3	52.9	52
	17:31:00	17:31:00		52.5	67.1	53	52
	17:32:00	17:32:00		51.9	65.7	52.6	51.5
	17:33:00	17:33:00		51.8	66.1	52.7	51.1
	17:34:00	17:34:00		52.2	66.3	52.6	51.9
	17:35:00	17:35:00		52.5	65.6	52.9	52

**Ambient Noise Data**

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	17:36:00	17:36:00		52.8	65.8	53.2	52.3
	17:37:00	17:37:00		52.9	66.4	53.5	52.4
	17:38:00	17:38:00		52.8	66.3	53.3	52.4
	17:39:00	17:39:00		52.6	66.3	53	52.2
	17:40:00	17:40:00		52.7	66	53.2	52.1
	17:41:00	17:41:00		51.9	65.4	52.6	51.4
	17:42:00	17:42:00		51.8	66	52.2	51.3
	17:43:00	17:43:00		52	71.1	56.4	51.2
	17:44:00	17:44:00		51.6	65.3	52.1	51
	17:45:00	17:45:00		51.6	65.9	52.2	51.1
	17:46:00	17:46:00		52.6	67.9	53.7	51.8
	17:47:00	17:47:00		52.7	66.5	53.6	52.3
	17:48:00	17:48:00		53.1	67.4	53.5	52.5
	17:49:00	17:49:00		53.8	73.1	56.3	53
	17:50:00	17:50:00		53.8	68	54.3	52.9
	17:51:00	17:51:00		53.5	66.9	53.9	53.1
	17:52:00	17:52:00		53.3	67.5	53.8	52.7
	17:53:00	17:53:00		53	67	53.6	52.5
	17:54:00	17:54:00		52.8	66.4	53.4	52.2
	17:55:00	17:55:00		53	69.6	56.3	52
	17:56:00	17:56:00		52.9	70.1	55	52.1
	17:57:00	17:57:00		52.2	66.3	52.8	51.7
	17:58:00	17:58:00		52.7	67.2	53.4	52.1
	17:59:00	17:59:00		52.6	66.3	53.2	51.9
	18:00:00	18:00:00		51.8	65.5	52.3	51.2
	18:01:00	18:01:00		51.7	65.1	52.1	51.1
	18:02:00	18:02:00		52.1	65.5	52.9	51.7
	18:03:00	18:03:00		52.3	66.4	53.1	51.7
	18:04:00	18:04:00		52.5	65.7	53.2	52
	18:05:00	18:05:00		52.5	66.5	53.1	52
	18:06:00	18:06:00		52.1	65.6	52.8	51.6
	18:07:00	18:07:00		52.2	66.8	52.8	51.7
	18:08:00	18:08:00		52.3	65.9	53.3	51.6
	18:09:00	18:09:00		52	65.9	52.7	51.3
	18:10:00	18:10:00		52.5	66.6	53.2	52.1
	18:11:00	18:11:00		52.7	66.2	53.2	52.3
	18:12:00	18:12:00		52.7	66.5	53.2	52.1
	18:13:00	18:13:00		52.4	65.9	52.9	51.9
	18:14:00	18:14:00		52.1	66.2	52.7	51.3
	18:15:00	18:15:00		52.3	65.5	52.9	51.9
	18:16:00	18:16:00		52.5	66.1	53	52
	18:17:00	18:17:00		53.1	67.5	54.3	52.4
	18:18:00	18:18:00		53	67.2	53.6	52.4
	18:19:00	18:19:00		52.8	66.6	53.3	52.4
	18:20:00	18:20:00		53	67.4	53.7	52.5
	18:21:00	18:21:00		53.1	67.6	53.5	52.5
	18:22:00	18:22:00		53.1	66.8	53.7	52.5
	18:23:00	18:23:00		53.2	66.9	54.3	52.7
	18:24:00	18:24:00		53	66.8	53.5	52.4
	18:25:00	18:25:00		53.1	67	54.1	52.4
	18:26:00	18:26:00		53.5	68.3	54.9	52.9
	18:27:00	18:27:00		52.4	66.3	53.3	51.8
	18:28:00	18:28:00		52.5	66.8	52.9	52.1
	18:29:00	18:29:00		52.7	65.8	53.2	52.1
	18:30:00	18:30:00		52.9	66.8	53.4	52.5
	18:31:00	18:31:00		53.3	67.2	54	52.7
	18:32:00	18:32:00		53.5	67.1	53.9	53.1
	18:33:00	18:33:00		53.2	66.6	53.8	52.7
	18:34:00	18:34:00		53.3	67.3	53.9	52.8
	18:35:00	18:35:00		53.3	69.5	54.1	52.7
	18:36:00	18:36:00		53.8	67.3	54.6	53
	18:37:00	18:37:00		53.2	66.9	53.6	52.8
	18:38:00	18:38:00		53.6	67.3	54.3	53
	18:39:00	18:39:00		53.3	67	53.6	52.8
	18:40:00	18:40:00		53.5	67.8	54.1	52.8
	18:41:00	18:41:00		53.2	67.4	53.8	52.8

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	18:42:00	18:42:00		53.5	66.7	54.2	52.9
	18:43:00	18:43:00		53.3	67.4	53.9	52.7
	18:44:00	18:44:00		53.1	67	54.4	52.1
	18:45:00	18:45:00		53.9	68.5	55.2	52.7
	18:46:00	18:46:00		54.6	68.2	55.5	53.6
	18:47:00	18:47:00		54.4	69.6	56.1	53.5
	18:48:00	18:48:00		54.5	70.1	55.5	53.8
	18:49:00	18:49:00		54.5	68.2	55.3	54
	18:50:00	18:50:00		54.3	69.7	55.1	53.6
	18:51:00	18:51:00		53.6	74.8	54.2	52.8
	18:52:00	18:52:00		53.5	67.1	54.3	52.9
	18:53:00	18:53:00		53.6	67.6	54.1	52.9
	18:54:00	18:54:00		53.8	68.2	54.7	53.1
	18:55:00	18:55:00		55.1	68.8	56.4	54.1
	18:56:00	18:56:00		55.7	75.8	61.5	54
	18:57:00	18:57:00		55	70.8	60.9	53.5
	18:58:00	18:58:00		53.6	67.1	54.1	53.1
	18:59:00	18:59:00		54	68.8	55.1	53.3
	19:00:00	19:00:00		54.2	70.1	56.9	53.2
	19:01:00	19:01:00		54.3	72.3	58.2	53.3
	19:02:00	19:02:00		55.1	69.3	56.1	53.8
	19:03:00	19:03:00		54.4	69	55.9	53.4
	19:04:00	19:04:00		54.1	68.4	54.8	53.3
	19:05:00	19:05:00		55.5	72.3	57.2	53.8
	19:06:00	19:06:00		55	69.7	56.2	53.5
	19:07:00	19:07:00		53.6	67.5	54.4	53.2
	19:08:00	19:08:00		53.6	68.7	56.4	53
	19:09:00	19:09:00		53.8	68.3	54.6	53
	19:10:00	19:10:00		53.5	67.7	55	52.5
	19:11:00	19:11:00		53.7	67.8	54.3	53
	19:12:00	19:12:00		53	66.9	53.7	51.9
	19:13:00	19:13:00		52.6	66.3	53.2	52.1
	19:14:00	19:14:00		53.3	68.1	53.8	52.4
	19:15:00	19:15:00		53.2	67.9	53.7	52.8
	19:16:00	19:16:00		53.6	71.1	55.6	52.7
	19:17:00	19:17:00		53.5	69.5	54.2	52.6
	19:18:00	19:18:00		53.8	71.6	54.4	53.4
	19:19:00	19:19:00		53.6	67.7	54	53.3
	19:20:00	19:20:00		53.6	70.4	54.5	52.5
	19:21:00	19:21:00		53.9	69.8	55	53.2
	19:22:00	19:22:00		54.1	69.2	55.6	53.5
	19:23:00	19:23:00		54.3	68.5	55.4	53.7
	19:24:00	19:24:00		53.7	67.5	55.1	53.1
	19:25:00	19:25:00		53.2	67.4	53.6	52.5
	19:26:00	19:26:00		53.5	67.3	55.3	52.8
	19:27:00	19:27:00		54.2	68.4	55.3	53.5
	19:28:00	19:28:00		54.4	77.6	58.2	53.7
	19:29:00	19:29:00		54.5	69.2	57.7	53.6
	19:30:00	19:30:00		53.9	67.7	55.3	53.5
	19:31:00	19:31:00		54	67.8	54.6	53.4
	19:32:00	19:32:00		55.1	70.8	59.3	53.8
	19:33:00	19:33:00		54.8	70.6	55.9	54
	19:34:00	19:34:00		54.6	69	55.6	53.9
	19:35:00	19:35:00		53.9	69.6	54.5	53.4
	19:36:00	19:36:00		53.9	68.1	54.6	53.4
	19:37:00	19:37:00		53.9	71.4	56.6	53.3
	19:38:00	19:38:00		53.5	68.7	55.3	53
	19:39:00	19:39:00		54.2	68	55.2	53
	19:40:00	19:40:00		53.5	66.9	54.2	52.6
	19:41:00	19:41:00		53.3	68.4	53.7	52.7
	19:42:00	19:42:00		53.9	69.3	55.1	53.3
	19:43:00	19:43:00		53.9	69.1	55	53.2
	19:44:00	19:44:00		54.8	72.7	59.5	53.1
	19:45:00	19:45:00		55.3	75.9	62.6	53.6
	19:46:00	19:46:00		53.5	68.5	54.6	52.5
	19:47:00	19:47:00		52.9	67.4	54	52.3

**Ambient Noise Data**

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	19:48:00	19:48:00		52.8	68.6	53.7	52
	19:49:00	19:49:00		53.3	68.3	54.1	52.4
	19:50:00	19:50:00		53.5	67.8	54.9	52.6
	19:51:00	19:51:00		54.5	82.8	63.6	52.6
	19:52:00	19:52:00		53.1	67.5	53.5	52.6
	19:53:00	19:53:00		54.3	70.6	59.4	52.8
	19:54:00	19:54:00		53	67.2	53.7	52.2
	19:55:00	19:55:00		52.7	69.2	53.2	52.1
	19:56:00	19:56:00		52.7	70	54	52.2
	19:57:00	19:57:00		52.7	65.8	53.1	52.4
	19:58:00	19:58:00		52.8	67.1	53.3	52.3
	19:59:00	19:59:00		52.4	65.8	53.1	51.8
	20:00:00	20:00:00		52.3	69.5	52.8	51.7
	20:01:00	20:01:00		52.4	66.9	53.1	51.7
	20:02:00	20:02:00		52.7	68.9	54.6	52.1
	20:03:00	20:03:00		53.1	67.5	53.4	52.7
	20:04:00	20:04:00		53.3	66.5	53.8	52.8
	20:05:00	20:05:00		53	67.3	53.3	52.7
	20:06:00	20:06:00		53	66	53.5	52.5
	20:07:00	20:07:00		52.9	66.7	53.4	52.5
	20:08:00	20:08:00		53.1	68.6	54.3	52.7
	20:09:00	20:09:00		52.9	67.4	53.3	52.4
	20:10:00	20:10:00		53.5	69.8	56.9	52.5
	20:11:00	20:11:00		53.4	68.5	54.5	52.4
	20:12:00	20:12:00		52.5	66	53.1	51.8
	20:13:00	20:13:00		53	68.9	54.9	52.3
	20:14:00	20:14:00		53.7	67.1	54.4	53.1
	20:15:00	20:15:00		53.9	68.2	54.8	53
	20:16:00	20:16:00		54.4	71.6	56.3	53.6
	20:17:00	20:17:00		53.4	68.1	54.8	52.2
	20:18:00	20:18:00		53.3	68.2	54.7	52.2
	20:19:00	20:19:00		53.9	68.3	54.9	53.1
	20:20:00	20:20:00		54.4	70.8	56.4	53.2
	20:21:00	20:21:00		53.5	67.5	54.4	52.7
	20:22:00	20:22:00		53.4	67.7	54.4	52.4
	20:23:00	20:23:00		53.6	75.1	55	52
	20:24:00	20:24:00		53.7	71.3	55.4	52.9
	20:25:00	20:25:00		53.7	79.7	61	52.3
	20:26:00	20:26:00		54.2	72.9	56.7	52.9
	20:27:00	20:27:00		53.9	73	55.9	52.8
	20:28:00	20:28:00		53.7	71	55	52.7
	20:29:00	20:29:00		53.7	75.2	57	52.7
	20:30:00	20:30:00		54.3	75.6	58.7	52.6
	20:31:00	20:31:00		54	74.7	57.7	52.4
	20:32:00	20:32:00		53.5	72.2	58.4	52.1
	20:33:00	20:33:00		52.6	69	54.3	52.1
	20:34:00	20:34:00		53	67	54	52.2
	20:35:00	20:35:00		53.1	67.9	54	52.4
	20:36:00	20:36:00		53.2	69.8	56.2	52.2
	20:37:00	20:37:00		54.3	75.6	59.8	53
	20:38:00	20:38:00		54	68.9	56.8	52.8
	20:39:00	20:39:00		53.9	69.6	55.7	52.9
	20:40:00	20:40:00		53.7	70.2	55.9	52.9
	20:41:00	20:41:00		54.8	73.9	57	53.6
	20:42:00	20:42:00		56.8	81.4	64.4	54.1
	20:43:00	20:43:00		54.3	71.8	56.1	53.2
	20:44:00	20:44:00		54.4	76.4	59.2	52.7
	20:45:00	20:45:00		53.5	68.6	55	52.6
	20:46:00	20:46:00		53.2	67.3	54.5	52.8
	20:47:00	20:47:00		53.1	68	54.1	52.7
	20:48:00	20:48:00		53.8	68.8	55.4	53
	20:49:00	20:49:00		53.2	68.4	55.7	52.2
	20:50:00	20:50:00		54.1	72.3	56.6	52.3
	20:51:00	20:51:00		54.4	76.7	59.3	52.5
	20:52:00	20:52:00		54.8	74.5	59.3	52.3
	20:53:00	20:53:00		54.4	72.2	57.3	52.6

## Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	20:54:00	20:54:00		54.3	74.2	57.3	51.5
	20:55:00	20:55:00		53.5	68.7	56	51.5
	20:56:00	20:56:00		54.2	75.3	58.4	52.5
	20:57:00	20:57:00		53.9	70.9	56.3	52.8
	20:58:00	20:58:00		54.2	74.5	57.8	52.4
	20:59:00	20:59:00		53.5	72.4	58.1	52
	21:00:00	21:00:00		53.4	67.8	55.8	52.3
	21:01:00	21:01:00		53.7	73.1	55.8	52.2
	21:02:00	21:02:00		53.9	73.9	57.5	52.5
	21:03:00	21:03:00		54.7	75.6	57.1	52.8
	21:04:00	21:04:00		54.8	78	58.3	52.6
	21:05:00	21:05:00		54.4	75.4	57.8	52.3
	21:06:00	21:06:00		53.6	69.6	56.2	52.4
	21:07:00	21:07:00		53.9	74.9	57.5	52.4
	21:08:00	21:08:00		53.6	72.8	55.6	52
	21:09:00	21:09:00		53.1	74.1	55	51.9
	21:10:00	21:10:00		52.9	74.5	55.1	51.8
	21:11:00	21:11:00		54.1	74.3	57.5	51.9
	21:12:00	21:12:00		53.6	73.7	56.7	52
	21:13:00	21:13:00		52.5	69.8	53.9	51.5
	21:14:00	21:14:00		52.4	66.5	54	51.4
	21:15:00	21:15:00		53.3	73.9	56.7	51.1
	21:16:00	21:16:00		52.6	67.2	54.4	51.8
	21:17:00	21:17:00		52.7	72.7	55.5	52.1
	21:18:00	21:18:00		54.2	72.9	56.7	52.5
	21:19:00	21:19:00		54.1	71.2	56	52.7
	21:20:00	21:20:00		53.6	69.8	55.4	52.6
	21:21:00	21:21:00		53.4	68.5	55.4	52.3
	21:22:00	21:22:00		53.9	70.4	56.8	52.3
	21:23:00	21:23:00		53.7	73.4	56	52.4
	21:24:00	21:24:00		54.4	73.4	56.6	52.3
	21:25:00	21:25:00		53.9	70.8	56.1	52.5
	21:26:00	21:26:00		53.3	74.3	55.3	52.2
	21:27:00	21:27:00		53.7	75.1	56.2	52.4
	21:28:00	21:28:00		54.2	75.3	56.2	52.7
	21:29:00	21:29:00		53.7	74.7	56.4	52.4
	21:30:00	21:30:00		53.9	74.3	55.9	52.2
	21:31:00	21:31:00		54.1	74.3	57	51.8
	21:32:00	21:32:00		54.4	81.4	60.9	52.3
	21:33:00	21:33:00		54.9	85.5	65.4	52.3
	21:34:00	21:34:00		53.9	78.3	61.1	52
	21:35:00	21:35:00		53.1	71.9	56.9	52
	21:36:00	21:36:00		54.1	75.9	58.6	52
	21:37:00	21:37:00		54.1	72.6	55.9	52.7
	21:38:00	21:38:00		54.2	78.7	62.6	51.8
	21:39:00	21:39:00		53	71.5	55.1	51.7
	21:40:00	21:40:00		54.4	78.1	62	52.4
	21:41:00	21:41:00		56.4	77.6	59.9	51.7
	21:42:00	21:42:00		57.1	83.3	65.6	51.5
	21:43:00	21:43:00		53	74.6	57.3	51.6
	21:44:00	21:44:00		53.3	72.9	56.8	51.9
	21:45:00	21:45:00		52.4	74.1	54.6	51.2
	21:46:00	21:46:00		52.4	69.2	55.2	51.1
	21:47:00	21:47:00		52.1	68.6	54.9	50.8
	21:48:00	21:48:00		53	75.3	58	50.8
	21:49:00	21:49:00		52.8	72.5	55.8	51.9
	21:50:00	21:50:00		53.1	74.4	57.4	51.8
	21:51:00	21:51:00		53.1	67.3	55	51.6
	21:52:00	21:52:00		53.3	74.6	57.2	51.5
	21:53:00	21:53:00		52.9	74.1	57.2	51.3
	21:54:00	21:54:00		53.5	74.8	57.9	52
	21:55:00	21:55:00		53.2	74	55	51.7
	21:56:00	21:56:00		53.1	71.8	56.2	52
	21:57:00	21:57:00		53.4	74.9	58.8	51.8
	21:58:00	21:58:00		54.3	78	60.6	51.5
	21:59:00	21:59:00		52.5	75	57.9	51.1

## Ambient Noise Data

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	22:00:00	22:00:00		52.1	67.1	54.2	51.1
	22:01:00	22:01:00		52.9	72.8	56.1	51.5
	22:02:00	22:02:00		53.6	75.7	57.7	51.6
	22:03:00	22:03:00		55.8	76.9	59.6	52.3
	22:04:00	22:04:00		53.3	70.3	57.2	51.6
	22:05:00	22:05:00		55.2	82.9	62.1	53
	22:06:00	22:06:00		54.3	80.1	60	52.4
	22:07:00	22:07:00		53.6	74	58.7	52.2
	22:08:00	22:08:00		54.5	80.6	63	52.5
	22:09:00	22:09:00		53	73.1	54.9	51.7
	22:10:00	22:10:00		54.6	71.8	57	52.5
	22:11:00	22:11:00		53.1	75.1	55.4	51.8
	22:12:00	22:12:00		52.8	73	55.3	51.7
	22:13:00	22:13:00		53.5	73.6	56	51.5
	22:14:00	22:14:00		52.9	71.2	54.9	51.9
	22:15:00	22:15:00		54	70.2	59.7	52.2
	22:16:00	22:16:00		53.5	72.8	56.1	52.6
	22:17:00	22:17:00		53.8	71.2	57	52.3
	22:18:00	22:18:00		52.9	68.9	54.9	51.6
	22:19:00	22:19:00		59.8	82.6	66	51.6
	22:20:00	22:20:00		52	65.9	53.4	51
	22:21:00	22:21:00		53.6	76.8	61.1	51.4
	22:22:00	22:22:00		52.7	70.9	56.7	50.9
	22:23:00	22:23:00		53.4	77.4	60.8	51.4
	22:24:00	22:24:00		53.3	76.7	59.4	51.9
	22:25:00	22:25:00		55	79.9	62.3	51.6
	22:26:00	22:26:00		53.1	76.6	60.3	51.1
	22:27:00	22:27:00		52.5	71.4	55.5	50.9
	22:28:00	22:28:00		53.1	74.7	57.9	51.7
	22:29:00	22:29:00		53.9	72.6	57.1	51.5
	22:30:00	22:30:00		52.6	68.4	55.6	51.3
	22:31:00	22:31:00		51.9	65.6	52.8	51.2
	22:32:00	22:32:00		52.6	67.7	54.8	51.6
	22:33:00	22:33:00		52.4	66.7	53.9	51.5
	22:34:00	22:34:00		51.8	65.9	52.7	50.7
	22:35:00	22:35:00		51.2	65.5	51.9	50.2
	22:36:00	22:36:00		51	65.3	51.6	50.5
	22:37:00	22:37:00		51.9	69	55.1	50.7
	22:38:00	22:38:00		51.8	69.1	54.4	50.6
	22:39:00	22:39:00		53	71.4	56.2	51.2
	22:40:00	22:40:00		53.4	73.7	58	50.9
	22:41:00	22:41:00		51.6	65.1	52.8	50.8
	22:42:00	22:42:00		53.4	67.4	55	51.9
	22:43:00	22:43:00		52.5	70.1	55.6	50.6
	22:44:00	22:44:00		53.4	69.7	55.7	50.9
	22:45:00	22:45:00		52.7	72.7	56	51.4
	22:46:00	22:46:00		52.5	65.8	53.2	51.5
	22:47:00	22:47:00		53.9	78.2	59.4	52.2
	22:48:00	22:48:00		53.8	77.7	59.1	51.9
	22:49:00	22:49:00		52.6	71.7	55.9	51.3
	22:50:00	22:50:00		53.4	73.3	56.9	51.8
	22:51:00	22:51:00		53.2	71.1	56.9	52.1
	22:52:00	22:52:00		53.9	74.9	57.8	51.2
	22:53:00	22:53:00		52.5	72.2	55.5	51.2
	22:54:00	22:54:00		52.6	71.5	56.6	51.2
	22:55:00	22:55:00		51.9	67.4	52.7	50.7
	22:56:00	22:56:00		52.3	66.9	52.9	51.4
	22:57:00	22:57:00		52	68.2	53.5	50.4
	22:58:00	22:58:00		55.3	74.8	60	51
	22:59:00	22:59:00		54	79	62.8	51.6
	23:00:00	23:00:00		52.7	70.3	56.6	51.5
	23:01:00	23:01:00		53.3	74.7	58.9	51.9
	23:02:00	23:02:00		52	65.9	53.4	50.4
	23:03:00	23:03:00		51.9	67.5	53.1	50.3
	23:04:00	23:04:00		51.9	71.1	54.3	50.8
	23:05:00	23:05:00		52	69.4	54.3	50.7

**Ambient Noise Data**

Receptor 1 (R1)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	23:06:00	23:06:00		52.6	68.3	54.8	51.6
	23:07:00	23:07:00		53.3	69.9	54.5	52.4
	23:08:00	23:08:00		53	68.2	54.8	51.7
	23:09:00	23:09:00		53.8	74.1	58.8	52.3
	23:10:00	23:10:00		52.6	68.8	53.8	51.6
	23:11:00	23:11:00		53.5	70.2	55.4	52.2
	23:12:00	23:12:00		53.4	73.2	57.4	51.8
	23:13:00	23:13:00		54.5	71.6	56.4	52.5
	23:14:00	23:14:00		54	69.9	56.7	52.4
	23:15:00	23:15:00		53.1	74.4	58.2	51.3
	23:16:00	23:16:00		53.8	75.5	59.9	51.7
	23:17:00	23:17:00		52.8	68.3	55.9	51.7
	23:18:00	23:18:00		53.2	69.2	55	52.1
	23:19:00	23:19:00		54.6	81.7	61.6	52.4
	23:20:00	23:20:00		54.3	72.9	59.2	52.4
	23:21:00	23:21:00		54	73.6	56.7	53
	23:22:00	23:22:00		53.6	79.6	59.7	52
	23:23:00	23:23:00		53.5	79	59.2	51.8
	23:24:00	23:24:00		53.1	71.5	54.8	51.6
	23:25:00	23:25:00		56.2	86.1	64.5	52.3
	23:26:00	23:26:00		55.6	82.3	61.6	53.3
	23:27:00	23:27:00		54	69.5	56.6	52.8
	23:28:00	23:28:00		54.6	72	57.7	52.9
	23:29:00	23:29:00		54.9	72.2	57.5	52.5
	23:30:00	23:30:00		54.2	70.8	56.8	52.1
	23:31:00	23:31:00		54.8	73.4	58.5	51.3
	23:32:00	23:32:00		56.9	82.8	67.5	50.8
	23:33:00	23:33:00		66	88.2	73	55.1
	23:34:00	23:34:00		54.8	71.1	59.4	52.7
	23:35:00	23:35:00		54.1	77.8	58	52.7
	23:36:00	23:36:00		53.4	68.5	56.4	51.9
	23:37:00	23:37:00		52.7	67.9	54.8	51.5
	23:38:00	23:38:00		52.9	70.4	55.3	51.4
	23:39:00	23:39:00		53	66.8	54	52.2
	23:40:00	23:40:00		54.4	78.9	60.5	52.3
	23:41:00	23:41:00		53.8	76.1	57.8	52.6
	23:42:00	23:42:00		53.6	71.9	56.9	52.4
	23:43:00	23:43:00		58.1	74.8	62.2	53.2
	23:44:00	23:44:00		59.6	75.6	62.6	57.4
	23:45:00	23:45:00		55.8	71.6	58.8	52.9
	23:46:00	23:46:00		53.9	68.9	56	52.5
	23:47:00	23:47:00		55.1	79.1	62.4	51.4
	23:48:00	23:48:00		53.5	71	55.9	51.9
	23:49:00	23:49:00		54.8	75.1	58.9	53.4
	23:50:00	23:50:00		54.9	75.4	59.4	52.7
	23:51:00	23:51:00		55.1	77.3	60.7	52.5
	23:52:00	23:52:00		53.1	72.1	57.6	50.6
	23:53:00	23:53:00		52.5	66.4	54	51.3
	23:54:00	23:54:00		52.8	76.5	58.9	51
	23:55:00	23:55:00		53.9	73.2	58	51.4
	23:56:00	23:56:00		52.1	68.1	53.4	50.5
	23:57:00	23:57:00		52.1	72.4	54.7	51.1
	23:58:00	23:58:00		56.1	93	67.8	51.1
	23:59:00	23:59:00		53.1	78.5	59	50.7
	24:00:00	24:00:00		51.4	75.6	53.7	50.4

**Ambient Noise Summary**

Receptor 2 (R2)

Serial Number                    BGI040008  
 Start Time                        10:16:21    13-Apr-2017  
 Run Length                       24:00:00    5529600

UNIT REV                        R12N

Microphone Information		
Description	Units	Value
Sensitivity	dB	29
Polarization	Volts	0
Meter Range	dB	120
Max Level	dB	140
Meas. Floor	dB	-20

Calibration Information			
Description		Units	Value
Pre-Cal	Level	dB	113.7
	Date		10:14:06    13-Apr-2017
Post-Cal	Level	dB	113.9
	Date		10:17:35    14-Apr-2017
ReCert	Date		Unavailable

Configuration Information			
Description	Units	Meter 1	Meter 2
Integration Threshold	dB	OFF	OFF
Exchange Rate	dB	3	3
Criterion Level	dB	90	85
Upper Limit Level	dB	140	140
Projected Time	Hrs	24	24
Weighting		A	A
Time Response		SLOW	SLOW

Measurement	Units	Meter 1 Broadband	Meter 2 Broadband
Lavg	dB	57.1	57.1
Lmax	dB	82.7	82.7
Lmin	dB	32.7	32.7
Lpk	dB	104.5	104.5
TWA	dB	61.9	61.9
PTWA	dB	61.9	61.9
DOSE	%	0.15	0.48
PDOSE	%	0.15	0.48
SEL	dB	106.5	106.4
EXP	p2s	18	18

**Ambient Noise Summary**

Receptor 2 (R2)

Measurement	Units	Value
LDN	dB	64
CNEL	dB	63.9
TAKTMAX (5sec)	dB	N/A
LC-A	dB	N/A

Exceedence	Units	Value
L01	dB	66.4
L10	dB	60.4
L50	dB	53.8
L90	dB	46.9

		Meter 1			Meter 2		
		Count	Percent	Time	Count	Percent	Time
Overload	(OL)	0	0	00:00:00	0	0	00:00:00
Under-Range	(UR)	3600	0.06	00:00:56	3718	0.06	00:00:58
Upper Limit	(UL)	0	0	00:00:00	0	0	00:00:00

Exceedence Table

	0	1	2	3	4	5	6	7	8	9
0	82.7	66.4	64.9	63.9	63.2	62.7	62.2	61.7	61.3	60.8
10	60.4	60	59.6	59.3	59	58.7	58.4	58.2	58	57.7
20	57.5	57.3	57.1	57	56.8	56.6	56.5	56.3	56.2	56
30	55.9	55.7	55.6	55.5	55.4	55.3	55.1	55	54.9	54.8
40	54.7	54.6	54.5	54.4	54.3	54.2	54.1	54	53.9	53.9
50	53.8	53.7	53.6	53.5	53.4	53.3	53.2	53.1	53	52.9
60	52.8	52.7	52.6	52.4	52.3	52.2	52.1	51.9	51.8	51.6
70	51.5	51.3	51.2	51	50.8	50.7	50.5	50.3	50.1	49.9
80	49.6	49.4	49.1	48.9	48.6	48.3	48	47.8	47.5	47.2
90	46.9	46.6	46.1	45.7	45.2	44.7	44	43	41.7	39.7

## Ambient Noise Data

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
Study 1	0:01:00	0:01:00		51.3	83.9	59.5	45.4
	0:02:00	0:02:00		57	76.9	63	49.2
	0:03:00	0:03:00		56.2	75.6	61.6	49.4
	0:04:00	0:04:00		55.7	74.9	61.2	50.4
	0:05:00	0:05:00		54.9	77.2	59.6	50
	0:06:00	0:06:00		57.2	77.9	63.5	50
	0:07:00	0:07:00		57.8	79.4	65.6	49.8
	0:08:00	0:08:00		59.2	79.5	66.1	48.5
	0:09:00	0:09:00		52.2	71.2	57.3	48.9
	0:10:00	0:10:00		50.7	66.7	54.1	47.4
	0:11:00	0:11:00		55.1	78.5	64	48.9
	0:12:00	0:12:00		57.7	82.8	66.5	50.7
	0:13:00	0:13:00		58.8	79.4	65.7	49.5
	0:14:00	0:14:00		51.4	68	53.3	49.5
	0:15:00	0:15:00		53	69.1	55.1	50.8
	0:16:00	0:16:00		57.1	79.7	64.1	48.5
	0:17:00	0:17:00		52.7	71.6	58.2	49.7
	0:18:00	0:18:00		58	78.8	66	50.9
	0:19:00	0:19:00		56	81.7	66	50.3
	0:20:00	0:20:00		54.5	73.2	59	50.2
	0:21:00	0:21:00		52.3	72.1	58.8	49.8
	0:22:00	0:22:00		54.1	77.3	60.7	50.3
	0:23:00	0:23:00		54.9	75.4	59.5	51.5
	0:24:00	0:24:00		51.4	67.2	54.8	49.1
	0:25:00	0:25:00		51	68.6	53.6	47.8
	0:26:00	0:26:00		51.4	69.2	56.5	48.7
	0:27:00	0:27:00		55.2	71.3	58.7	52.7
	0:28:00	0:28:00		54	72.2	59	50.4
	0:29:00	0:29:00		52.7	71.6	58.6	49.4
	0:30:00	0:30:00		52.8	75.8	57.8	49.9
	0:31:00	0:31:00		55.5	75.3	61.2	50.7
	0:32:00	0:32:00		58.7	85.7	68	50.4
	0:33:00	0:33:00		57.2	80.9	66	49.1
	0:34:00	0:34:00		56.5	77	63.9	50.1
	0:35:00	0:35:00		52.7	75.1	58.2	50.1
	0:36:00	0:36:00		53.4	74.9	58.3	50.3
	0:37:00	0:37:00		55.7	73	60	52.8
	0:38:00	0:38:00		56.6	77	63.1	52.8
	0:39:00	0:39:00		55.1	74.1	59.3	52
	0:40:00	0:40:00		53.8	72.1	59.6	48.5
	0:41:00	0:41:00		57.3	81.1	66	49
	0:42:00	0:42:00		56.1	80.6	62.2	48.8
	0:43:00	0:43:00		52.9	70.2	56.7	51.5
	0:44:00	0:44:00		54.5	71.2	56.3	51.1
	0:45:00	0:45:00		59.1	81.7	64.3	54.2
	0:46:00	0:46:00		52.9	71.6	58.6	48.6
	0:47:00	0:47:00		56.9	76.9	61.9	51.9
	0:48:00	0:48:00		56.9	80.6	64.9	50.4
	0:49:00	0:49:00		55.7	75.2	62.1	52.2
	0:50:00	0:50:00		54.6	71.3	58.2	51.1
	0:51:00	0:51:00		54.5	80.4	60	49.6
	0:52:00	0:52:00		55.1	75.4	61.7	49.7
	0:53:00	0:53:00		56.4	80	64.8	49.7
	0:54:00	0:54:00		57.8	82.9	67.5	49.9
	0:55:00	0:55:00		52.9	70.7	61.4	50.4
	0:56:00	0:56:00		54.9	73.4	61.2	51
	0:57:00	0:57:00		56.1	77.7	63.2	51.4
	0:58:00	0:58:00		56.8	79	62.7	51.2
	0:59:00	0:59:00		60	81.7	65.2	54.6
	1:00:00	1:00:00		56.8	74.2	60.5	51.8
	1:01:00	1:01:00		55.5	74	61.2	50
	1:02:00	1:02:00		53.6	72.6	56.7	50.8
	1:03:00	1:03:00		52.9	71.7	55.8	50.8
	1:04:00	1:04:00		55.5	78.4	61.2	52.1
	1:05:00	1:05:00		54.5	74.3	60	51.7

Start: 10:16:21 AM 4/13/2017

Stop: 10:16:21 AM 4/14/2017

## 24-Hour Measurement Summary

	Day	Evening	Night
Peak Hour:	63.5	56.2	58.6
Average Hour:	58.2	54.7	52.2

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	1:06:00	1:06:00		54	71.6	56.1	48.7
	1:07:00	1:07:00		55.2	72.6	58.3	49.6
	1:08:00	1:08:00		56.6	74.3	61.3	53.4
	1:09:00	1:09:00		58.6	78	63.2	53.3
	1:10:00	1:10:00		55.9	73.3	60.6	52.7
	1:11:00	1:11:00		60.1	84.3	67.6	53.4
	1:12:00	1:12:00		66.7	89.3	76.9	52.5
	1:13:00	1:13:00		54.7	80.2	59.3	50.2
	1:14:00	1:14:00		55.9	78.8	60.4	50.2
	1:15:00	1:15:00		55.2	71.7	58.8	53.2
	1:16:00	1:16:00		59.7	81.6	64.5	54.4
	1:17:00	1:17:00		56.5	75.1	61.6	52.8
	1:18:00	1:18:00		54.5	71.7	58	51.2
	1:19:00	1:19:00		52.2	68.8	56	49.1
	1:20:00	1:20:00		56	73.9	60.5	52
	1:21:00	1:21:00		57	77.3	64.5	52.7
	1:22:00	1:22:00		55.1	73	59.2	51.3
	1:23:00	1:23:00		57.8	81.8	66.8	51.9
	1:24:00	1:24:00		58.1	80.2	64.4	53.1
	1:25:00	1:25:00		54.8	74.6	58.9	52.5
	1:26:00	1:26:00		57	74.3	60.3	54.6
	1:27:00	1:27:00		57.8	78.3	63.4	54.1
	1:28:00	1:28:00		55.9	72.5	58.5	52.9
	1:29:00	1:29:00		54	72.8	56.4	50.6
	1:30:00	1:30:00		59.6	81.1	67.6	52.8
	1:31:00	1:31:00		56.3	74.3	60.6	52.7
	1:32:00	1:32:00		56.3	73.3	60.1	53.6
	1:33:00	1:33:00		63.3	86.3	69.9	54.9
	1:34:00	1:34:00		57.9	74.5	63.3	52.5
	1:35:00	1:35:00		56.2	82.9	63.5	53.2
	1:36:00	1:36:00		55.8	71.5	59.4	52.7
	1:37:00	1:37:00		57.1	73.2	60.3	53.2
	1:38:00	1:38:00		55.9	73.4	61	52.5
	1:39:00	1:39:00		61.5	86.1	68.5	54
	1:40:00	1:40:00		58.3	78.1	64.5	52.7
	1:41:00	1:41:00		56.6	79.1	63.2	53.7
	1:42:00	1:42:00		56.2	72.5	58.6	53.1
	1:43:00	1:43:00		55.9	72.9	59.9	52.1
	1:44:00	1:44:00		58.3	77.6	62.1	53.7
	1:45:00	1:45:00		55.9	71.9	58.6	53.2
	1:46:00	1:46:00		56.2	74.8	59.2	52.9
	1:47:00	1:47:00		58	82	65	52.4
	1:48:00	1:48:00		66.4	96.9	74.2	56.8
	1:49:00	1:49:00		58.9	87.5	66.1	55.1
	1:50:00	1:50:00		58.2	75.4	61.9	54.9
	1:51:00	1:51:00		57.9	76.6	62.9	54.8
	1:52:00	1:52:00		61.8	85.6	67	55.4
	1:53:00	1:53:00		60.4	83.2	67.1	54.4
	1:54:00	1:54:00		57.8	77.1	61.7	54.7
	1:55:00	1:55:00		60.3	88.9	65.6	56.9
	1:56:00	1:56:00		67.9	100.6	75.8	55.5
	1:57:00	1:57:00		61.6	83.1	69.8	53.4
	1:58:00	1:58:00		59.1	81	66.9	54.8
	1:59:00	1:59:00		56.7	80	62.3	53.8
	2:00:00	2:00:00		55.4	74.4	58.1	53.2
	2:01:00	2:01:00		55.3	70.5	57.2	52.7
	2:02:00	2:02:00		56	72.4	58.5	53.1
	2:03:00	2:03:00		56.5	72.2	59.3	54.3
	2:04:00	2:04:00		55.2	72.6	58.4	53
	2:05:00	2:05:00		57.8	73.4	59.7	55.3
	2:06:00	2:06:00		58.2	79.4	66.3	53.5
	2:07:00	2:07:00		58.8	77.5	63.6	54.4
	2:08:00	2:08:00		60.1	79.3	63.5	56.3
	2:09:00	2:09:00		58.7	81.1	64.5	53.8
	2:10:00	2:10:00		58	73.6	63.2	55.1
	2:11:00	2:11:00		61.6	80.1	66.8	53.4

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	2:12:00	2:12:00		57.8	79.7	64.8	51.9
	2:13:00	2:13:00		58.1	78.4	64.4	52.1
	2:14:00	2:14:00		58	79.1	65.8	53.2
	2:15:00	2:15:00		60.8	87.3	71.3	51.3
	2:16:00	2:16:00		58.5	78.7	67	53.8
	2:17:00	2:17:00		55.3	77.6	58.8	53.5
	2:18:00	2:18:00		55.9	76.1	63	51.4
	2:19:00	2:19:00		57.3	75.6	61.2	53.6
	2:20:00	2:20:00		56.3	77.9	64.8	50.9
	2:21:00	2:21:00		53	69.9	56	49.4
	2:22:00	2:22:00		59.1	79	65.4	49.8
	2:23:00	2:23:00		54.7	73	59.2	51.4
	2:24:00	2:24:00		54.4	71.3	58.7	49.3
	2:25:00	2:25:00		53.8	70.6	58	49.1
	2:26:00	2:26:00		52	68.8	54.3	49.3
	2:27:00	2:27:00		58.1	82.1	65.8	48.9
	2:28:00	2:28:00		55.5	77.4	61.9	51.1
	2:29:00	2:29:00		55.1	73	58.9	52.6
	2:30:00	2:30:00		53.4	70.5	57.9	50.3
	2:31:00	2:31:00		52.9	71.5	56.6	50
	2:32:00	2:32:00		53.9	71.1	58.4	51.1
	2:33:00	2:33:00		57.6	84.2	64.4	51.6
	2:34:00	2:34:00		55.3	75.4	61.6	51.4
	2:35:00	2:35:00		55.8	80.8	63.5	51
	2:36:00	2:36:00		57.1	78.7	65.1	50.4
	2:37:00	2:37:00		54.3	74	58.7	51.5
	2:38:00	2:38:00		54	75.5	60.5	50.4
	2:39:00	2:39:00		57.7	81.9	65.7	53.2
	2:40:00	2:40:00		54.8	71.9	61.9	51.5
	2:41:00	2:41:00		54.4	73.9	59.1	51.4
	2:42:00	2:42:00		59.7	82.1	65.5	51.1
	2:43:00	2:43:00		57.7	81.1	63.5	52.3
	2:44:00	2:44:00		54.3	73.1	60.5	50.8
	2:45:00	2:45:00		52.2	75	57.7	50.3
	2:46:00	2:46:00		58.9	84.6	67.8	51.6
	2:47:00	2:47:00		55.7	76	61.1	51.8
	2:48:00	2:48:00		59.4	78.3	65.5	53.5
	2:49:00	2:49:00		54.2	70.2	56.6	51.1
	2:50:00	2:50:00		59.9	82.1	67.9	53.7
	2:51:00	2:51:00		54.8	70.4	57.8	52.2
	2:52:00	2:52:00		56.5	76.3	63.3	52.1
	2:53:00	2:53:00		55.8	79.9	67.6	50.5
	2:54:00	2:54:00		59.2	85.7	69.9	53.1
	2:55:00	2:55:00		63.1	91.9	74.8	52.8
	2:56:00	2:56:00		57.1	74.1	59.7	54
	2:57:00	2:57:00		56	70.7	57.4	54.6
	2:58:00	2:58:00		57.2	73.8	59.1	54.8
	2:59:00	2:59:00		57.7	76	61.5	55.5
	3:00:00	3:00:00		57.5	73.9	60.3	55.5
	3:01:00	3:01:00		56.6	73	59.4	54.9
	3:02:00	3:02:00		58.3	76.3	60.9	56.6
	3:03:00	3:03:00		58.9	75.7	62.3	57
	3:04:00	3:04:00		59.2	77.9	64.1	56.6
	3:05:00	3:05:00		58.3	73	60.8	56.9
	3:06:00	3:06:00		62.5	82.8	69.5	57.9
	3:07:00	3:07:00		57.7	75.1	61	56.5
	3:08:00	3:08:00		58	78.7	62.7	56.9
	3:09:00	3:09:00		57.5	72.7	59.4	56.4
	3:10:00	3:10:00		58.2	73.5	60.7	55.2
	3:11:00	3:11:00		56.3	78.1	60.4	53.8
	3:12:00	3:12:00		55	81.3	61.7	52.1
	3:13:00	3:13:00		56.7	73.5	60.2	54
	3:14:00	3:14:00		60.3	82.3	67.6	56.1
	3:15:00	3:15:00		56	71.8	58.7	54
	3:16:00	3:16:00		57.1	80.9	65.9	52.8
	3:17:00	3:17:00		54.3	79	62	50.7

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	3:18:00	3:18:00		58	85.8	65.2	51.7
	3:19:00	3:19:00		56.6	76.9	62.6	52.6
	3:20:00	3:20:00		58.5	80.1	68.4	51.6
	3:21:00	3:21:00		62.9	87.7	70.9	52.2
	3:22:00	3:22:00		60.3	81.1	66.8	50.5
	3:23:00	3:23:00		54.5	71.1	58.2	52.3
	3:24:00	3:24:00		57.7	79.3	62.8	51.9
	3:25:00	3:25:00		54.9	78.8	58.5	52.3
	3:26:00	3:26:00		55.9	76.3	61.8	52.4
	3:27:00	3:27:00		56.8	74.8	61.6	53.5
	3:28:00	3:28:00		54.7	80.4	62	51
	3:29:00	3:29:00		54.9	77.5	63	50.4
	3:30:00	3:30:00		54.1	74.7	59.1	50.8
	3:31:00	3:31:00		57.1	75.9	61.8	52
	3:32:00	3:32:00		53	74.3	58.6	49.7
	3:33:00	3:33:00		54.7	76.7	61	50
	3:34:00	3:34:00		55.6	76.5	61.9	49.9
	3:35:00	3:35:00		54.9	83.1	61	49.7
	3:36:00	3:36:00		56	75.5	64.8	51.5
	3:37:00	3:37:00		54.5	71.9	63.5	51.5
	3:38:00	3:38:00		55.2	75.6	60.6	53.1
	3:39:00	3:39:00		57.7	77.9	64.1	53
	3:40:00	3:40:00		57.1	80.3	64.8	51.3
	3:41:00	3:41:00		54.2	72.1	59.2	51.6
	3:42:00	3:42:00		53.7	73	59.5	50.7
	3:43:00	3:43:00		55.2	73.1	60.1	52
	3:44:00	3:44:00		53.9	73.3	55.7	51.7
	3:45:00	3:45:00		56.4	81.8	63.3	51.5
	3:46:00	3:46:00		57.4	84.1	67.2	52.7
	3:47:00	3:47:00		55.5	75.4	66.4	51.7
	3:48:00	3:48:00		53.1	79.3	57.4	51.5
	3:49:00	3:49:00		58.8	81.8	67.9	48.3
	3:50:00	3:50:00		56.2	78.7	65.1	51.3
	3:51:00	3:51:00		56.9	79.2	65.6	50
	3:52:00	3:52:00		54	74	61.5	51.7
	3:53:00	3:53:00		56.5	80.1	66.7	51.8
	3:54:00	3:54:00		53.3	70.9	57.6	51.1
	3:55:00	3:55:00		56.5	80.3	64.8	49.6
	3:56:00	3:56:00		56.5	78.9	62.1	50.5
	3:57:00	3:57:00		56.9	77.6	61.8	50.9
	3:58:00	3:58:00		55.4	74.3	61.1	52.1
	3:59:00	3:59:00		60.8	83.6	72.1	52.3
	4:00:00	4:00:00		55	76.3	61.2	50.6
	4:01:00	4:01:00		53.3	73.7	57.1	50.9
	4:02:00	4:02:00		57.1	78	61.2	52.8
	4:03:00	4:03:00		56.9	79.2	62.6	51.5
	4:04:00	4:04:00		56.1	77.3	64	48.4
	4:05:00	4:05:00		53.9	72	58.9	50.1
	4:06:00	4:06:00		55.6	77.9	63.1	51.5
	4:07:00	4:07:00		59.2	78.8	63.8	53.7
	4:08:00	4:08:00		53.5	70.6	59	51
	4:09:00	4:09:00		54.6	76.7	58.5	51
	4:10:00	4:10:00		56.6	76.5	62.9	50.8
	4:11:00	4:11:00		56.6	75.6	60.5	53.5
	4:12:00	4:12:00		58.3	78.9	64.3	51.4
	4:13:00	4:13:00		53.2	74.1	57.4	50.2
	4:14:00	4:14:00		57.1	82.4	63.3	52.3
	4:15:00	4:15:00		54.3	79	59.2	51.5
	4:16:00	4:16:00		56.2	77.2	61.4	53.2
	4:17:00	4:17:00		58.5	79	66.9	52.3
	4:18:00	4:18:00		53.7	73.7	59.6	49.5
	4:19:00	4:19:00		53.6	71.9	59.5	49.1
	4:20:00	4:20:00		51.9	67.8	54.9	50.6
	4:21:00	4:21:00		56.2	84.6	63.1	50.1
	4:22:00	4:22:00		54.6	75.8	58.8	51.7
	4:23:00	4:23:00		58.6	78.6	63.5	53.3

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	4:24:00	4:24:00		55.4	76.2	58.9	51.9
	4:25:00	4:25:00		52.5	68.5	54.7	51.2
	4:26:00	4:26:00		54.2	77.4	62.5	50.6
	4:27:00	4:27:00		56.1	77.2	64	52.9
	4:28:00	4:28:00		55.7	74.9	61.2	53.5
	4:29:00	4:29:00		54.6	74.9	58.1	52.6
	4:30:00	4:30:00		54.6	74.1	59.3	51.8
	4:31:00	4:31:00		57.6	79.4	64.6	51.5
	4:32:00	4:32:00		54.9	72.9	59.3	51.2
	4:33:00	4:33:00		55.2	71.7	56.9	53.6
	4:34:00	4:34:00		64.8	86.4	74	55.1
	4:35:00	4:35:00		57.2	77.5	66	51.1
	4:36:00	4:36:00		56.7	75.5	63.4	51
	4:37:00	4:37:00		55.5	75.1	62.5	51.5
	4:38:00	4:38:00		55.8	72.9	60.2	50.9
	4:39:00	4:39:00		56.9	75.8	61.4	53.4
	4:40:00	4:40:00		61.1	84.7	70.9	52.8
	4:41:00	4:41:00		55.3	76.5	59.1	52.7
	4:42:00	4:42:00		53.2	68.6	55.5	51.7
	4:43:00	4:43:00		55.4	73.3	59.5	52.6
	4:44:00	4:44:00		59.9	82.7	68.4	53.3
	4:45:00	4:45:00		58.3	87.1	72.2	53.7
	4:46:00	4:46:00		63.6	90.7	77.4	52.2
	4:47:00	4:47:00		55.5	75.8	61.9	53.1
	4:48:00	4:48:00		59.2	81	65.5	54.9
	4:49:00	4:49:00		59.9	80	65	52.8
	4:50:00	4:50:00		54.4	76.2	58.9	52.3
	4:51:00	4:51:00		55.1	74.7	60.3	52.2
	4:52:00	4:52:00		61.6	81.4	69.3	54
	4:53:00	4:53:00		57.9	77.4	69.1	51.4
	4:54:00	4:54:00		57.9	82.5	70.2	49.6
	4:55:00	4:55:00		55.5	75.6	61.2	51.3
	4:56:00	4:56:00		55.1	74.5	60.5	52.5
	4:57:00	4:57:00		53.4	70.9	57.7	51.1
	4:58:00	4:58:00		57.7	75.8	62.6	53.9
	4:59:00	4:59:00		54.8	73.3	60.6	52.8
	5:00:00	5:00:00		53.7	75.8	59.6	50.6
	5:01:00	5:01:00		56.1	75.8	63.3	51.9
	5:02:00	5:02:00		54.9	74.6	59.1	51.1
	5:03:00	5:03:00		56	72.1	58.8	52.3
	5:04:00	5:04:00		56.3	74.8	62.3	52.7
	5:05:00	5:05:00		55	71	57.7	53.8
	5:06:00	5:06:00		58.3	82	64.2	53.1
	5:07:00	5:07:00		56.1	77	60.5	53.7
	5:08:00	5:08:00		53.9	71.1	56.3	52.5
	5:09:00	5:09:00		55.7	73.2	59.8	52.8
	5:10:00	5:10:00		60.7	82	70.8	51.5
	5:11:00	5:11:00		56.1	74.4	60.6	52.9
	5:12:00	5:12:00		55.3	73.9	61.1	51.5
	5:13:00	5:13:00		62.4	81.7	68.5	53.5
	5:14:00	5:14:00		52.5	68.5	55.5	50.5
	5:15:00	5:15:00		53.5	71.4	57.9	50.4
	5:16:00	5:16:00		56	77	62.6	52.5
	5:17:00	5:17:00		54.6	72.6	60.2	51.8
	5:18:00	5:18:00		54.1	72.6	57.7	51.9
	5:19:00	5:19:00		56	74.9	61.7	52.4
	5:20:00	5:20:00		56.1	75.6	64.5	51
	5:21:00	5:21:00		55.5	74.5	60.7	51.6
	5:22:00	5:22:00		53.5	73.6	59.6	50.9
	5:23:00	5:23:00		53.1	77.2	58.5	51
	5:24:00	5:24:00		55.3	79.3	61.1	51.3
	5:25:00	5:25:00		53.3	75.2	62.6	49
	5:26:00	5:26:00		53.7	74.9	58.9	50.7
	5:27:00	5:27:00		56	77	63.5	50.7
	5:28:00	5:28:00		55.9	78.2	61.4	52
	5:29:00	5:29:00		55.4	73	57.8	52.6

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	5:30:00	5:30:00		57.5	76.9	62.6	54.1
	5:31:00	5:31:00		58	73	60.1	55.9
	5:32:00	5:32:00		56.8	77.5	61	53.8
	5:33:00	5:33:00		56.5	76	62.8	52.5
	5:34:00	5:34:00		56.1	74.9	60.1	53.2
	5:35:00	5:35:00		55.4	72.5	58.8	51.6
	5:36:00	5:36:00		54.2	71.5	56.7	51.7
	5:37:00	5:37:00		56.8	73.3	59.8	55
	5:38:00	5:38:00		58.1	78.1	65.1	53.9
	5:39:00	5:39:00		55.1	75.2	60.5	51.1
	5:40:00	5:40:00		54.1	70.1	56.1	52.3
	5:41:00	5:41:00		56.2	75.2	59.6	54.3
	5:42:00	5:42:00		57.1	79.2	64.3	53
	5:43:00	5:43:00		56.2	76.5	62.4	53.7
	5:44:00	5:44:00		55.9	74	60.3	51.3
	5:45:00	5:45:00		56.9	75.6	62.9	52.7
	5:46:00	5:46:00		57.2	77.7	61.4	52.8
	5:47:00	5:47:00		58.7	77.3	64.5	54.1
	5:48:00	5:48:00		57.1	75.4	63.1	53.9
	5:49:00	5:49:00		55.4	73	61.7	51.6
	5:50:00	5:50:00		55.7	75.6	60.8	51.3
	5:51:00	5:51:00		58.1	73.9	61	54.9
	5:52:00	5:52:00		58.4	76.1	63.8	55.2
	5:53:00	5:53:00		57.1	76.6	60.7	55.2
	5:54:00	5:54:00		56.7	74.6	59.4	54.9
	5:55:00	5:55:00		57.6	79.8	62.9	53.9
	5:56:00	5:56:00		56	73.9	59.9	52.8
	5:57:00	5:57:00		58.5	76.2	62.9	55.7
	5:58:00	5:58:00		56	73	59.8	52.3
	5:59:00	5:59:00		56.8	72.3	59.6	53.3
	6:00:00	6:00:00		57.1	75	60.9	53.8
	6:01:00	6:01:00		57.8	74.2	61.1	55.1
	6:02:00	6:02:00		56.5	72.3	59.7	53.3
	6:03:00	6:03:00		57.2	74.9	60.4	53.7
	6:04:00	6:04:00		60.4	82	65.1	57.3
	6:05:00	6:05:00		61.8	81.8	66	54.5
	6:06:00	6:06:00		55	71.1	59.3	53.2
	6:07:00	6:07:00		56.8	75.5	61.4	53.6
	6:08:00	6:08:00		56.1	76.1	60.7	53.1
	6:09:00	6:09:00		56.7	74.4	60.2	54.2
	6:10:00	6:10:00		54.2	70.2	56.9	52.2
	6:11:00	6:11:00		55.4	72.3	59.6	53.2
	6:12:00	6:12:00		57.1	72.6	59.5	52.9
	6:13:00	6:13:00		59.4	74.7	62	57.9
	6:14:00	6:14:00		57.8	78.8	66.8	52.7
	6:15:00	6:15:00		55.7	73.6	60.1	53.9
	6:16:00	6:16:00		55.5	70.1	57.9	53.5
	6:17:00	6:17:00		59.9	85	66.4	53.6
	6:18:00	6:18:00		56.2	75.1	60.9	54.1
	6:19:00	6:19:00		57.5	77.7	64.6	53
	6:20:00	6:20:00		57.1	77	65.3	52.4
	6:21:00	6:21:00		59	77.4	65.1	55.8
	6:22:00	6:22:00		58.3	76.5	62	55.4
	6:23:00	6:23:00		58.8	78.3	64.9	54.6
	6:24:00	6:24:00		56	72.1	57.9	53.9
	6:25:00	6:25:00		53.7	70.7	57.7	50.3
	6:26:00	6:26:00		56.5	75.3	61.2	50.2
	6:27:00	6:27:00		57.8	76.4	60.7	54.8
	6:28:00	6:28:00		53	70.6	58.5	49.1
	6:29:00	6:29:00		56.5	73.6	59.5	54.3
	6:30:00	6:30:00		56.7	73.1	59.1	54.5
	6:31:00	6:31:00		55.3	71.8	59.1	52.8
	6:32:00	6:32:00		56.7	80.8	61.2	54
	6:33:00	6:33:00		57.1	73.8	61.4	54.2
	6:34:00	6:34:00		56.5	74.4	60.6	53.9
	6:35:00	6:35:00		55.8	71.3	58.6	54.1

## Ambient Noise Data

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	6:36:00	6:36:00		57.7	73.7	60.4	54.6
	6:37:00	6:37:00		55	72.2	56.9	52.6
	6:38:00	6:38:00		55.4	70.5	56.8	53.5
	6:39:00	6:39:00		57.4	77.4	63.2	52.3
	6:40:00	6:40:00		54.3	73	59.6	52
	6:41:00	6:41:00		53.6	68.2	55.3	51.9
	6:42:00	6:42:00		53.3	70.8	56.3	50.2
	6:43:00	6:43:00		53.5	68.5	55.8	50.7
	6:44:00	6:44:00		54.1	70.2	55.4	52.1
	6:45:00	6:45:00		55.9	72.2	59	53.3
	6:46:00	6:46:00		57.3	78.6	61.2	51
	6:47:00	6:47:00		59.5	76.4	63	57.4
	6:48:00	6:48:00		59	81.1	62.1	55.4
	6:49:00	6:49:00		55.9	70.6	57.8	53.7
	6:50:00	6:50:00		56.8	75.9	63.1	53.2
	6:51:00	6:51:00		53.3	67.1	60.7	51.2
	6:52:00	6:52:00		53.9	74.4	60.2	50.7
	6:53:00	6:53:00		53.1	74	59.8	49.3
	6:54:00	6:54:00		53.2	72.1	55.3	50.1
	6:55:00	6:55:00		54.5	71.1	57.1	51.8
	6:56:00	6:56:00		54.9	71.7	57.3	52.6
	6:57:00	6:57:00		54.2	72.1	56.9	52.2
	6:58:00	6:58:00		58.7	81.6	67.1	52
	6:59:00	6:59:00		54.9	77.2	56.3	53.4
	7:00:00	7:00:00		54.8	74.2	58.1	52.7
	7:01:00	7:01:00		57.5	74.6	62.2	53.2
	7:02:00	7:02:00		54.3	72.2	59.3	51.8
	7:03:00	7:03:00		55.5	76.3	62.3	52.1
	7:04:00	7:04:00		58	79.1	65.5	52.7
	7:05:00	7:05:00		55.2	71.6	57.8	52.2
	7:06:00	7:06:00		57.9	82.1	65.8	51.8
	7:07:00	7:07:00		52.7	68.3	54.7	50.9
	7:08:00	7:08:00		53	68.5	54.9	50.7
	7:09:00	7:09:00		54.8	70.3	56.3	53.2
	7:10:00	7:10:00		55.5	76	63	50.1
	7:11:00	7:11:00		55.5	72.7	57.3	54
	7:12:00	7:12:00		57.4	73.3	60.5	53.3
	7:13:00	7:13:00		57.3	73.1	59.1	55.2
	7:14:00	7:14:00		54	69.5	55.5	52.5
	7:15:00	7:15:00		54.5	70.6	56	53.1
	7:16:00	7:16:00		53	69	55	50.8
	7:17:00	7:17:00		55.3	73.1	59.5	52.1
	7:18:00	7:18:00		56	71.9	59.4	52.2
	7:19:00	7:19:00		56	72.7	57.9	54.5
	7:20:00	7:20:00		60.6	82.8	70	53.3
	7:21:00	7:21:00		56.7	76.5	62.8	53.5
	7:22:00	7:22:00		58.5	80.5	64	54.9
	7:23:00	7:23:00		59.2	79.9	65.9	55.4
	7:24:00	7:24:00		55.2	69.6	57	52.9
	7:25:00	7:25:00		56.1	71.9	58.9	52.9
	7:26:00	7:26:00		56.8	75.6	61.9	51.7
	7:27:00	7:27:00		56.1	71.2	58.9	54.2
	7:28:00	7:28:00		53.5	69.8	55.2	52
	7:29:00	7:29:00		55.8	73.5	60.8	52.1
	7:30:00	7:30:00		54.5	73.2	57	53
	7:31:00	7:31:00		54.2	70.3	56.2	52.3
	7:32:00	7:32:00		54.1	68.5	55.6	52.1
	7:33:00	7:33:00		54.5	70.7	57.1	51.9
	7:34:00	7:34:00		58.3	76	63.2	54.1
	7:35:00	7:35:00		57.8	80.7	66.8	52
	7:36:00	7:36:00		54.4	73.7	60.7	51.1
	7:37:00	7:37:00		53.8	71.1	57.2	51.4
	7:38:00	7:38:00		54.9	70.5	56.8	53.1
	7:39:00	7:39:00		55.2	72.4	58.8	53.3
	7:40:00	7:40:00		54.6	71	57.5	52.3
	7:41:00	7:41:00		55.4	72.3	58.7	53

## Ambient Noise Data

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	7:42:00	7:42:00		54.1	70.1	56.2	51.6
	7:43:00	7:43:00		58.1	79	62.5	52.8
	7:44:00	7:44:00		55.6	75.8	61.8	52.3
	7:45:00	7:45:00		58.7	86	68.3	53
	7:46:00	7:46:00		55.1	70.2	57.3	52.1
	7:47:00	7:47:00		56.7	73.4	59.3	53.1
	7:48:00	7:48:00		56.3	77.2	64.2	53
	7:49:00	7:49:00		54.8	72	57.1	53.6
	7:50:00	7:50:00		54.2	70.3	55.6	52
	7:51:00	7:51:00		53.9	71.1	55.4	52.4
	7:52:00	7:52:00		56.4	75.1	61.5	53.8
	7:53:00	7:53:00		54.4	69.6	56.2	51.1
	7:54:00	7:54:00		53.5	70.1	55	52.5
	7:55:00	7:55:00		54.1	69.9	55.9	52.8
	7:56:00	7:56:00		55.9	77.7	62.8	52.4
	7:57:00	7:57:00		54.7	72.7	60	51.7
	7:58:00	7:58:00		53.9	72.4	57	51.3
	7:59:00	7:59:00		54.4	70.5	57.3	52
	8:00:00	8:00:00		56	73.1	60.9	50.8
	8:01:00	8:01:00		54.7	73.7	60.5	50.6
	8:02:00	8:02:00		54.1	69.2	56.7	52.3
	8:03:00	8:03:00		55.4	70.2	57.1	53.2
	8:04:00	8:04:00		60.7	79.7	67.8	53.2
	8:05:00	8:05:00		55.3	70.2	57.8	53
	8:06:00	8:06:00		55.6	73.6	59.7	53.5
	8:07:00	8:07:00		53.5	70.3	57.3	50.8
	8:08:00	8:08:00		53.7	68.1	55.5	51.9
	8:09:00	8:09:00		52.7	68.9	55.4	50.7
	8:10:00	8:10:00		55.4	77.9	62.5	51.8
	8:11:00	8:11:00		56	76.6	62	51.5
	8:12:00	8:12:00		54.9	71.5	61.4	51.2
	8:13:00	8:13:00		55.9	74.4	59.5	53.3
	8:14:00	8:14:00		57.9	82.1	66.5	52.3
	8:15:00	8:15:00		55.4	75.7	63.3	51.8
	8:16:00	8:16:00		54.2	70.8	56	52.6
	8:17:00	8:17:00		55.1	75.9	61.9	50.9
	8:18:00	8:18:00		53.6	71.8	56.3	52.2
	8:19:00	8:19:00		53.5	73.7	55.6	51.9
	8:20:00	8:20:00		53.9	68.8	55.9	52.4
	8:21:00	8:21:00		54.4	69.5	56.5	53.1
	8:22:00	8:22:00		53.3	68.5	55.1	51.4
	8:23:00	8:23:00		55.3	74	60.9	51.7
	8:24:00	8:24:00		54.3	69.7	56.6	52.8
	8:25:00	8:25:00		54.9	69.7	57.1	53.5
	8:26:00	8:26:00		54	71.2	56.5	50.1
	8:27:00	8:27:00		52.7	68.2	54.1	51.2
	8:28:00	8:28:00		53.4	69.7	57.1	51.1
	8:29:00	8:29:00		55.3	73.2	58.6	52.2
	8:30:00	8:30:00		58.7	81.5	63.9	53.7
	8:31:00	8:31:00		53.2	70	55.5	49.3
	8:32:00	8:32:00		52.9	69.9	55.7	50.9
	8:33:00	8:33:00		53.5	68.2	55.1	51.7
	8:34:00	8:34:00		55.4	70.2	58.1	52.8
	8:35:00	8:35:00		54.7	70.7	57.7	53
	8:36:00	8:36:00		59.3	83.2	69	51.6
	8:37:00	8:37:00		54.6	78.8	60.1	52.2
	8:38:00	8:38:00		53.8	69.5	56.4	51.1
	8:39:00	8:39:00		55.1	72.1	58.8	52.7
	8:40:00	8:40:00		55.6	77.7	62.1	53.1
	8:41:00	8:41:00		54.9	71.6	56.7	53.5
	8:42:00	8:42:00		54	69.4	56.7	51.7
	8:43:00	8:43:00		55.7	75.7	60.1	52.5
	8:44:00	8:44:00		52.3	74.6	55.3	49.8
	8:45:00	8:45:00		53.4	68.7	55.1	52.2
	8:46:00	8:46:00		52.8	68.3	55.1	49
	8:47:00	8:47:00		55	73.4	60.1	52

## Ambient Noise Data

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	8:48:00	8:48:00		54.3	74.7	55.7	52.8
	8:49:00	8:49:00		54.9	73.4	56.7	52.8
	8:50:00	8:50:00		55	74.4	56.7	52.9
	8:51:00	8:51:00		54.9	75.6	57.8	52.9
	8:52:00	8:52:00		57.7	77.3	64.8	52.2
	8:53:00	8:53:00		53.9	70.3	55.9	51.4
	8:54:00	8:54:00		56.3	81	63.3	51.5
	8:55:00	8:55:00		53.7	69	55.5	51.9
	8:56:00	8:56:00		55.5	76	58.3	51.2
	8:57:00	8:57:00		55.8	75.9	58.4	53.6
	8:58:00	8:58:00		54.4	76	56.8	51.2
	8:59:00	8:59:00		54.2	75.6	56.3	50.9
	9:00:00	9:00:00		52.8	74.5	55.5	50.7
	9:01:00	9:01:00		53.5	76.5	60.5	50.9
	9:02:00	9:02:00		55.8	74.7	61.8	52.8
	9:03:00	9:03:00		55.1	74.9	60.4	53.3
	9:04:00	9:04:00		54.7	75.8	57.7	52.1
	9:05:00	9:05:00		56.5	86.1	67.5	50.2
	9:06:00	9:06:00		55.9	79.4	64.8	51.2
	9:07:00	9:07:00		53.1	73.8	54.6	49.7
	9:08:00	9:08:00		53.6	73.9	56.3	50.3
	9:09:00	9:09:00		56.7	80	64.1	51.9
	9:10:00	9:10:00		53.8	69	55.1	51.7
	9:11:00	9:11:00		54.7	76.3	59	52.1
	9:12:00	9:12:00		53.4	74.1	55.6	49.9
	9:13:00	9:13:00		52.8	73.7	55	49.3
	9:14:00	9:14:00		54.2	75.2	56.8	51.4
	9:15:00	9:15:00		52.9	73.1	54.4	50
	9:16:00	9:16:00		52.7	73.3	54.7	49.5
	9:17:00	9:17:00		51.5	72.9	53.8	49.9
	9:18:00	9:18:00		50.7	73.1	52.9	48.5
	9:19:00	9:19:00		57.1	81.1	67.9	48
	9:20:00	9:20:00		52.9	74.8	62.3	46
	9:21:00	9:21:00		48.9	70.6	51.4	46.9
	9:22:00	9:22:00		48.5	72.5	51.3	46.1
	9:23:00	9:23:00		48.4	72.5	51.5	46.5
	9:24:00	9:24:00		48.9	74.2	51.8	45.4
	9:25:00	9:25:00		51.5	76.7	60.8	43.9
	9:26:00	9:26:00		47.4	73.6	50.9	44.7
	9:27:00	9:27:00		53.9	76.4	63.7	43.7
	9:28:00	9:28:00		45.5	71.9	49.6	42.5
	9:29:00	9:29:00		45.3	70.6	49	43.1
	9:30:00	9:30:00		47.4	72.4	51.3	43.6
	9:31:00	9:31:00		44.9	59	46.2	43.9
	9:32:00	9:32:00		46.2	62.3	48	44.8
	9:33:00	9:33:00		47.4	73	50.8	45
	9:34:00	9:34:00		46.9	72.5	51	44.8
	9:35:00	9:35:00		51.4	73.6	60.4	43.8
	9:36:00	9:36:00		46.2	66.3	53.1	44.1
	9:37:00	9:37:00		53.7	82.3	64.4	45.1
	9:38:00	9:38:00		65.6	91.6	78.2	44.6
	9:39:00	9:39:00		50.2	72.2	54.1	46.7
	9:40:00	9:40:00		47.8	72.4	51.5	44.4
	9:41:00	9:41:00		47	73.2	50.9	43.7
	9:42:00	9:42:00		45.8	73.4	50.8	42.4
	9:43:00	9:43:00		46.2	72.4	51	43.2
	9:44:00	9:44:00		49	73.3	52.3	44.8
	9:45:00	9:45:00		49.9	74.7	53.4	45.8
	9:46:00	9:46:00		48.9	74.4	53.7	46.8
	9:47:00	9:47:00		47.8	66.6	50.9	45.9
	9:48:00	9:48:00		47.6	65.6	52.3	44.3
	9:49:00	9:49:00		56.3	79.8	66	44.5
	9:50:00	9:50:00		48.9	65.2	51.1	47.6
	9:51:00	9:51:00		48.6	70	50.1	47
	9:52:00	9:52:00		50.4	72	52.9	47.9
	9:53:00	9:53:00		52.3	74	56	47.7

**Ambient Noise Data**

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	9:54:00	9:54:00		52.1	73	55.3	49.7
	9:55:00	9:55:00		52.8	72	54.2	50.4
	9:56:00	9:56:00		52.8	71.3	56	49.1
	9:57:00	9:57:00		50.5	73.6	52.2	49
	9:58:00	9:58:00		48.2	63.3	51	45.7
	9:59:00	9:59:00		46.8	62.1	48.4	45.3
	10:00:00	10:00:00		47.4	61.9	48.6	44.9
	10:01:00	10:01:00		47.7	66.4	53.2	46.2
	10:02:00	10:02:00		52.2	82.8	60.3	47.2
	10:03:00	10:03:00		51.7	67.5	53.9	50
	10:04:00	10:04:00		54.4	75.8	62.8	48.9
	10:05:00	10:05:00		55.2	78.6	63.8	50.4
	10:06:00	10:06:00		57.3	80.4	66.9	50.2
	10:07:00	10:07:00		51.7	70	53.3	49.7
	10:08:00	10:08:00		53	68.2	54.9	50.8
	10:09:00	10:09:00		53.1	71	55.5	50.4
	10:10:00	10:10:00		59.5	83.4	68.6	50.6
	10:11:00	10:11:00		52.3	70.9	53.9	50.8
	10:12:00	10:12:00		52.3	70.7	54	49.7
	10:13:00	10:13:00		51.2	72.8	53.2	48.3
	10:14:00	10:14:00		51	71.4	53	48.3
	10:15:00	10:15:00		52.1	67.1	53.9	50.3
	10:16:00	10:16:00		51.6	69.8	54.3	48.9
	10:17:00	10:17:00		53.6	68.9	55.7	51.2
	10:18:00	10:18:00		56.5	72	59.4	53.1
	10:19:00	10:19:00		58.6	79.9	65.2	54.6
	10:20:00	10:20:00		55.3	71.3	57.8	53
	10:21:00	10:21:00		56.3	72.2	58.9	53.5
	10:22:00	10:22:00		56.3	72.3	58.8	53.1
	10:23:00	10:23:00		52.1	67.5	54	50
	10:24:00	10:24:00		54.6	71.6	58.7	49.7
	10:25:00	10:25:00		55	70.5	58.2	49.3
	10:26:00	10:26:00		52.3	68.6	55.1	48.3
	10:27:00	10:27:00		54.7	70.5	57.6	52
	10:28:00	10:28:00		55.8	71	57.7	53.2
	10:29:00	10:29:00		54.7	69.2	56.4	52.8
	10:30:00	10:30:00		54.5	70.8	56.7	52
	10:31:00	10:31:00		54.2	69	56.9	50.3
	10:32:00	10:32:00		52	72.4	55.3	48.4
	10:33:00	10:33:00		55.8	71.6	60.9	52.6
	10:34:00	10:34:00		56.5	72.9	58.2	54.3
	10:35:00	10:35:00		55.8	72.1	57.1	53.6
	10:36:00	10:36:00		55.6	72.4	59.4	53.2
	10:37:00	10:37:00		55.4	70.5	57.5	53.3
	10:38:00	10:38:00		55.4	72.1	58.4	53
	10:39:00	10:39:00		53.6	72.3	54.8	50.1
	10:40:00	10:40:00		52.7	70	55.7	49.8
	10:41:00	10:41:00		50.4	67.2	55.3	47.4
	10:42:00	10:42:00		51.5	67.1	54	48.5
	10:43:00	10:43:00		51.2	69.6	54.2	49.3
	10:44:00	10:44:00		53.6	68.2	55.2	50.1
	10:45:00	10:45:00		52.3	67.1	54.1	50.1
	10:46:00	10:46:00		51.8	66.4	53.6	48.6
	10:47:00	10:47:00		53.2	68.5	55.5	49.4
	10:48:00	10:48:00		51.2	71	54.8	48.1
	10:49:00	10:49:00		55.8	75.5	61.7	51.8
	10:50:00	10:50:00		53.7	68.4	55	51.1
	10:51:00	10:51:00		53.4	67.9	55.3	51.9
	10:52:00	10:52:00		53.4	71	55.2	51.4
	10:53:00	10:53:00		52.3	72.9	54.8	49.9
	10:54:00	10:54:00		54.3	71.9	56.6	52.5
	10:55:00	10:55:00		56.7	73.2	58.4	53.5
	10:56:00	10:56:00		56.2	71.6	58	53.3
	10:57:00	10:57:00		54.8	69.9	56.9	52.4
	10:58:00	10:58:00		53.9	70.3	57.9	51.1
	10:59:00	10:59:00		56	70.9	58.4	52.6

## Ambient Noise Data

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	11:00:00	11:00:00		54.6	78.1	57.5	52.5
	11:01:00	11:01:00		55.1	74.5	60.6	50.4
	11:02:00	11:02:00		57.7	78.9	63.6	51.7
	11:03:00	11:03:00		53.6	69.2	55.9	49.8
	11:04:00	11:04:00		56.2	70.7	58.1	54.1
	11:05:00	11:05:00		55	70.4	58.4	51.1
	11:06:00	11:06:00		55.2	82	63.6	48.1
	11:07:00	11:07:00		53.8	70.4	57.5	50.5
	11:08:00	11:08:00		54.9	71.3	58	52.4
	11:09:00	11:09:00		55.3	70.2	57.5	53.3
	11:10:00	11:10:00		54.9	70.2	57.3	51.9
	11:11:00	11:11:00		55.1	72.4	57.4	51.4
	11:12:00	11:12:00		56	72.9	57.9	53.9
	11:13:00	11:13:00		55.3	72.4	58.3	52.2
	11:14:00	11:14:00		55	71.8	56.9	53.1
	11:15:00	11:15:00		54	69.9	55.8	52.7
	11:16:00	11:16:00		56.7	77	64.7	51.8
	11:17:00	11:17:00		53.8	69.7	56.6	51.2
	11:18:00	11:18:00		55.5	71.7	58.8	52.7
	11:19:00	11:19:00		53.5	68.8	56	50
	11:20:00	11:20:00		56.7	75.6	62.7	53.4
	11:21:00	11:21:00		56.3	70.9	58.2	53.1
	11:22:00	11:22:00		54.5	69.6	57.3	50.4
	11:23:00	11:23:00		53.1	69.1	55.1	50.5
	11:24:00	11:24:00		52.9	67.9	54.5	50.5
	11:25:00	11:25:00		54.3	69.8	57.1	50.5
	11:26:00	11:26:00		54.5	69.8	57.1	51.4
	11:27:00	11:27:00		55.7	72.2	59.9	53.5
	11:28:00	11:28:00		54.6	69.8	56.9	51.4
	11:29:00	11:29:00		54.5	72.3	59.3	50.2
	11:30:00	11:30:00		51.3	68.2	54	48.1
	11:31:00	11:31:00		51.3	66.3	53.5	49
	11:32:00	11:32:00		53.7	68.9	56.2	51.7
	11:33:00	11:33:00		50	66.1	53.2	46.3
	11:34:00	11:34:00		49	65.3	51.2	46.9
	11:35:00	11:35:00		52.1	77.7	63.6	44.5
	11:36:00	11:36:00		56.5	77.8	64.5	50.5
	11:37:00	11:37:00		51.2	67.4	53.6	48.6
	11:38:00	11:38:00		49.9	67.3	53.1	47.8
	11:39:00	11:39:00		50.5	65.4	52.8	49
	11:40:00	11:40:00		51.6	67.1	54.4	48.5
	11:41:00	11:41:00		52.7	68.7	55.7	49.4
	11:42:00	11:42:00		52	67	53.9	50.2
	11:43:00	11:43:00		51.6	66.8	53.6	48.9
	11:44:00	11:44:00		54.1	71.4	56.9	51.3
	11:45:00	11:45:00		56.5	72.7	59.5	53.3
	11:46:00	11:46:00		52.6	68.8	55.7	49.1
	11:47:00	11:47:00		50.3	66.7	54.2	46.9
	11:48:00	11:48:00		53	68.9	56.2	47.9
	11:49:00	11:49:00		52.9	68.4	55.6	50.2
	11:50:00	11:50:00		51.1	66.6	52.5	49.3
	11:51:00	11:51:00		56.6	79.1	62.3	50.3
	11:52:00	11:52:00		53.3	67.6	54.7	51.5
	11:53:00	11:53:00		53.3	67.8	54.7	51.3
	11:54:00	11:54:00		55.5	75.1	62.6	50.8
	11:55:00	11:55:00		58.3	82.4	62.6	52.1
	11:56:00	11:56:00		55.2	71.3	61	51.9
	11:57:00	11:57:00		55.7	72.5	58.5	53.1
	11:58:00	11:58:00		54.6	70.4	57.5	50.4
	11:59:00	11:59:00		54.9	70.9	58	50.6
	12:00:00	12:00:00		54	71.2	58.1	49.2
	12:01:00	12:01:00		53.4	69.7	55.9	50.2
	12:02:00	12:02:00		52.4	69.8	55.2	49.5
	12:03:00	12:03:00		54.4	70.2	56.6	52
	12:04:00	12:04:00		54.2	74.3	56.5	51.4
	12:05:00	12:05:00		54.1	68.6	55.9	52

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	12:06:00	12:06:00		55.1	69.4	57	52.3
	12:07:00	12:07:00		54.6	70.9	58.7	49.9
	12:08:00	12:08:00		56.8	72	59.1	54.6
	12:09:00	12:09:00		57.1	76	61.5	53.4
	12:10:00	12:10:00		55.7	74.8	59.1	51.5
	12:11:00	12:11:00		57.2	72.3	60	52.5
	12:12:00	12:12:00		52.4	70.2	55.9	48.6
	12:13:00	12:13:00		51.1	69.5	54	46.1
	12:14:00	12:14:00		49.4	67.7	52.6	43.4
	12:15:00	12:15:00		54.8	74.3	59.3	45.8
	12:16:00	12:16:00		54.9	76.3	60.6	51
	12:17:00	12:17:00		52.7	68.8	55.3	47.7
	12:18:00	12:18:00		50.1	71.8	54.3	47.4
	12:19:00	12:19:00		54.2	71.7	57.7	50.7
	12:20:00	12:20:00		56	72.6	60	51
	12:21:00	12:21:00		56.6	72	59.6	53.2
	12:22:00	12:22:00		54.7	70.8	57.5	52.5
	12:23:00	12:23:00		51.6	68.6	57.1	45.8
	12:24:00	12:24:00		51.5	67.8	54.2	46.2
	12:25:00	12:25:00		49.4	69.6	51.9	46.4
	12:26:00	12:26:00		50.4	67	54.1	45.2
	12:27:00	12:27:00		52.1	68.7	55	46.7
	12:28:00	12:28:00		51.1	77.4	54.9	47.8
	12:29:00	12:29:00		52	68.5	55	47.7
	12:30:00	12:30:00		49.3	67.9	53.7	44.9
	12:31:00	12:31:00		50.7	66.8	53.7	47.6
	12:32:00	12:32:00		50	68.2	54.6	44.5
	12:33:00	12:33:00		50.4	67.9	55.8	43.9
	12:34:00	12:34:00		49.9	66.5	52.4	47.8
	12:35:00	12:35:00		52	69.5	54.6	47
	12:36:00	12:36:00		50.4	69.1	54	46.7
	12:37:00	12:37:00		50.1	66.1	53.4	45.7
	12:38:00	12:38:00		49.6	65.8	52.3	45.3
	12:39:00	12:39:00		47.7	66.2	51.7	42.5
	12:40:00	12:40:00		50	66.2	53.3	46.6
	12:41:00	12:41:00		49.1	66.9	51.7	46.8
	12:42:00	12:42:00		52.2	69.5	57.1	46.7
	12:43:00	12:43:00		51.2	68.8	56.3	43.8
	12:44:00	12:44:00		49.9	67	53.2	43.8
	12:45:00	12:45:00		47.5	64.6	52.3	41.7
	12:46:00	12:46:00		42.9	62.2	45.1	40.1
	12:47:00	12:47:00		43.2	61.3	47.2	39.8
	12:48:00	12:48:00		45	65.7	50.4	41.8
	12:49:00	12:49:00		44.2	63	48.7	41.9
	12:50:00	12:50:00		46.1	64.9	52.1	41.5
	12:51:00	12:51:00		48.4	76.3	57.3	41.1
	12:52:00	12:52:00		45.3	67.9	51.6	40.4
	12:53:00	12:53:00		49.5	66.7	53.3	43.9
	12:54:00	12:54:00		51.5	68.6	56.8	44.9
	12:55:00	12:55:00		50.2	70.5	57	43.8
	12:56:00	12:56:00		47.6	65	51	41.4
	12:57:00	12:57:00		50.9	68.9	54.9	47.4
	12:58:00	12:58:00		52	68.9	56.5	46
	12:59:00	12:59:00		52.4	69	56.3	49.7
	13:00:00	13:00:00		51.5	68.9	54.9	46.1
	13:01:00	13:01:00		54.2	70.5	56.7	51.9
	13:02:00	13:02:00		56.6	77.2	61.2	52.4
	13:03:00	13:03:00		53.8	73.1	58.5	49.5
	13:04:00	13:04:00		52.9	71.3	55.8	48.4
	13:05:00	13:05:00		50.7	68.4	55.2	47.2
	13:06:00	13:06:00		50.2	66.9	52.1	47.4
	13:07:00	13:07:00		48.2	65.8	51.6	44.1
	13:08:00	13:08:00		47.6	65.9	49.9	43.5
	13:09:00	13:09:00		46.5	64	50.4	43.2
	13:10:00	13:10:00		49	69	54.5	43.7
	13:11:00	13:11:00		49.7	66.3	53.1	46

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	13:12:00	13:12:00		52	69.6	56.9	45.9
	13:13:00	13:13:00		49.3	68.1	54.5	44
	13:14:00	13:14:00		48	66.3	51.9	44.2
	13:15:00	13:15:00		51.8	69.8	57.3	45.1
	13:16:00	13:16:00		49.5	66	52.6	44.8
	13:17:00	13:17:00		50.9	65.7	52.6	47.8
	13:18:00	13:18:00		52.1	69.1	56.5	47.3
	13:19:00	13:19:00		48.8	67.7	52	43.2
	13:20:00	13:20:00		49.6	68	52	44.9
	13:21:00	13:21:00		49.8	64.8	51.9	46.9
	13:22:00	13:22:00		49.9	67.9	52.5	47
	13:23:00	13:23:00		51.9	68.2	55.2	48.8
	13:24:00	13:24:00		50.6	67.4	53.6	46.6
	13:25:00	13:25:00		49.6	65.5	52.5	47.1
	13:26:00	13:26:00		50	67.4	53.1	46.7
	13:27:00	13:27:00		50.6	66.8	53.1	47.7
	13:28:00	13:28:00		51.6	67.8	54.7	48
	13:29:00	13:29:00		51.1	68.5	53.5	48.1
	13:30:00	13:30:00		50.4	67.4	52.3	47.4
	13:31:00	13:31:00		47.1	66.9	53.1	42.3
	13:32:00	13:32:00		48.5	67.2	52.2	44.3
	13:33:00	13:33:00		51.4	70.3	56	45.3
	13:34:00	13:34:00		46.1	66.3	50.2	42.5
	13:35:00	13:35:00		47.6	65.9	51.7	44.4
	13:36:00	13:36:00		49.4	67.8	52.3	45
	13:37:00	13:37:00		48.8	68.8	53.4	44.8
	13:38:00	13:38:00		46	65	48.3	42.9
	13:39:00	13:39:00		43.1	62.5	48.1	38.9
	13:40:00	13:40:00		46.4	64.4	52.3	40.2
	13:41:00	13:41:00		46.3	64	49.8	40.9
	13:42:00	13:42:00		45.3	62.8	49	41
	13:43:00	13:43:00		43.7	62.2	47.5	39.7
	13:44:00	13:44:00		43.7	61.9	47.1	39.6
	13:45:00	13:45:00		45.3	63.8	51	40
	13:46:00	13:46:00		46.7	63.6	49.5	42.3
	13:47:00	13:47:00		45.6	63.4	49.3	42.6
	13:48:00	13:48:00		46.4	63.9	49.6	43
	13:49:00	13:49:00		48.3	65.6	53.2	42.6
	13:50:00	13:50:00		48.6	66.1	53.6	42
	13:51:00	13:51:00		48.7	66.2	52.1	42.6
	13:52:00	13:52:00		48.2	66.3	53.6	40.9
	13:53:00	13:53:00		50.8	65.7	53.6	47.7
	13:54:00	13:54:00		50.7	68.3	55.5	45.4
	13:55:00	13:55:00		48.9	65.3	52.5	44.8
	13:56:00	13:56:00		46.4	64.6	52.4	41.1
	13:57:00	13:57:00		45.4	64	50.3	40.3
	13:58:00	13:58:00		45.8	69	51.3	39.5
	13:59:00	13:59:00		50.1	69	56.2	41
	14:00:00	14:00:00		52.1	69.3	56.9	47.5
	14:01:00	14:01:00		47.1	66.3	52.6	40.6
	14:02:00	14:02:00		46.7	66.8	51	39.4
	14:03:00	14:03:00		47.2	66.5	52.9	41.7
	14:04:00	14:04:00		45.5	65.4	52.5	36.4
	14:05:00	14:05:00		47.5	64.9	51.6	41.7
	14:06:00	14:06:00		50.2	69.7	55.4	44.6
	14:07:00	14:07:00		43.3	63.8	47.9	39.6
	14:08:00	14:08:00		48.4	64.7	51.5	44.9
	14:09:00	14:09:00		47	65	49.9	41.5
	14:10:00	14:10:00		45.9	65.5	49.7	42.2
	14:11:00	14:11:00		49.6	66.4	54	44.4
	14:12:00	14:12:00		51.9	67.6	55.3	48.6
	14:13:00	14:13:00		48.8	67.1	52.2	44.8
	14:14:00	14:14:00		55.5	82.1	67.1	42.4
	14:15:00	14:15:00		49.3	72.3	61.2	36.9
	14:16:00	14:16:00		56.3	78.6	64.8	41.4
	14:17:00	14:17:00		44.7	62.5	48.7	41

**Ambient Noise Data**

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	14:18:00	14:18:00		46.6	62.5	49.7	43.2
	14:19:00	14:19:00		48.6	67.5	54.2	42.3
	14:20:00	14:20:00		53.3	70.4	57.1	45.5
	14:21:00	14:21:00		51.3	68.5	56.1	43.2
	14:22:00	14:22:00		46.7	64.5	50.1	42
	14:23:00	14:23:00		48.5	65.6	52	43.6
	14:24:00	14:24:00		53.7	71	57.7	48.6
	14:25:00	14:25:00		51.4	67.9	55.3	46.6
	14:26:00	14:26:00		59.5	83.4	67.8	48.8
	14:27:00	14:27:00		55	70.7	58.2	52
	14:28:00	14:28:00		54.9	69.9	57	52
	14:29:00	14:29:00		51.6	68.5	56.9	44
	14:30:00	14:30:00		47.6	64.3	49.4	44
	14:31:00	14:31:00		48.2	66.9	51.7	44.8
	14:32:00	14:32:00		49.3	68.9	55.7	43.8
	14:33:00	14:33:00		50.5	68.4	56.2	43.3
	14:34:00	14:34:00		53.1	70	56.5	47.6
	14:35:00	14:35:00		48.5	64.8	51.9	42.9
	14:36:00	14:36:00		49.1	68.3	52.2	46.1
	14:37:00	14:37:00		49	69.8	55.7	42.2
	14:38:00	14:38:00		52.2	69.9	56.9	46.8
	14:39:00	14:39:00		51.1	70.3	55.4	45.9
	14:40:00	14:40:00		49.5	66.3	52.6	42
	14:41:00	14:41:00		43.8	66.9	50.3	37.7
	14:42:00	14:42:00		44.8	63.6	49.4	37.2
	14:43:00	14:43:00		48.9	66.3	52.6	42
	14:44:00	14:44:00		49	66.9	53	43.5
	14:45:00	14:45:00		48.9	65.1	52.3	44.5
	14:46:00	14:46:00		47.6	68.6	54.6	42.2
	14:47:00	14:47:00		45.4	65.7	50.9	39.7
	14:48:00	14:48:00		48.1	67.3	54	40.4
	14:49:00	14:49:00		41.4	62.7	48.7	34.5
	14:50:00	14:50:00		48.6	69.2	56	34.9
	14:51:00	14:51:00		48.9	65.2	51.1	44.7
	14:52:00	14:52:00		45.8	64.7	51	38.7
	14:53:00	14:53:00		51	66.6	53.8	46.6
	14:54:00	14:54:00		46.2	62.5	50	38.9
	14:55:00	14:55:00		46.4	66.1	52.8	33.7
	14:56:00	14:56:00		47.3	66.1	53.9	37.3
	14:57:00	14:57:00		49.5	68.8	55.6	37.3
	14:58:00	14:58:00		49.3	68.3	53.2	44
	14:59:00	14:59:00		50.2	67.5	54.3	43.6
	15:00:00	15:00:00		46	67.8	52.1	39.9
	15:01:00	15:01:00		48.1	66.9	51.7	43.8
	15:02:00	15:02:00		48.8	65.2	52.6	45.2
	15:03:00	15:03:00		48.2	67.5	54	40.2
	15:04:00	15:04:00		49.1	67.9	55.4	42.6
	15:05:00	15:05:00		44.9	63.6	48.7	40.3
	15:06:00	15:06:00		42.8	68.5	47.8	36.7
	15:07:00	15:07:00		51	73	61.5	40
	15:08:00	15:08:00		55.5	75.7	65.5	48
	15:09:00	15:09:00		48.6	68.4	53.2	44
	15:10:00	15:10:00		48.3	68.5	54.3	39.1
	15:11:00	15:11:00		50.1	66.2	52.9	47.2
	15:12:00	15:12:00		45	65.3	50.9	35.9
	15:13:00	15:13:00		55.4	74.6	60.3	47.1
	15:14:00	15:14:00		46	65.7	51.5	36.3
	15:15:00	15:15:00		41.9	61.7	45.4	36.2
	15:16:00	15:16:00		52.1	71.3	58.9	38.7
	15:17:00	15:17:00		54.6	71.9	58.8	49.9
	15:18:00	15:18:00		49.7	67.5	54.5	42.5
	15:19:00	15:19:00		45.1	68.7	54	37.2
	15:20:00	15:20:00		47.8	68.6	53.9	42.3
	15:21:00	15:21:00		47.9	67.9	53.1	40.6
	15:22:00	15:22:00		45.3	69.3	54.1	37.4
	15:23:00	15:23:00		45.6	65.8	49.6	40.7

**Ambient Noise Data**

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	15:24:00	15:24:00		41	59.3	46.8	34.2
	15:25:00	15:25:00		44.5	65.1	51.5	36.2
	15:26:00	15:26:00		49.4	65.8	52.4	45.5
	15:27:00	15:27:00		46.6	65.2	50.3	40
	15:28:00	15:28:00		51.1	69.3	56.9	45.3
	15:29:00	15:29:00		50.4	68.4	54.9	47.5
	15:30:00	15:30:00		46.7	66.1	52.2	36.5
	15:31:00	15:31:00		47	65.2	52.2	42.7
	15:32:00	15:32:00		47	66	51.2	40.9
	15:33:00	15:33:00		51	70.2	55.8	45
	15:34:00	15:34:00		49.4	68.9	55.9	41.7
	15:35:00	15:35:00		49.1	67.3	54.2	45.2
	15:36:00	15:36:00		48.8	67	54.6	41.6
	15:37:00	15:37:00		47.2	62.9	49.8	44.9
	15:38:00	15:38:00		43.4	64.5	48.8	36.5
	15:39:00	15:39:00		45.3	67.3	53.7	37.5
	15:40:00	15:40:00		47.6	64.3	51.9	42.1
	15:41:00	15:41:00		41.5	58.7	45.4	35.1
	15:42:00	15:42:00		41.2	60.2	45.4	36.2
	15:43:00	15:43:00		45.7	63.3	49.9	38.7
	15:44:00	15:44:00		44.5	62.9	50.3	37.1
	15:45:00	15:45:00		47.7	64.5	51.5	41.9
	15:46:00	15:46:00		44	63.5	48.8	36.7
	15:47:00	15:47:00		44.8	63.5	50.5	38
	15:48:00	15:48:00		40.4	60.8	48.6	34.8
	15:49:00	15:49:00		48.4	68.4	54.5	41.4
	15:50:00	15:50:00		47.7	68.4	55	38.9
	15:51:00	15:51:00		47.3	64.5	51.3	42.1
	15:52:00	15:52:00		47.4	70.2	51.6	42
	15:53:00	15:53:00		47.6	64.1	50.9	41.6
	15:54:00	15:54:00		45	62.3	48.4	40.1
	15:55:00	15:55:00		48	64.7	52.3	44
	15:56:00	15:56:00		48.4	68.6	53.6	43.8
	15:57:00	15:57:00		43.4	67.6	49.1	37.6
	15:58:00	15:58:00		37.1	58.9	43.2	32.7
	15:59:00	15:59:00		46.7	62.8	49.6	41.5
	16:00:00	16:00:00		45.4	65.9	53	40.4
	16:01:00	16:01:00		45	62.1	49	38.4
	16:02:00	16:02:00		44.2	63.6	49.5	38.8
	16:03:00	16:03:00		47	65.1	51.3	41.5
	16:04:00	16:04:00		48.3	72.9	60	38.3
	16:05:00	16:05:00		49.5	76.9	60.7	34.2
	16:06:00	16:06:00		42.2	60.8	47.1	37.6
	16:07:00	16:07:00		38.9	60.2	45	34.6
	16:08:00	16:08:00		40.1	60.4	46.6	34.9
	16:09:00	16:09:00		41.9	63.8	47	36.1
	16:10:00	16:10:00		42.9	62.6	45.6	39.1
	16:11:00	16:11:00		44.5	70.6	53.9	34.9
	16:12:00	16:12:00		48.6	68	52.3	40.3
	16:13:00	16:13:00		41.1	63.1	48.9	36.1
	16:14:00	16:14:00		42.1	62.4	49.2	35.4
	16:15:00	16:15:00		45.7	63.1	49.3	40.1
	16:16:00	16:16:00		49.3	66.2	53.5	43
	16:17:00	16:17:00		50.5	66.7	53	47.5
	16:18:00	16:18:00		49.4	65	52.5	46.4
	16:19:00	16:19:00		45.4	63.8	49.6	39.8
	16:20:00	16:20:00		48.3	67.9	51.8	43.9
	16:21:00	16:21:00		49.5	64.2	51.9	46.9
	16:22:00	16:22:00		48.4	65.4	51.5	44.2
	16:23:00	16:23:00		48.1	64.8	51.4	42.6
	16:24:00	16:24:00		46.9	63.7	50.2	42.5
	16:25:00	16:25:00		56	79.5	65.6	43.8
	16:26:00	16:26:00		48.6	66.3	53.4	42.2
	16:27:00	16:27:00		51.7	67.2	55.4	47.4
	16:28:00	16:28:00		48.5	63.6	51.1	45.3
	16:29:00	16:29:00		47.6	66.5	51.5	41.8

## Ambient Noise Data

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	16:30:00	16:30:00		59.3	80.7	68.1	47.8
	16:31:00	16:31:00		47.8	70.6	51.9	45.1
	16:32:00	16:32:00		51.5	68.1	54.1	47.5
	16:33:00	16:33:00		51.2	71.1	57.6	44.8
	16:34:00	16:34:00		47.6	64.4	50.6	43.7
	16:35:00	16:35:00		52	72	59.1	43.7
	16:36:00	16:36:00		51.6	71.3	57.1	46.9
	16:37:00	16:37:00		48.5	73.3	57.9	39.8
	16:38:00	16:38:00		46.6	64.2	50.3	42.8
	16:39:00	16:39:00		45.8	60.4	48.3	42.8
	16:40:00	16:40:00		48.9	64.2	52.1	43.9
	16:41:00	16:41:00		48.9	65.7	52	45.4
	16:42:00	16:42:00		55.1	78	63.3	44.4
	16:43:00	16:43:00		46.9	62.2	48.3	45.2
	16:44:00	16:44:00		54.3	75.6	62.9	45.3
	16:45:00	16:45:00		48.4	65.3	51.9	44.6
	16:46:00	16:46:00		56.1	76.7	63.4	46.8
	16:47:00	16:47:00		53.4	71.3	57.7	47.2
	16:48:00	16:48:00		46.9	64.6	51.9	43.2
	16:49:00	16:49:00		57.2	77.9	63.9	48.4
	16:50:00	16:50:00		50.3	68.9	61	45.4
	16:51:00	16:51:00		53.9	73.1	58.6	45.8
	16:52:00	16:52:00		50	68	54.4	47.2
	16:53:00	16:53:00		48.8	64.4	52.3	44.7
	16:54:00	16:54:00		48.6	64.9	51.9	44.5
	16:55:00	16:55:00		48.9	65.8	53.3	43.4
	16:56:00	16:56:00		46.3	67	51.8	39.9
	16:57:00	16:57:00		51.7	69.8	55.9	44.7
	16:58:00	16:58:00		53.4	69.9	57.5	47.7
	16:59:00	16:59:00		53.3	69.4	57	47.9
	17:00:00	17:00:00		48.2	66.5	51.4	44.9
	17:01:00	17:01:00		55.7	83.4	63.7	47.8
	17:02:00	17:02:00		61.9	85.1	72.4	45.9
	17:03:00	17:03:00		54	76.6	68.1	42.4
	17:04:00	17:04:00		50.6	67	54	45.3
	17:05:00	17:05:00		52	67.6	55.2	48.3
	17:06:00	17:06:00		54.6	78	62.7	47.7
	17:07:00	17:07:00		51.7	70.7	57.3	47.1
	17:08:00	17:08:00		52.2	69.5	55.8	48.9
	17:09:00	17:09:00		52.9	71.5	57.2	48.7
	17:10:00	17:10:00		52.1	68	55.7	48.7
	17:11:00	17:11:00		57.2	77.3	64	53.1
	17:12:00	17:12:00		55.8	70.9	57.7	53.5
	17:13:00	17:13:00		53.6	70.4	56	51
	17:14:00	17:14:00		51.9	69.2	55.6	49.7
	17:15:00	17:15:00		61	83.6	70.4	51.4
	17:16:00	17:16:00		53.2	69.4	56.7	49.4
	17:17:00	17:17:00		55.4	76	62.9	50.7
	17:18:00	17:18:00		60.2	82.5	69.9	46
	17:19:00	17:19:00		51.9	67.6	55.2	47.1
	17:20:00	17:20:00		55.5	74.5	61	50.4
	17:21:00	17:21:00		52.3	69.1	55.7	50.1
	17:22:00	17:22:00		54.9	75.2	58.3	51
	17:23:00	17:23:00		54.6	69	56.2	52.7
	17:24:00	17:24:00		52.3	72	55	50
	17:25:00	17:25:00		53.7	70.9	57.3	51.5
	17:26:00	17:26:00		59.9	83.7	70.3	51.5
	17:27:00	17:27:00		57.8	78.2	67.8	51.9
	17:28:00	17:28:00		52.3	69.4	55.3	49.5
	17:29:00	17:29:00		54.3	69.9	57	50.9
	17:30:00	17:30:00		54.2	69.1	56.4	51
	17:31:00	17:31:00		53	68.9	55	50.9
	17:32:00	17:32:00		60.1	82.3	68.7	52.1
	17:33:00	17:33:00		57.5	85.9	64.5	53.2
	17:34:00	17:34:00		57	72.7	59.7	53.9
	17:35:00	17:35:00		53.8	69.3	56.2	51.6

## Ambient Noise Data

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	17:36:00	17:36:00		53.6	69.8	56.4	50.7
	17:37:00	17:37:00		54.4	71.8	56.8	51.2
	17:38:00	17:38:00		58.7	82.6	68.4	46.5
	17:39:00	17:39:00		60.5	86.1	70.3	48.3
	17:40:00	17:40:00		55.1	73.6	61	48.7
	17:41:00	17:41:00		55.3	72.6	57.9	51.4
	17:42:00	17:42:00		52	68.6	55.8	47.2
	17:43:00	17:43:00		52.1	69	56.4	45.9
	17:44:00	17:44:00		52.5	68.7	54.9	50.1
	17:45:00	17:45:00		52.6	67.5	55.1	49.2
	17:46:00	17:46:00		53.6	69.9	57	50.7
	17:47:00	17:47:00		52.6	68.6	55.7	50.6
	17:48:00	17:48:00		58.2	81.1	67.7	50.7
	17:49:00	17:49:00		57.5	78	66.6	53.3
	17:50:00	17:50:00		57	87.6	66.3	47.6
	17:51:00	17:51:00		50.7	71.7	54.5	47.4
	17:52:00	17:52:00		52.5	67.4	54.4	49.3
	17:53:00	17:53:00		55.9	77	60.8	53.5
	17:54:00	17:54:00		54.3	72.5	60	51.3
	17:55:00	17:55:00		57.5	77.8	64.7	52.9
	17:56:00	17:56:00		56.2	73.3	58.5	54.3
	17:57:00	17:57:00		54.5	73.5	57.9	52.9
	17:58:00	17:58:00		56	74	61.3	52.2
	17:59:00	17:59:00		56.3	74.3	61.1	52.1
	18:00:00	18:00:00		58.1	80.8	60.7	56.7
	18:01:00	18:01:00		58.2	82	61.2	56.2
	18:02:00	18:02:00		59.6	79.1	66	52.9
	18:03:00	18:03:00		55	71.5	57.6	52.9
	18:04:00	18:04:00		56.4	73.2	60.6	54.1
	18:05:00	18:05:00		58.2	75.3	62.1	54.5
	18:06:00	18:06:00		57.3	76.7	62.4	52.9
	18:07:00	18:07:00		58.8	78.1	62.9	55.7
	18:08:00	18:08:00		60.5	80.8	66.1	54.7
	18:09:00	18:09:00		56.7	71.2	59.3	55
	18:10:00	18:10:00		57.6	75.4	62.6	54.5
	18:11:00	18:11:00		57.9	78.4	63.5	54.1
	18:12:00	18:12:00		57.9	73.4	60.5	54.6
	18:13:00	18:13:00		58.3	75	60.7	54.6
	18:14:00	18:14:00		58.3	74.4	60.6	55.8
	18:15:00	18:15:00		58.1	73	60.1	56.7
	18:16:00	18:16:00		60.6	82.8	69	55.3
	18:17:00	18:17:00		60.6	80.7	64.7	55.9
	18:18:00	18:18:00		58.9	79.6	66.3	55.1
	18:19:00	18:19:00		63.8	82.5	70.3	56.7
	18:20:00	18:20:00		59.7	79.5	63.5	56.8
	18:21:00	18:21:00		59.7	80.2	67.4	54.1
	18:22:00	18:22:00		58.8	80	63.7	55.3
	18:23:00	18:23:00		60.2	77.1	64.1	57.3
	18:24:00	18:24:00		60.7	78.3	65.2	57.9
	18:25:00	18:25:00		59.1	74.1	61.2	56.6
	18:26:00	18:26:00		61.2	78.6	66.1	55.6
	18:27:00	18:27:00		61.4	85.6	69.1	57.9
	18:28:00	18:28:00		58.2	73.4	60.5	56.6
	18:29:00	18:29:00		58.1	72.1	60.4	56.7
	18:30:00	18:30:00		58.9	75.2	61.4	56.7
	18:31:00	18:31:00		58.6	74.4	61.4	56.2
	18:32:00	18:32:00		61.1	76.5	64	59.8
	18:33:00	18:33:00		60	79.8	64.4	57.8
	18:34:00	18:34:00		60.6	76.3	63.7	57.2
	18:35:00	18:35:00		59.6	79.5	64.6	57.6
	18:36:00	18:36:00		62	79.1	66.3	58
	18:37:00	18:37:00		58	72.4	59.4	55.9
	18:38:00	18:38:00		56.6	71.1	58.4	54.7
	18:39:00	18:39:00		59.2	78.7	65	55.4
	18:40:00	18:40:00		59.4	77.4	62.3	56.5
	18:41:00	18:41:00		60.3	77.5	64.7	56.3

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	18:42:00	18:42:00		60.5	81.4	66.6	56.8
	18:43:00	18:43:00		60.9	76.4	63.3	58.7
	18:44:00	18:44:00		59.7	76.7	63.4	56.1
	18:45:00	18:45:00		62.1	80	67.1	58.9
	18:46:00	18:46:00		59.6	74.8	61.4	57.8
	18:47:00	18:47:00		61.9	79.5	67	58.8
	18:48:00	18:48:00		62	76.4	63.6	59.6
	18:49:00	18:49:00		61.9	78.6	65.2	58.1
	18:50:00	18:50:00		64.3	83	70.3	61
	18:51:00	18:51:00		63.5	80.3	68.2	59.8
	18:52:00	18:52:00		59.8	73.7	61.7	57.8
	18:53:00	18:53:00		63.8	85.6	70	59.8
	18:54:00	18:54:00		61	84.5	67.3	56.7
	18:55:00	18:55:00		63.7	81.9	68.4	60.3
	18:56:00	18:56:00		62.4	80.8	66.7	59.6
	18:57:00	18:57:00		64.8	85	70.4	60.2
	18:58:00	18:58:00		62.5	81	68.5	60.2
	18:59:00	18:59:00		64.5	84.4	69.5	60.2
	19:00:00	19:00:00		63.3	82.5	67.2	61.4
	19:01:00	19:01:00		62.8	81.9	66.5	60.4
	19:02:00	19:02:00		64.4	83.2	68.4	62.1
	19:03:00	19:03:00		64.2	86.5	68.6	62.7
	19:04:00	19:04:00		64.4	79.4	66.1	62.6
	19:05:00	19:05:00		64.8	85.8	71.9	61.5
	19:06:00	19:06:00		64.1	85.3	70.9	59.7
	19:07:00	19:07:00		62.2	78.7	65.7	59.8
	19:08:00	19:08:00		62.4	77.8	64.6	59.8
	19:09:00	19:09:00		65.2	86.6	69.8	62.3
	19:10:00	19:10:00		62.4	77.3	66.5	60.8
	19:11:00	19:11:00		63.7	82.8	69.4	61.2
	19:12:00	19:12:00		62.7	77.3	64.2	61.1
	19:13:00	19:13:00		63.8	97.1	71.3	58.7
	19:14:00	19:14:00		62.4	79.4	66.5	59.2
	19:15:00	19:15:00		63.9	80.7	67.5	59.3
	19:16:00	19:16:00		63.4	78.3	65.4	61.5
	19:17:00	19:17:00		63.9	79.6	65.6	61.5
	19:18:00	19:18:00		63.2	86.8	69.8	60.3
	19:19:00	19:19:00		64.2	79.6	66.6	61.5
	19:20:00	19:20:00		62.5	80.6	65.8	59.7
	19:21:00	19:21:00		62.4	78.7	66.1	59.9
	19:22:00	19:22:00		62.6	77.7	64.4	60.6
	19:23:00	19:23:00		62.6	78	64.4	60.6
	19:24:00	19:24:00		62.9	78.7	65.6	59.2
	19:25:00	19:25:00		64.2	84.9	69.7	60.4
	19:26:00	19:26:00		62.3	76.9	63.9	60.5
	19:27:00	19:27:00		61.9	81.5	68.2	59.6
	19:28:00	19:28:00		67	86.6	70.7	64.4
	19:29:00	19:29:00		63.9	79.8	66.3	62.4
	19:30:00	19:30:00		62.7	78.5	66	60.3
	19:31:00	19:31:00		63.9	83.9	67.9	61.8
	19:32:00	19:32:00		64.8	86.1	69.4	61.7
	19:33:00	19:33:00		65	88.8	70.1	62.1
	19:34:00	19:34:00		61.9	78	64.4	60.1
	19:35:00	19:35:00		61.4	75.4	62.6	60
	19:36:00	19:36:00		62.7	80.9	67.3	61.2
	19:37:00	19:37:00		59.7	79.3	66.9	57
	19:38:00	19:38:00		62.8	86.1	73.7	57.1
	19:39:00	19:39:00		64.6	85.4	72.2	59.7
	19:40:00	19:40:00		66.5	93.6	78.1	60.1
	19:41:00	19:41:00		61.7	80	65.8	59.8
	19:42:00	19:42:00		61.4	76.3	63.4	59.6
	19:43:00	19:43:00		62.7	91.2	73.4	57.8
	19:44:00	19:44:00		62.5	79.3	67.1	59
	19:45:00	19:45:00		63.3	81.9	67	60.2
	19:46:00	19:46:00		61	82.9	64.9	57.6
	19:47:00	19:47:00		63.8	91.1	72.6	57.8

## Ambient Noise Data

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	19:48:00	19:48:00		60.6	76.3	63.3	59.2
	19:49:00	19:49:00		62.4	82.4	68	59.2
	19:50:00	19:50:00		61.5	76.4	63.3	60.3
	19:51:00	19:51:00		65.7	84.6	72.2	60.8
	19:52:00	19:52:00		64.4	84.2	69.8	60.8
	19:53:00	19:53:00		64.2	84.1	69.1	60.6
	19:54:00	19:54:00		64.4	82.6	69.5	61.6
	19:55:00	19:55:00		63.5	84.6	69.3	59.7
	19:56:00	19:56:00		59	75.5	61.3	57.6
	19:57:00	19:57:00		62.7	84.6	71.6	57.8
	19:58:00	19:58:00		61.7	85	68.6	57.6
	19:59:00	19:59:00		62.6	80.8	67.1	58
	20:00:00	20:00:00		59.6	79.7	65.4	57.3
	20:01:00	20:01:00		58.5	74.7	63.1	56.6
	20:02:00	20:02:00		58.9	75.9	60.6	57.1
	20:03:00	20:03:00		59.8	76.9	63.5	57.1
	20:04:00	20:04:00		66.8	102.2	77.6	57.6
	20:05:00	20:05:00		62.3	80.8	68	56.5
	20:06:00	20:06:00		56.8	71.3	57.7	55.4
	20:07:00	20:07:00		62.3	82.9	68.1	56.7
	20:08:00	20:08:00		60.5	80	66.3	57.8
	20:09:00	20:09:00		62.9	92.7	74.5	57.7
	20:10:00	20:10:00		59.8	75.4	61.4	57.7
	20:11:00	20:11:00		63.2	85.8	68.7	59.4
	20:12:00	20:12:00		62.8	81.5	68.1	59.3
	20:13:00	20:13:00		61.5	80.1	66.8	57.7
	20:14:00	20:14:00		60.6	87.8	68.2	57.2
	20:15:00	20:15:00		58	73.3	59.2	57
	20:16:00	20:16:00		58.8	74.6	61.6	57.1
	20:17:00	20:17:00		59.3	79.2	63.4	57.2
	20:18:00	20:18:00		63.1	83.3	69.4	56.6
	20:19:00	20:19:00		61.1	80.7	65	56.8
	20:20:00	20:20:00		63.7	88.1	70.4	56.1
	20:21:00	20:21:00		61.6	81.5	67.9	55.2
	20:22:00	20:22:00		59.1	79.7	65.3	54.4
	20:23:00	20:23:00		57.3	79.9	65.3	54
	20:24:00	20:24:00		58.9	83.9	66.5	54.5
	20:25:00	20:25:00		60.5	80.9	68.7	54.7
	20:26:00	20:26:00		61.2	87.1	69.1	55.4
	20:27:00	20:27:00		56.4	75.1	60.6	54.2
	20:28:00	20:28:00		54.9	78.5	59.2	54.1
	20:29:00	20:29:00		58.1	79.5	64.6	54.5
	20:30:00	20:30:00		58.1	77.4	64	54.7
	20:31:00	20:31:00		56.5	76.7	63.4	53.6
	20:32:00	20:32:00		55.9	76.4	62.8	54
	20:33:00	20:33:00		58.8	80.4	65.7	53.2
	20:34:00	20:34:00		55.7	74	57.6	54.1
	20:35:00	20:35:00		59	83.6	65.8	56.1
	20:36:00	20:36:00		61.6	78.8	66.1	58.5
	20:37:00	20:37:00		62.6	81.4	68.5	55.9
	20:38:00	20:38:00		60.4	84.2	69.3	54.2
	20:39:00	20:39:00		59.5	77.7	64.2	55.2
	20:40:00	20:40:00		59.9	78.7	65.5	54.1
	20:41:00	20:41:00		55.8	83.8	63.7	52.8
	20:42:00	20:42:00		56.6	78.1	64.9	53.6
	20:43:00	20:43:00		60.2	79.5	65.7	53.7
	20:44:00	20:44:00		54.6	69.4	56.2	52.7
	20:45:00	20:45:00		56.3	75.2	62.2	53.1
	20:46:00	20:46:00		61.9	82	70	53.6
	20:47:00	20:47:00		55.5	73.9	58.1	53.5
	20:48:00	20:48:00		61.8	87.7	69.7	53.3
	20:49:00	20:49:00		62	81.6	69.2	56.6
	20:50:00	20:50:00		59.3	77.2	64.1	54.8
	20:51:00	20:51:00		60.5	84.3	68.6	53.9
	20:52:00	20:52:00		56	75.8	62	52.7
	20:53:00	20:53:00		61.2	86.9	67.9	52.8

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	20:54:00	20:54:00		56.8	77.6	65.9	51.6
	20:55:00	20:55:00		56.5	75.2	63	51.1
	20:56:00	20:56:00		55.9	79.8	64.9	51.8
	20:57:00	20:57:00		51.9	66.9	53.7	50.1
	20:58:00	20:58:00		59	81.6	68.1	50.8
	20:59:00	20:59:00		61.2	83.1	69.8	52
	21:00:00	21:00:00		61.5	81.8	68.6	52.9
	21:01:00	21:01:00		57.7	78.5	65.4	51
	21:02:00	21:02:00		59.1	86.1	69.6	51.1
	21:03:00	21:03:00		51.9	67.9	55.1	49.8
	21:04:00	21:04:00		52.9	73.4	60	50.1
	21:05:00	21:05:00		55.4	81.6	65	50
	21:06:00	21:06:00		53.7	76.3	60	49.2
	21:07:00	21:07:00		58	81	66.6	49.1
	21:08:00	21:08:00		50.6	67	53.1	48.7
	21:09:00	21:09:00		56.5	79.7	64.5	49.5
	21:10:00	21:10:00		56.9	80.7	63.8	50.5
	21:11:00	21:11:00		54	73.2	60.7	50.4
	21:12:00	21:12:00		60.3	80.1	68.1	50.1
	21:13:00	21:13:00		53	68.1	55.5	51.3
	21:14:00	21:14:00		57.8	78.7	65.8	51.8
	21:15:00	21:15:00		59.8	81.6	65.2	52.4
	21:16:00	21:16:00		57.5	78.1	63.6	49.7
	21:17:00	21:17:00		53.1	73.4	58.2	50.4
	21:18:00	21:18:00		64.8	87.8	74.7	49.8
	21:19:00	21:19:00		61.3	82.7	73.8	50.3
	21:20:00	21:20:00		60.2	85.3	66.7	50
	21:21:00	21:21:00		58.8	85.5	70.9	52.1
	21:22:00	21:22:00		51.3	70.7	53	49.4
	21:23:00	21:23:00		54.9	74.9	60.3	49.8
	21:24:00	21:24:00		59.9	81.4	68.4	49.7
	21:25:00	21:25:00		50.4	67.3	52.9	49.1
	21:26:00	21:26:00		59.1	80.9	65.9	50.3
	21:27:00	21:27:00		53	73.6	60.7	48.3
	21:28:00	21:28:00		50.4	66.7	51.8	49
	21:29:00	21:29:00		56.6	78.9	64.2	48.4
	21:30:00	21:30:00		56.2	78.7	64	49.2
	21:31:00	21:31:00		55.8	77.3	62.7	48.3
	21:32:00	21:32:00		57.3	79.4	66.4	47.6
	21:33:00	21:33:00		60.3	82	68.8	46.7
	21:34:00	21:34:00		61.5	86.1	69.6	51.8
	21:35:00	21:35:00		60	82.4	68.8	50.3
	21:36:00	21:36:00		61.2	84.1	71.1	45.4
	21:37:00	21:37:00		52.2	75.7	61.3	45.5
	21:38:00	21:38:00		58.5	78.9	66	47.5
	21:39:00	21:39:00		54.2	78	63.6	46.3
	21:40:00	21:40:00		55.4	79.9	64.4	46
	21:41:00	21:41:00		54.1	74.6	60	46.5
	21:42:00	21:42:00		56.5	76.5	63.8	46.8
	21:43:00	21:43:00		57.1	78.1	65.5	48.1
	21:44:00	21:44:00		54.9	75.6	62.8	46.4
	21:45:00	21:45:00		62.2	82.9	70.7	46.7
	21:46:00	21:46:00		54.8	75	62	46.9
	21:47:00	21:47:00		46.2	60.2	47.8	44.7
	21:48:00	21:48:00		50.3	74.5	58	45.8
	21:49:00	21:49:00		56.2	75.8	62.9	46.8
	21:50:00	21:50:00		54	76.2	63.2	45.8
	21:51:00	21:51:00		60	83.3	67.5	46.9
	21:52:00	21:52:00		58.7	79.8	67.2	45.7
	21:53:00	21:53:00		46.2	85.6	53.5	44.3
	21:54:00	21:54:00		58.8	84.2	68.3	45.1
	21:55:00	21:55:00		60.6	80	67	48.5
	21:56:00	21:56:00		53.4	76.6	61.3	47.5
	21:57:00	21:57:00		57.1	83	65.7	47.7
	21:58:00	21:58:00		53.2	75.3	59.7	47.4
	21:59:00	21:59:00		55.5	73.7	59.6	47.1

## Ambient Noise Data

Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	22:00:00	22:00:00		51.4	72.7	58.5	46.5
	22:01:00	22:01:00		47.4	63.5	49.9	46.3
	22:02:00	22:02:00		50.1	68.7	55.5	46.6
	22:03:00	22:03:00		58.1	78.8	65.9	46.4
	22:04:00	22:04:00		59.8	83.1	68.6	49.6
	22:05:00	22:05:00		55.1	76.3	62	48.7
	22:06:00	22:06:00		57.1	78.9	65.3	48.5
	22:07:00	22:07:00		55.7	72.6	60	50.3
	22:08:00	22:08:00		52.5	73.4	58.5	46.8
	22:09:00	22:09:00		58.7	81	68.4	45.5
	22:10:00	22:10:00		49.4	68.8	54.7	47.8
	22:11:00	22:11:00		55.9	84.1	66	47.9
	22:12:00	22:12:00		57.9	79.7	65.7	50.4
	22:13:00	22:13:00		56.2	80.3	63.5	51.6
	22:14:00	22:14:00		56.4	73.3	61.4	51.5
	22:15:00	22:15:00		53	73.9	58.9	49.3
	22:16:00	22:16:00		63.3	83.4	68.8	51.6
	22:17:00	22:17:00		58.5	81.4	67.7	49
	22:18:00	22:18:00		55.3	77.6	62	45.7
	22:19:00	22:19:00		47.6	67.8	51.2	46.2
	22:20:00	22:20:00		55.5	79.4	65.7	45.6
	22:21:00	22:21:00		59.2	79.6	67.1	47
	22:22:00	22:22:00		59.4	85.4	70	46.5
	22:23:00	22:23:00		57.8	80.1	65.6	47.9
	22:24:00	22:24:00		54.3	80.1	64.8	47.8
	22:25:00	22:25:00		54.3	73.1	60.4	47.7
	22:26:00	22:26:00		56.7	83	65.5	47
	22:27:00	22:27:00		52	76.1	62.1	48.5
	22:28:00	22:28:00		53.9	77	63	47.7
	22:29:00	22:29:00		52.5	74	60.6	46.3
	22:30:00	22:30:00		56	74.2	61.2	49.1
	22:31:00	22:31:00		55.1	78.3	62.1	48.7
	22:32:00	22:32:00		57.3	76.7	65	48.1
	22:33:00	22:33:00		58.6	78.7	66.8	48.1
	22:34:00	22:34:00		59.8	80	69.1	49.6
	22:35:00	22:35:00		50.4	69.9	56.2	47.7
	22:36:00	22:36:00		58.5	77.6	63.9	49.3
	22:37:00	22:37:00		61.7	83.2	68.8	48.4
	22:38:00	22:38:00		50.3	72.1	56.4	47
	22:39:00	22:39:00		52.6	72.8	58.9	44.5
	22:40:00	22:40:00		49.5	67.1	54	45.5
	22:41:00	22:41:00		57.4	78	64.4	44.5
	22:42:00	22:42:00		53.1	73.7	59.7	43.5
	22:43:00	22:43:00		56.2	84.3	66.4	50.6
	22:44:00	22:44:00		56.6	79.4	65	48.1
	22:45:00	22:45:00		55.5	76.8	61.2	49.5
	22:46:00	22:46:00		48.6	66.9	54.7	44.5
	22:47:00	22:47:00		60.9	89.2	70.9	45.8
	22:48:00	22:48:00		60	82.7	69.2	45.8
	22:49:00	22:49:00		53.1	77.5	62	45.8
	22:50:00	22:50:00		59.9	83.9	67.1	46.3
	22:51:00	22:51:00		53.5	70.8	57.5	48.8
	22:52:00	22:52:00		52	84.3	63.5	48.2
	22:53:00	22:53:00		59.1	81.8	67	48.9
	22:54:00	22:54:00		58.3	80.5	66.2	48.5
	22:55:00	22:55:00		52.9	85	65.3	47.9
	22:56:00	22:56:00		59.3	81.4	68	47.9
	22:57:00	22:57:00		54.3	80.6	62.9	48.5
	22:58:00	22:58:00		52.1	80	61.6	48.6
	22:59:00	22:59:00		61.1	80.4	67.3	50
	23:00:00	23:00:00		55.6	80.6 <sup>4</sup>	66.6	49.6
	23:01:00	23:01:00		57.9	81.4	67.5	50.4
	23:02:00	23:02:00		55.4	81.2	63.6	48.8
	23:03:00	23:03:00		57.9	85.7	67	48.8
	23:04:00	23:04:00		56.1	75.9	62.6	50.3
	23:05:00	23:05:00		55.6	75.5	62.2	49.8

## Receptor 2 (R2)

Study	Study Time	Session Time	OL Status	Lavg Meter1	Lpk Meter1	Lmax Meter1	Lmin Meter1
	23:06:00	23:06:00		60.7	81.6	68.3	53.5
	23:07:00	23:07:00		57.9	82.7	66.4	48.8
	23:08:00	23:08:00		58.1	83.5	66.7	49.8
	23:09:00	23:09:00		60.5	82.5	65.8	56.4
	23:10:00	23:10:00		61.8	81.2	66.2	49.6
	23:11:00	23:11:00		57.8	78.2	65.4	48.3
	23:12:00	23:12:00		55.4	77.3	64.5	44.7
	23:13:00	23:13:00		52	75	61	44.9
	23:14:00	23:14:00		56.2	83.3	66.4	45
	23:15:00	23:15:00		56.2	78.3	65.4	47.6
	23:16:00	23:16:00		50.7	71	58.3	46
	23:17:00	23:17:00		47.7	63.1	48.8	46.5
	23:18:00	23:18:00		50.4	72.9	59	45
	23:19:00	23:19:00		54.9	80.9	64.2	45.4
	23:20:00	23:20:00		59.6	80.5	67.8	47.6
	23:21:00	23:21:00		57.9	79.2	64.5	48.1
	23:22:00	23:22:00		59.4	82.2	66.4	51.7
	23:23:00	23:23:00		60.4	81.2	65.3	51.3
	23:24:00	23:24:00		58.4	79.3	63.5	49.9
	23:25:00	23:25:00		58.8	81.6	66.5	50.2
	23:26:00	23:26:00		51.5	72.7	58.7	46.5
	23:27:00	23:27:00		59.9	79.4	65.7	46.6
	23:28:00	23:28:00		59	80.8	67.4	45.7
	23:29:00	23:29:00		56.2	76.7	61.9	49.8
	23:30:00	23:30:00		51.4	72.9	59.6	46.5
	23:31:00	23:31:00		62.6	84.8	72.1	46.8
	23:32:00	23:32:00		60.1	82.3	68.5	44.3
	23:33:00	23:33:00		52.1	71.4	58.9	44.2
	23:34:00	23:34:00		59.2	81.9	68.3	47.8
	23:35:00	23:35:00		53.9	74.8	61.9	46.3
	23:36:00	23:36:00		57.7	80	63.1	48.7
	23:37:00	23:37:00		60.4	80.8	68.4	47.2
	23:38:00	23:38:00		51.1	69.9	56.1	46.9
	23:39:00	23:39:00		64.1	86.2	73.5	44.9
	23:40:00	23:40:00		59	80.9	67.2	45.5
	23:41:00	23:41:00		54.6	76.2	60.3	47.7
	23:42:00	23:42:00		51.4	71.7	56.7	47.8
	23:43:00	23:43:00		56.5	79.7	66.1	48.2
	23:44:00	23:44:00		60.1	83.5	69.7	50
	23:45:00	23:45:00		55.3	80.3	63.6	49
	23:46:00	23:46:00		63	88.7	72	52.8
	23:47:00	23:47:00		57.7	82.5	65.7	52.2
	23:48:00	23:48:00		55.4	73.2	59.4	51.7
	23:49:00	23:49:00		56.3	75.5	60.9	51.9
	23:50:00	23:50:00		52.5	70.1	56.4	49.1
	23:51:00	23:51:00		56.7	73.6	63.9	49.7
	23:52:00	23:52:00		57.4	83	66.6	49.9
	23:53:00	23:53:00		55.7	76.4	63.2	51.4
	23:54:00	23:54:00		60	86.8	68.9	52
	23:55:00	23:55:00		55.6	77.5	62.1	50.5
	23:56:00	23:56:00		59.9	86.3	70.3	48.4
	23:57:00	23:57:00		56.8	84.4	66.3	49.3
	23:58:00	23:58:00		55.2	82	63.7	50.4
	23:59:00	23:59:00		54.9	86.1	61	50.9
	24:00:00	24:00:00		70.1	104.5	82.7	52.7

Ambient Noise Measurement Summary (24-Hours)									
Receptor	Dates	Time Start	Time Stop	Average Noise Level ( $L_{eq}$ )			Peak Noise Level ( $L_{max}$ )		
				Daytime <sup>A</sup>	Evening <sup>A</sup>	Nighttime <sup>A</sup>	Daytime <sup>A</sup>	Evening <sup>A</sup>	Nighttime <sup>A</sup>
R1	4/12/2017 - 4/13/2017	10:05 AM	10:05 AM	54.7	53.8	52.2	58.3	54.3	53.4
R2	4/13/2017 - 4/14/2017	10:16 AM	10:16 AM	58.2	54.7	52.2	63.5	56.2	58.6
R3 <sup>C</sup>	4/12/2017 - 4/13/2017	10:05 AM	10:05 AM	54.7	53.8	52.2	58.3	54.3	53.4

Note: Ambient peak noise levels ( $L_{max}$ ) are shown for informational purposes only, and not utilized to determine significance thresholds.

Applicable Ventura County Significance Thresholds							
Receptor	Receptor Type	Average Noise Level ( $L_{eq}$ )			Ventura County Thresholds ( $L_{eq}$ ) <sup>B</sup>		
		Daytime <sup>A</sup>	Evening <sup>A</sup>	Nighttime <sup>A</sup>	Daytime <sup>A</sup>	Evening <sup>A</sup>	Nighttime <sup>A</sup>
R1	Residential	54.7	53.8	52.2	55.0	56.8	55.2
R2	Residential	58.2	54.7	52.2	61.2	57.7	55.2
R3 <sup>C</sup>	Residential	54.7	53.8	52.2	55.0	56.8	55.2

**Footnotes:**

A - Timeframes shown are from the Ventura County *General Plan Noise Element*. Daytime = 6:00 AM-7:00 PM. Evening = 7:00 PM-10:00 PM. Nighttime = 10:00 PM-6:00 AM.

B - The Ventura County *General Plan Noise Element* presents significance thresholds for daytime, evening, and nighttime. Per Ventura County guidance, significance thresholds depend on the existing ambient noise levels in the Project area during the defined time period. If ambient noise levels are lower than the thresholds, the "fixed" thresholds are utilized. If ambient noise levels exceed the fixed thresholds, the "ambient level +3 decibels (dB)" is utilized. The significance thresholds are summarized below:

-Daytime (6:00 AM-7:00 PM) =  $L_{eq}$  of 55 dBA or ambient noise level +3 dBA

-Evening (7:00 PM-10:00 PM) =  $L_{eq}$  of 50 dBA or ambient noise level +3 dBA

-Nighttime (10:00 PM-6:00 AM) =  $L_{eq}$  of 45 dBA or ambient noise level +3 dBA

Daytime and evening ambient noise levels shown for informational purposes, as only nighttime noise impacts were assessed within this NIA.

C - Ambient noise levels recorded near R1 are also used to represent ambient noise levels at R3.

## **APPENDIX D**

### **SOURCE NOISE CHARACTERIZATION & NIGHTTIME NOISE IMPACTS**

## General Site Noise Sources

Noise Monitoring Results - Patriot Anaheim Facility

Start Time                    13:10:46    24-Apr-2017  
Run Length                    0:05:00        19200

Microphone Information		
Description	Units	Value
Sensitivity	dB	29
Polarization	Volts	0
Meter Range	dB	110
Max Level	dB	140
Meas. Floor	dB	-20

Configuration Information			
Description	Units	Meter 1	Meter 2
Integration Threshold	dB	OFF	OFF
Exchange Rate	dB	3	3
Criterion Level	dB	90	90
Upper Limit Level	dB	140	140
Projected Time	Hrs	1	1
Weighting		A	A
Time Response		SLOW	SLOW

Sound Curve Configuration	
Description	Value
Mode	OFF
Type	Noise Criterion (NC)
Criterion	NA
Method	Tangency

Measurement	Units	Meter 1 Broadband	Meter 2 Broadband	12.5 Hz	16 Hz	20 Hz	25 Hz	31.5 Hz	40 Hz	50 Hz	63 Hz
Lavg	dB	67.2	67.2	3.9	8.3	14.5	20.1	25.6	26.7	53.5	41.7
Lmax	dB	72.4	72.4	13.6	14.8	24.3	27.1	34.2	36.6	54.1	44.9
Lmin	dB	65.9	65.8	-1.7	0.8	7.3	14.8	18.3	21.8	53	40.9
Lpk	dB	89.3	89.2	20.9	23.7	34	35.9	41.1	45.5	58.4	53.4
TWA	dB	47.4	47.4	-15.8	-11.4	-5.2	0.3	5.7	6.9	33.6	21.9
PTWA	dB	58.2	58.2	-5	-0.6	5.5	11.1	16.5	17.7	44.4	32.7
DOSE	%	0.01	0.01	0	0	0	0	0	0	0	0
PDOSE	%	0.07	0.07	0	0	0	0	0	0	0	0
SEL	dB	92	92	28.7	33.1	39.3	44.9	50.3	51.5	78.2	66.5
EXP	p2s	1	1	0	0	0	0	0	0	0	0

# General Site Noise Sources

## Noise Monitoring Results - Patriot Anaheim Facility

Measurement	Units	Value
LDN	dB	67.2
CNEL	dB	67.2
TAKTMAX (5sec)	dB	N/A
LC-A	dB	N/A

		Meter 1			Meter 2		
		Count	Percent	Time	Count	Percent	Time
Overload	(OL)	0	0	00:00:00	0	0	00:00:00
Under-Range	(UR)	0	0	00:00:00	0	0	00:00:00
Upper Limit	(UL)	0	0	00:00:00	0	0	00:00:00

Exceedence Table

	0	1	2	3	4	5	6	7	8	9
0	72.4	70.4	69.5	69.3	69.2	69	68.9	68.8	68.7	68.6
10	68.5	68.4	68.2	68.1	68.1	68	67.9	67.9	67.8	67.8
20	67.7	67.7	67.6	67.6	67.5	67.5	67.4	67.4	67.3	67.3
30	67.3	67.2	67.2	67.2	67.1	67.1	67.1	67	67	67
40	67	66.9	66.9	66.9	66.9	66.9	66.8	66.8	66.8	66.8
50	66.8	66.7	66.7	66.7	66.7	66.6	66.6	66.6	66.6	66.5
60	66.5	66.5	66.5	66.4	66.4	66.4	66.4	66.4	66.3	66.3
70	66.3	66.3	66.3	66.3	66.3	66.2	66.2	66.2	66.2	66.2
80	66.2	66.2	66.2	66.1	66.1	66.1	66.1	66.1	66.1	66
90	66	66	66	66	66	66	65.9	65.9	65.9	65.9

**Mixing Tanks**

## Noise Monitoring Results - Patriot Anaheim Facility

Start Time 13:04:33 24-Apr-2017  
Run Length 0:05:00 19200

Microphone Information		
Description	Units	Value
Sensitivity	dB	29
Polarization	Volts	0
Meter Range	dB	110
Max Level	dB	140
Meas. Floor	dB	-20

Configuration Information			
Description	Units	Meter 1	Meter 2
Integration Threshold	dB	OFF	OFF
Exchange Rate	dB	3	3
Criterion Level	dB	90	90
Upper Limit Level	dB	140	140
Projected Time	Hrs	1	1
Weighting		A	A
Time Response		SLOW	SLOW

Sound Curve Configuration	
Description	Value
Mode	OFF
Type	Noise Criterion (NC)
Criterion	NA
Method	Tangency

Measurement	Units	Meter 1 Broadband	Meter 2 Broadband	12.5 Hz	16 Hz	20 Hz	25 Hz	31.5 Hz	40 Hz	50 Hz	63 Hz
Lavg	dB	74.9	74.9	5.2	8.9	14.6	21.1	24.9	28.7	40.6	40
Lmax	dB	76.1	76.1	17	22.9	21.9	29.4	36.6	37.3	42.9	54.7
Lmin	dB	74.1	74.1	-1.4	0.9	8	16.1	18.9	22.2	38.5	33.7
Lpk	dB	98	97.9	24.5	32.1	30.9	38.4	45.3	47.9	49.3	62.1
TWA	dB	55.1	55	-14.6	-10.8	-5.1	1.2	5.1	8.8	20.8	20.2
PTWA	dB	65.9	65.8	-3.8	0	5.6	12	15.8	19.6	31.5	31
DOSE	%	0.03	0.03	0	0	0	0	0	0	0	0
PDOSE	%	0.39	0.38	0	0	0	0	0	0	0	0
SEL	dB	99.7	99.6	29.9	33.7	39.4	45.8	49.6	53.4	65.3	64.8
EXP	p2s	4	4	0	0	0	0	0	0	0	0

**Mixing Tanks**

## Noise Monitoring Results - Patriot Anaheim Facility

Measurement	Units	Value
LDN	dB	74.9
CNEL	dB	74.9
TAKTMAX (5sec)	dB	N/A
LC-A	dB	N/A

		Meter 1			Meter 2		
		Count	Percent	Time	Count	Percent	Time
Overload	(OL)	0	0	00:00:00	0	0	00:00:00
Under-Range	(UR)	0	0	00:00:00	0	0	00:00:00
Upper Limit	(UL)	0	0	00:00:00	0	0	00:00:00

Exceedence Table

	0	1	2	3	4	5	6	7	8	9
0	76.1	75.6	75.4	75.3	75.2	75.2	75.2	75.1	75.1	75.1
10	75.1	75.1	75	75	75	75	75	75	75	75
20	75	75	75	74.9	74.9	74.9	74.9	74.9	74.9	74.9
30	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9
40	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8
50	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8
60	74.8	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7
70	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.6
80	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.5
90	74.5	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.4	74.2

## Noise Monitoring Results - Anterra's Oxnard Facility

Serial Number                   BIJ090010  
 Start Time                    12:43:05   20-Mar-2012  
 Run Length                   0:18:26     70784

UNIT REV                   R13B

Microphone Information		
Description	Units	Value
Sensitivity	dB	29
Polarization	Volts	0
Meter Range	dB	120
Max Level	dB	140
Meas. Floor	dB	-20

Calibration Information		
Description	Units	Value
Pre-Cal Level	dB	114
Pre-Cal Date		12:42:31 20-Mar-2012
Post-Cal Level	dB	
Post-Cal Date		
ReCert Date		Unavailable

Configuration Information			
Description	Units	Meter 1	Meter 2
Integration Threshold	dB	OFF	OFF
Exchange Rate	dB	3	3
Criterion Level	dB	90	90
Upper Limit Level	dB	130	130
Projected Time	Hrs	8	8
Weighting		A	C
Time Response		SLOW	SLOW

Measurement	Units	Meter 1 Broadband	Meter 2 Broadband	12.5 Hz	16 Hz	20 Hz	25 Hz	31.5 Hz	40 Hz	50 Hz	63 Hz
Lavg	dB	72	80.9	8.6	10.1	12.9	24.2	36.1	34.4	44.6	47
Lmax	dB	79.9	90.7	13.9	22.3	28.5	34.8	41.2	49.7	59.9	62.2
Lmin	dB	69.9	77.8	5.2	5.2	6	19.9	30.2	24.8	36	35.7
Lpk	dB	101.1	100.3	22.2	28.7	36.6	45.9	50.6	55.8	65.6	69.7
TWA	dB	57.9	66.8	-5.4	-4	-1.1	10.1	21.9	20.2	30.4	32.8
PTWA	dB	72	80.9	8.6	10.1	12.9	24.2	36.1	34.4	44.6	47
DOSE	%	0.06	0.47	0	0	0	0	0	0	0	0
PDOSE	%	1.6	12.36	0	0	0	0	0	0	0	0.01
SEL	dB	102.5	111.4	39.1	40.5	43.4	54.7	66.5	64.8	75	77.4
EXP	p2s	7	54	0	0	0	0	0	0	0	0

**Dewatering Centrifuges**

## Noise Monitoring Results - Anterra's Oxnard Facility

Measurement	Units	Value
LDN	dB	72
CNEL	dB	72
TAKTMAX (5sec)	dB	N/A
LC-A	dB	8.9

Exceedence	Units	Value
L02	dB	74.2
L08	dB	72.8
L25	dB	72.1
L50	dB	71.8

		Meter 1			Meter 2		
		Count	Percent	Time	Count	Percent	Time
Overload	(OL)	0	0	00:00:00	0	0	00:00:00
Under-Range	(UR)	0	0	00:00:00	0	0	00:00:00
Upper Limit	(UL)	0	0	00:00:00	0	0	00:00:00

Exceedence Table

	0	1	2	3	4	5	6	7	8	9
0	79.9	74.7	74.2	73.7	73.4	73.2	73	72.9	72.8	72.7
10	72.6	72.5	72.5	72.5	72.4	72.4	72.4	72.3	72.3	72.3
20	72.2	72.2	72.2	72.1	72.1	72.1	72.1	72.1	72.1	72
30	72	72	72	72	72	72	72	71.9	71.9	71.9
40	71.9	71.9	71.9	71.9	71.8	71.8	71.8	71.8	71.8	71.8
50	71.8	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.6	71.6
60	71.6	71.6	71.6	71.6	71.5	71.5	71.5	71.5	71.5	71.5
70	71.5	71.4	71.4	71.4	71.4	71.4	71.3	71.3	71.3	71.3
80	71.3	71.3	71.2	71.2	71.2	71.2	71.2	71.1	71.1	71.1
90	71.1	71.1	71	71	71	70.9	70.9	70.8	70.8	70.7

Industrial Nighttime Noise Source Data							
Noise Source <sup>A</sup>	Reference				Converted		
	Reference Distance (ft.)	Usage Factor/Hourly Percentage (%) <sup>B</sup>	L <sub>eq</sub> (dBA)	L <sub>max</sub> (dBA)	Reference Distance (ft.)	L <sub>eq</sub> (dBA)	L <sub>max</sub> (dBA)
Front-End Loader	50	40	79	90	50	79	90
General Site Noise Sources	13	---	67.2	72.4	50	55.5	60.7
Mixing Tank	5	---	74.9	76.1	50	54.9	56.1
Centrifuge	65	---	72	79.9	50	74.3	82.2

**Footnotes:**

A - Front-end loader noise data taken from Ventura County *Construction Noise Threshold Criteria & Control Plan* (July 2010). General site noise sources (i.e. pumps and non-specific industrial sources) and mixing tank noise levels are based on noise monitoring data collected at Patriot's Anaheim wastewater treatment facility. The centrifuge noise level was based on previous monitoring of centrifuge dewatering units at a similar wastewater processing facility in Oxnard, California. Noise measurements were taken in 2012, 65-feet away from two (2) operating centrifuge dewatering units, which makes this measurement a conservative overestimation of one (1) Project centrifuge unit.

B - Usage factor is the percentage (%) of time, generally within an hour, that a piece of equipment is operating at full power. The default usage factor of 40% presented in the Federal Highway Administration's (FHWA) *Roadway Construction Noise Model* (February 2006).

Industrial Nighttime Noise Impacts @ Facility Receptors (R1 and R2)			
Receptor	Ambient Nighttime Noise Levels (L <sub>eq</sub> -Hour dBA) <sup>C</sup>	Facility Industrial Nighttime Noise Levels (L <sub>eq</sub> -Hour dBA) <sup>D</sup>	Total Nighttime Noise Level (L <sub>eq</sub> -Hour dBA) <sup>E</sup>
Receptor 1 (R1)	52.2	36.0	52.3
Receptor 2 (R2)	52.2	36.6	52.3
Receptor 3 (R3)	52.2	29.1	52.2

**Footnotes:**

C - Ambient noise levels were determined through onsite noise monitoring. See Appendix C for more details.

D - Facility noise levels at nearby receptors were modeled in SoundPLAN Essential software. Please note that nighttime onsite processing operations (front-end loader, general site noise sources, mixing tanks, centrifuges) noise levels were input into the model. See the full model results presented in Appendix E and results shown on Figure 5 (Appendix A) for more detail.

E - The total noise level at each receptor was determined by combining the ambient nighttime (10:00 PM-6:00 AM) noise level with the noise level generated by nighttime Facility industrial operations, as modeled in SoundPLAN Essential. The total noise level is utilized to determine the significance of noise impacts to Facility receptors (R1, R2 and R3). As shown in the table above, the existing ambient noise level dominates the predicted Facility nighttime noise environment, and the Project nighttime operations are not expected to generate appreciable noise in excess of what nearby receptors (R1, R2 and R3) already experience.

Total Nighttime Noise Level & Ventura County Significance Determination			
Parameter	Receptor 1 (R1)	Receptor 2 (R2)	Receptor 3 (R3)
Total Project Noise Level (dBA) <sup>F</sup> :	52.3	52.3	52.2
Significance Threshold (dBA) <sup>F</sup> :	55.2	55.2	55.2
Significant?	No	No	No

**Footnotes:**

F - The significance threshold shown for nighttime hours (10:00 PM-6:00 AM) is taken from the Ventura County *General Plan Noise Element*. Per Ventura County guidance, if the ambient noise level exceeds the "fixed" threshold, then the "ambient noise level +3 dBA" was utilized as the significance threshold. See Appendix C for more details.

**APPENDIX E**  
**SOUNDPLAN NOISE MODELING OUTPUT FILES**

# MODEL OUTPUT FILES - INDUSTRIAL NIGHTTIME NOISE

## Noise Emissions of Industry Sources

Source name	Reference	Level	Frequency spectrum [dB(A)]								Corrections			
			dB(A)	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Kwall dB(A)	CI dB(A)	CT dB(A)
Centrifuge 1	Unit	Day	74.3	57.4	62.4	66.5	67.6	68.2	66.5	64.1	60.1	-	-	-
Centrifuge 2	Unit	Day	74.3	57.4	62.4	66.5	67.6	68.2	66.5	64.1	60.1	-	-	-
Centrifuge 3	Unit	Day	74.3	57.4	62.4	66.5	67.6	68.2	66.5	64.1	60.1	-	-	-
Centrifuge 4	Unit	Day	74.3	57.4	62.4	66.5	67.6	68.2	66.5	64.1	60.1	-	-	-
Mixing Tank 1	Unit	Day	54.9	38.0	43.0	47.1	48.2	48.8	47.1	44.7	40.7	-	-	-
Mixing Tank 2	Unit	Day	54.9	38.0	43.0	47.1	48.2	48.8	47.1	44.7	40.7	-	-	-
Mixing Tank 3	Unit	Day	54.9	38.0	43.0	47.1	48.2	48.8	47.1	44.7	40.7	-	-	-
Mixing Tank 4	Unit	Day	54.9	38.0	43.0	47.1	48.2	48.8	47.1	44.7	40.7	-	-	-
Mixing Tank 5	Unit	Day	54.9	38.0	43.0	47.1	48.2	48.8	47.1	44.7	40.7	-	-	-
Front-End Loader	Unit	Day	79.0	58.9	61.9	67.9	72.9	74.9	71.9	67.9	-	-	-	-
General Site 1	Unit	Day	55.5	38.6	43.6	47.7	48.8	49.4	47.7	45.3	41.3	-	-	-
General Site 2	Unit	Day	55.5	38.6	43.6	47.7	48.8	49.4	47.7	45.3	41.3	-	-	-
General Site 3	Unit	Day	55.5	38.6	43.6	47.7	48.8	49.4	47.7	45.3	41.3	-	-	-
General Site 4	Unit	Day	55.5	38.6	43.6	47.7	48.8	49.4	47.7	45.3	41.3	-	-	-
General Site 5	Unit	Day	55.5	38.6	43.6	47.7	48.8	49.4	47.7	45.3	41.3	-	-	-

# MODEL OUTPUT FILES - INDUSTRIAL NIGHTTIME NOISE

## Noise Emissions of Parking Lot Traffic

Name	Parking lot type	Low noise trolleys	Size	Movements per hour			Road surface	Separated method	Level dB(A)
				Day	Evening	Night			
Park 1	Visitors and staff	-	20 car places	15.00	15.00	10.00	Water bound surface	no	81.1
Park 2	Visitors and staff	-	7 car places	15.00	15.00	10.00	Water bound surface	no	74.0

# MODEL OUTPUT FILES - INDUSTRIAL NIGHTTIME NOISE

## Receiver List

No.	Receiver name	Coordinates X                  Y in meter	Building side	Floor	Height m	Limit Night dB(A)	Level Night dB(A)	Conflict Night dB(A)
1	R1	306357.19 3798972.21		1.FI	2.00	-	36.0	-
2	R2	306414.31 3799230.80		1.FI	2.00	-	36.6	-
3	R3	306155.58 3799205.56		1.FI	-3.00	-	29.1	-

# MODEL OUTPUT FILES - INDUSTRIAL NIGHTTIME NOISE

## Contribution Levels of the Receivers

Source name	Level Night dB(A)
<b>R1</b> 1.FI	36.0
Centrifuge 1	21.4
Centrifuge 2	20.8
Centrifuge 3	19.4
Centrifuge 4	18.9
Front-End Loader	24.1
General Site 1	-1.4
General Site 2	-2.0
General Site 3	-2.7
General Site 4	-5.0
General Site 5	-2.9
Mixing Tank 1	0.5
Mixing Tank 2	0.3
Mixing Tank 3	0.1
Mixing Tank 4	-0.5
Mixing Tank 5	-1.0
Park 1	28.9
Park 2	34.0
<b>R2</b> 1.FI	36.6
Centrifuge 1	15.6
Centrifuge 2	15.5
Centrifuge 3	8.2
Centrifuge 4	10.3
Front-End Loader	15.2
General Site 1	-1.0
General Site 2	-6.2
General Site 3	1.9
General Site 4	-13.6
General Site 5	-5.6
Mixing Tank 1	-15.2
Mixing Tank 2	-14.4
Mixing Tank 3	-12.9
Mixing Tank 4	-14.3
Mixing Tank 5	-13.9
Park 1	36.4
Park 2	17.3
<b>R3</b> 1.FI	29.1
Centrifuge 1	4.5
Centrifuge 2	10.6
Centrifuge 3	10.4
Centrifuge 4	10.2
Front-End Loader	13.1
General Site 1	-6.0
General Site 2	-6.2
General Site 3	-7.6
General Site 4	-11.0
General Site 5	-10.6
Mixing Tank 1	-9.6
Mixing Tank 2	-9.7
Mixing Tank 3	-9.7
Mixing Tank 4	-9.8
Mixing Tank 5	-9.8
Park 1	28.1
Park 2	19.9

MODEL OUTPUT FILES - INDUSTRIAL NIGHTTIME NOISE

Spectra of the Receivers

No.	Name	Floor	Time slice	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	16 kHz
1	R1	1.FI	Night	23.8	32.4	24.8	27.3	28.0	26.4	20.9	7.6	-18.1
2	R2	1.FI	Night	25.5	32.6	18.8	21.5	28.0	30.3	26.0	14.5	-16.0
3	R3	1.FI	Night	20.6	25.0	11.8	13.7	20.4	22.7	16.4	-3.3	0.0

**COUNTY OF VENTURA**

**CONSTRUCTION NOISE THRESHOLD CRITERIA  
AND CONTROL PLAN**

Adopted November 2005  
Amended July 2010

Prepared By:

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County of Ventura  
Initial Study  
PL15-0106

**Attachment 29 – County of Ventura  
Construction Noise Threshold  
Criteria and Control Plan**

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## Construction and Noise

A distinct difference between the construction industry and other industries is that construction is, in the vast majority of cases, a temporary activity. There are very few construction projects that last several years. Even very large buildings and roads are under construction in a particular area for only a reasonably short time period, seldom more than two years. As the construction project progresses, the noise from such a project changes as the different phases of the construction are undertaken. Noise mitigation programs that take a long time to implement or officials that are very slow to act usually find that the problem is gone by the time the remedies are in place. Often a construction contractor can avoid most community complaints simply by notifying the potentially affected residents and other sensitive receptors regarding the purpose of the project and the expected completion schedule. People want to know how soon the construction will be finished and what are the project benefits to the neighborhood.

Thus, rather than being a continuous problem, construction noise is always a temporary site-specific problem. As such, there are many factors that contribute to the potential impacts due to construction noise, including the location of sensitive receptors, the type or phase of construction, the combination of equipment used, the site layout, and the construction methods employed. The noise created by construction equipment will vary greatly during a project, depending on such factors as the type of equipment, the specific equipment models, the operation being performed, the care employed by equipment operators and the condition of the equipment being used.

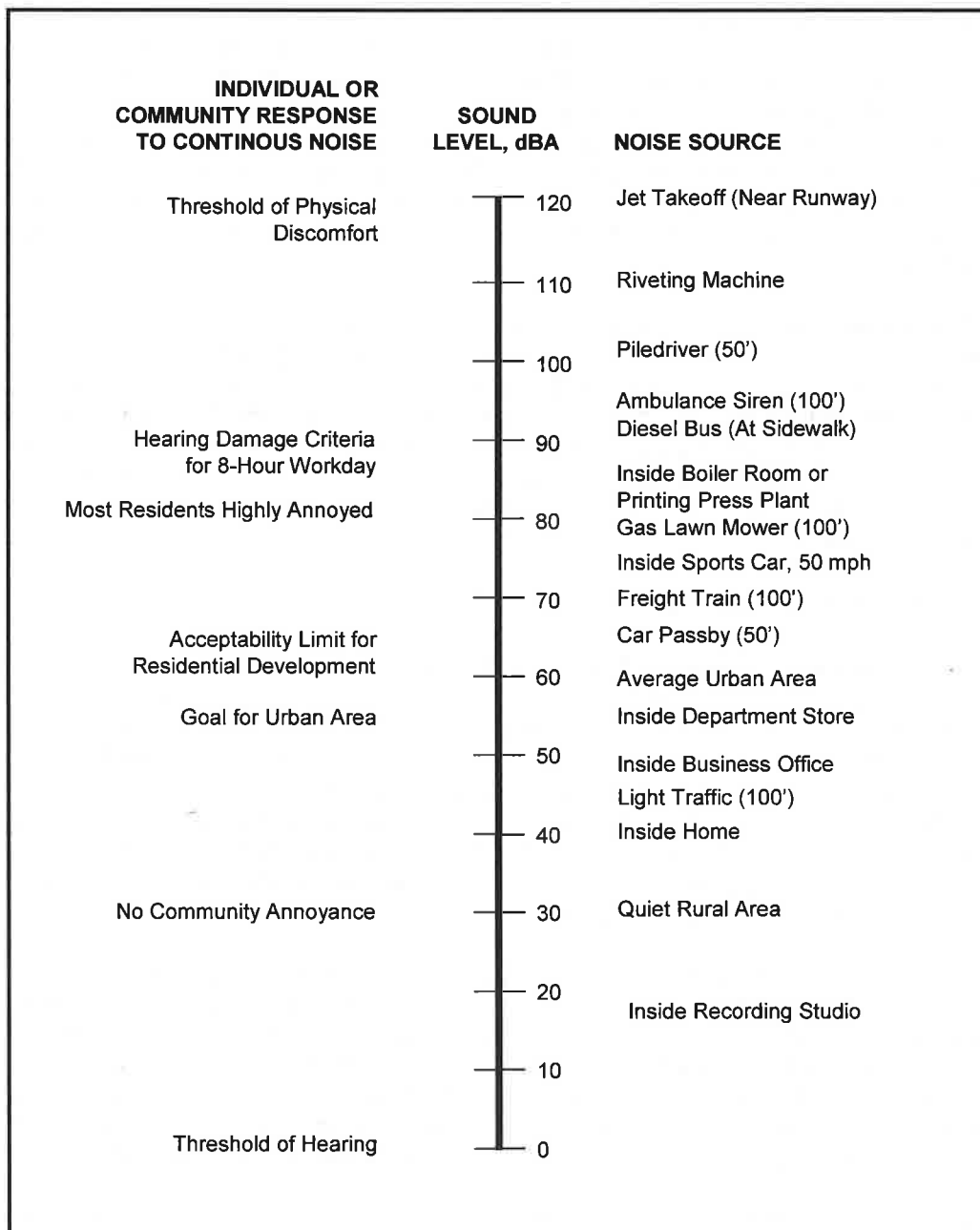
## Fundamentals of Sound

A brief introduction to the fundamentals of sound may be useful. Physically, sound magnitude is measured and quantified in terms of the decibel (dB), which is a unit on a logarithmic scale based on the ratio of the measured sound pressure to the reference sound pressure of 20 micropascal ( $20 \mu\text{Pa} = 20 \times 10^{-6} \text{ N/m}^2$ ). The decibel system can be very confusing to people since it is logarithmic and not arithmetic. For example, doubling or halving the number of sources of equal sound (a 2-fold change in acoustic *energy*) changes the receptor sound by only 3 dB, which is a barely perceptible sound loudness change for humans. On the other hand, a doubling or halving the sound *loudness* at the receiver results from a 10 dB change, which also represents a 10-fold change in the acoustic *energy*.

In addition, the human hearing system exhibits a slow time response and also is not equally sensitive to the same sound pressure level at low, middle and high acoustic frequencies. Because of this variability, a frequency-dependent, adjustment called "A-weighting" has been devised so that sound may be measured in a manner similar to the way the human hearing system responds. The A-weighted sound level is abbreviated "dBA". Figure 1 gives typical A-weighted sound levels for various noise sources and the typical reactions to these levels. All sound levels referred to in this document are A-weighted, slow response, sound pressure levels.

The two acoustical metrics most frequently used to provide a single number sound level for time-varying sounds over a given time period are the energy equivalent or energy average sound level ( $L_{eq}$ ) and the "slow response" maximum sound level ( $L_{max}$ ). The long-term A-weighted energy average sound level, called the 24-hour equivalent sound level,  $L_{eq}(24h)$ , is the logarithmic average of the individual 24 hourly equivalent sound levels,  $L_{eq}(h_i)$ . Since it has been found that noise is more disturbing in the evening and nighttime when the ambient noise is

generally quieter, modifications to the 24-hour  $L_{eq}$  have been adopted. The Day-Night sound level (DNL or  $L_{dn}$ ) is a 24-hour energy average noise level based on the daytime and nighttime hourly average  $L_{eq}(h)$  noise levels, with a 10 dB penalty added to each hourly nighttime average



**Figure 1. Typical Sound Levels of Noise Sources and Expected Reactions**

noise level. Another long-term noise descriptor is the Community Noise Equivalent Level (CNEL or  $L_{den}$ ). The CNEL is a 24-hour average noise level based on the daytime, evening and nighttime hourly average noise levels, with a 5 dB penalty added to each of the three evening hourly average noise levels and a 10 dB penalty added to each of the nine hourly nighttime average noise levels. The CNEL is used primarily in the State of California.

## Noise from Typical Construction Equipment and Operations

The equivalent sound level ( $L_{eq}$ ) as it relates to construction activity depends on several factors including machine power, the manner of operation and the amount of time the equipment is operated over a given time period. The following provides information on typical levels generated by various construction equipment and provides guidance on determining the noise from construction activities.

The most dominant source of noise for the majority of construction equipment is the engine exhaust, which is usually a diesel engine. However, for some construction work, such as impact pile driving or pavement breaking, the noise produced by the work process is the dominant source. Similar construction activities can create different noise impacts, depending on the location of the construction site, the terrain and other intervening features and the type of receptor populations in the vicinity of the construction site.

For most construction activities, different construction equipment operate in one of two modes, *stationary* and *mobile*. *Stationary* equipment are those that operate in one small area for one or more days at a time, with either a steady power cycle operation (e.g., pumps, generators, compressors, etc.) or a periodic impulsive operation (e.g., pile drivers, pavement breakers, etc.). *Mobile* equipment are those that frequently move around a much larger area of the construction site with power applied in a rapidly changing, non-steady fashion (e.g., bulldozers, loaders, etc.), or move to and from the construction site (e.g., haul trucks, material trucks, etc.). These variations in operating power and location add a great deal of complexity in characterizing the source noise level of a given piece of construction equipment. This complexity can be simplified by determining the equipment noise level at a 50-foot reference distance from the equipment operating at full power and adjusting its full power noise level according to the duty cycle or "usage factor" of the particular construction activity and project phase to determine the characteristic noise level of the operation during each phase.

The Society of Automotive Engineers has developed standardized procedures for measuring reference noise levels for the certification of mobile and stationary construction equipment. For informational purposes, typical 50-foot reference noise levels from representative pieces of construction equipment are listed in Figure 2. The major noise producing construction activities within the County would likely be pile driving, pavement breaking, demolition, excavation, earth moving, and haul trucking.

Noise-sensitive receptors that would be affected by such construction activities within the County are listed in Figure 3, along with their periods of greatest sensitivity to construction noise.

Construction activity noise is characterized by the combined duty cycle and resulting noise emission of each piece of equipment. The duty cycle is expressed in terms of the "usage factor" of the equipment, which is the percentage of time during the work period that the equipment is

operating under load or at near full power. In addition to the minute-by-minute variations in noise producing activities, construction projects are carried out in several different phases.

**Figure 2. Typical Construction Equipment Noise**

Equipment Type Noise Source	Dominant Noise Components <sup>1</sup>	50-Foot Noise Level (L <sub>eq</sub> ) dBA <sup>2,3</sup>	Noise Level Range (L <sub>p</sub> ) dBA <sup>2,3</sup>	50-Foot Maximum Noise Level (L <sub>max</sub> ) dBA <sup>2,3</sup>
Air Compressor (portable) <sup>4</sup>	E, C, H, I	81	76-89	89
Air Compressor (stationary)	E, C, H, I	82	76-89	89
Auger, Drilled Shaft Rig	E, C, F, I, W	82	76-89	89
Backhoe	E, C, F, I, H, W	85	81-90	90
Bar Bender	E, P, W	82	78-88	85
Chain Saw	E, W, C	85	72-88	88
Compactor	E, C, F, I, W	82	81-85	85
Concrete Batch Plant	W, E, C	92	80-96	96
Concrete Mixer (small trailer)	W, E, C	67	65-68	68
Concrete Mixer Truck	E, C, F, W, T	85	69-89	89
Concrete Pump Trailer	E, C, H	82	74-84	84
Concrete Vibrator	W, E, C	76	68-81	81
Crane, Derrick	E, C, F, I, T	88	79-90	90
Crane, Mobile	E, C, F, I, T	83	80-85	85
Dozer (Bulldozer)	E, C, F, I, H	80	77-90	90
Excavator	E, C, F, I, H, W	87	83-92	92
Forklift	E, C, I, W	84	81-86	86
Front End Loader	E, C, F, I, H	79	77-90	90
Generator	E, C	78	71-87	87
Gradall	E, C, F, I, W	82	78-85	85
Grader	E, C, F, I, W	85	79-89	89
Grinder	W	80	75-82	82
Hydraulic Hammer	W, E, C, H	102	99-105	105
Impact Wrench	W, P	85	75-85	85
Jack Hammer	P, W, E, C	82	75-88	88
Paver	E, D, F, I	89	82-92	92
Pile Driver (Impact/ Sonic/ Hydraulic)	W, P, E	101 / 96 / 65	94-107 / 90-99 / 65	107 / 99 / 65
Pavement Breaker	W, E, P	82	75-85	85
Pneumatic Tool	P, W, E, C	85	78-88	88
Pump	E, C	76	68-80	80
Rock Drill	W, E, P	98	83-99	99
Roller	E, C, F, I, W	74	70-83	83
Sand Blaster	W, E, C, H, I	85	80-87	87
Saw, Electric	W	78	59-80	80
Scraper	E, C, F, I, W	88	82-91	91
Shovel	E, C, F, I, W	82	77-90	90
Tamper	W, E, C	86	85-88	88
Tractor	E, C, F, I, W	82	77-90	90
Trencher		83	81-85	85
Trucks (Under Load)	E, C, F, I, T	88	81-95	95
Water Truck	W, E, C, F, I, T	90	89-94	94
Other Equipment with Diesel	E, C, F, I	82	75-88	88

Note 1. Ranked noisy components. C=Casing, E=Exhaust, F=Fan, H=Hydraulics, I=Intake air, P=Pneumatic exhaust, T=Transmission, W=Work tool.

Note 2. Table based on EPA studies and measured data from various construction equipment and manufacturer's data.

Note 3. Equipment noise levels are at 50 feet from individual construction equipment and with no other noise contributors.

Note 4. Portable air compressor rated at 75 cfm or greater and operating at greater than 50 psi.

Each phase has a different equipment mix depending on the work to be accomplished. Some have more continuous noise, while others may have more impact type noise. Typical construction phases and equipment usage factors are given in Appendix A. Construction phase equipment usage factors, combined with receptor distances and equipment noise emissions, can be used in estimating future project noise. Such methods are discussed in Appendix B.

**Figure 3. Noise-Sensitive Receptors**

Receptor Description	Typical Sensitive Time Period
Hospitals, Nursing Homes (quasi-residential)	24 hours
Single-Family and Multi-Family Dwellings (residential)	Evening/Night
Hotels/Motels (quasi-residential)	Evening/Night
Schools, Churches, Libraries (when in use)	Daytime/Evening

## Construction Noise Threshold Criteria

Standardized federal or state criteria have not been adopted for assessing construction noise impacts. Therefore, municipal planning criteria are generally developed and applied on a project-specific basis. Construction project noise criteria take into account the existing noise environment, the time-varying noise during the various phases of construction activities, the duration of the construction, and the adjacent land use.

Specific construction noise limits for noise-sensitive locations are not currently specified in the General Plan or administrative code of the County of Ventura. This document, therefore, is intended to establish construction noise thresholds and standard noise monitoring and control measures. These threshold criteria, monitoring and control measures shall be applied to all discretionary development projects (public projects, PD Permits, Conditional Use Permits) and should be applied to ministerial development permits by amending the county building code (including excavation and grading). Construction noise monitoring methods are discussed in Appendix C. Construction projects that exceed the noise threshold criteria at sensitive receptor sites, shall implement effective noise mitigation measures recommended by the manufacturers, considering the guidelines of Appendix D. The permitting agency/department shall review the construction noise mitigation measures and confirm compliance with the noise threshold criteria.

During daytime hours, construction work should comply with the County of Ventura construction noise threshold criteria (NTC), defined hereafter. Normally, no evening or nighttime construction activity is permitted in areas having noise-sensitive receptors. However, in the event such activity is deemed necessary and is permitted, reduced noise threshold criteria are provided for construction that must occur during evening and/or nighttime hours. Emergency construction work is exempt from these construction noise thresholds.

Daytime Construction<sup>1</sup> - Daytime (7:00 a.m. to 7:00 p.m. Monday through Friday, and from 9:00 a.m. to 7:00 p.m. Saturday, Sunday and local holidays) generally means any time period not

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<sup>1</sup> These criteria only apply to the noise-sensitive receptors that are sensitive to noise impacts during the daytime. See Figure 3 (above).

specifically defined as a more noise-sensitive time period. The daytime construction noise threshold criteria are given in Figure 4. Depending on project duration, the daytime noise threshold criteria shall be the greater of the fixed  $L_{eq}(h)$  limit (which includes non-construction evening and nighttime noise) or the measured ambient  $L_{eq}(h)$  plus 3 dB.

Evening Construction<sup>2</sup> - Evening hours (7:00 p.m. to 10:00 p.m.) are more noise-sensitive time periods. Therefore, evening construction noise threshold criteria differ from the daytime criteria. Overall project construction noise, for the noise-sensitive hours specified, shall not exceed the noise threshold criteria listed in Figure 5, at the nearest noise-sensitive receptor area or 10 feet from the façade of the nearest noise-sensitive building.

Nighttime Construction<sup>3</sup> - Nighttime hours (10:00 p.m. to 7:00 a.m. Monday through Friday, and from 10:00 p.m. to 9:00 a.m. Saturday, Sunday and local holidays) are the most noise-sensitive time periods. Therefore, nighttime and holiday construction noise threshold criteria differ from the daytime and evening criteria. Overall project construction noise, for the noise-sensitive hours specified, shall not exceed the noise threshold criteria listed in Figure 6, at the nearest noise-sensitive receptor area or 10 feet from the façade of the nearest noise-sensitive building.

Maximum Construction Noise - In addition, the construction-related, slow response, instantaneous maximum noise ( $L_{max}$ ) shall not exceed the noise threshold criteria by 20 dBA more than eight times per daytime hour, more than six times per evening hour and more than four times per nighttime hour.

Determination of Compliance - The construction noise at sensitive receptor locations for each construction phase is due to the contributions of each piece of noise producing equipment used in each construction phase. The resulting construction phase noise must be compared to the construction noise threshold criteria to determine whether noise mitigation measures are required. The construction noise monitoring methods are discussed in Appendix C and typical noise mitigation measures are given in Appendix D. During periods of greater construction noise activity, the construction noise shall be monitored by a designated person trained in the use of a sound meter in accordance with the methods of Appendix C. When construction noise fails to comply with the appropriate noise threshold criteria, or falls out of compliance during use, the designated noise monitor shall immediately identify the non-compliance activity or equipment. Either the non-compliant activity must be stopped and the equipment removed from service or effective remedial action must be taken, similar to the noise mitigation measures of Appendix D, to restore compliance with the respective noise threshold criteria.

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<sup>2</sup> These criteria apply to all noise-sensitive receptors. See Figure 3 (above).

<sup>3</sup> These criteria only apply to the noise-sensitive receptors that are sensitive to noise impacts during the nighttime. See Figure 3 (above).

**Figure 4. Daytime Construction Activity Noise Threshold Criteria**

Construction Duration Affecting Noise-sensitive Receptors	Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA <sup>1, 2</sup>
0 to 3 days	75	Ambient Leq(h) + 3 dB
4 to 7 days	70	Ambient Leq(h) + 3 dB
1 to 2 weeks	65	Ambient Leq(h) + 3 dB
2 to 8 weeks	60	Ambient Leq(h) + 3 dB
Longer than 8 weeks	55	Ambient Leq(h) + 3 dB

Note 1. The instantaneous L<sub>max</sub> shall not exceed the NTC by 20 dBA more than 8 times per daytime hour.

Note 2. Local ambient Leq measurements shall be made on any mid-week day prior to project work.

**Figure 5. Evening Construction Activity Noise Threshold Criteria**

Receptor Location	Evening Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA <sup>1, 2</sup>
Residential	50	Ambient Leq(h) + 3 dB

Note 1. The instantaneous L<sub>max</sub> shall not exceed the NTC by 20 dBA more than 6 times per evening hour.

Note 2. Hourly evening local ambient noise measurements shall be made on a typical mid-week evening prior to project work.

**Figure 6. Nighttime Construction Activity Noise Threshold Criteria**

Receptor Location	Nighttime Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA <sup>1, 2</sup>
Resident, Live-in Institutional	45	Ambient Leq(h) + 3 dB

Note 1. The instantaneous L<sub>max</sub> shall not exceed the NTC by 20 dBA more than 4 times per nighttime hour.

Note 2. Hourly nighttime local ambient noise measurements shall be made on a typical mid-week night prior to project work.

## Construction Noise Complaints

The daytime noise threshold criteria for construction activity are provided in Figure 4. When evening and nighttime construction is necessary, evening and nighttime construction operations (except for emergency construction) must comply with the evening and nighttime noise threshold criteria listed in Figures 5 and 6, respectively. If these respective construction noise threshold criteria are exceeded, there would likely be strong adverse community reaction. However, noise complaints are possible, even when construction work complies with the criteria.

The project, therefore, must be prepared to appropriately respond to complaints and keep a "Complaint Log," noting date, time, complainant's name, nature of the complaint, and any corrective action taken. The project manager shall publish and distribute to the potentially affected community, a "Hot Line" telephone or pager number, that is attended during active construction working hours, for use by the disturbed public to register complaints.

Since noise complaints are still possible, even when construction work complies with the noise threshold criteria. Noise characteristics other than loudness (e.g., squeals, incessant banging, etc.) can result in complaints. An unusual number of construction noise complaints may require that additional noise mitigation be undertaken. Careful identification of the specific conditions of activity responsible for the noise complaints would be necessary to determine additional appropriate mitigation measures. Appendix D suggests typical measures to be considered for greater mitigation than previously implemented. Proper measures shall be applied before continuing the activity responsible for the unusual number of complaints. For especially difficult cases, the assistance of a qualified construction noise control consultant may be required.

# **APPENDICES**

- A. Typical Equipment Noise, Construction Phases and Use Factors**
- B. Estimating Construction Equipment and Project Noise**
- C. Construction Noise Monitoring**
- D. Construction Noise Mitigation Measures**

# Appendix A

## Typical Equipment Noise, Construction Phases and Use Factors

### Figure A-1. Typical Construction Equipment Noise

Equipment Type Noise Source	Dominant Noise Components <sup>1</sup>	50-Foot Noise Level (L <sub>eq</sub> ) dBA <sup>2,3</sup>	Noise Level Range (L <sub>p</sub> ) dBA <sup>2,3</sup>	50-Foot Maximum Noise Level (L <sub>max</sub> ) dBA <sup>2,3</sup>
Air Compressor (portable) <sup>4</sup>	E, C, H, I	81	76-89	89
Air Compressor (stationary)	E, C, H, I	82	76-89	89
Auger, Drilled Shaft Rig	E, C, F, I, W	82	76-89	89
Backhoe	E, C, F, I, H, W	85	81-90	90
Bar Bender	E, P, W	82	78-88	85
Chain Saw	E, W, C	85	72-88	88
Compactor	E, C, F, I, W	82	81-85	85
Concrete Batch Plant	W, E, C	92	80-96	96
Concrete Mixer (small trailer)	W, E, C	67	65-68	68
Concrete Mixer Truck	E, C, F, W, T	85	69-89	89
Concrete Pump Trailer	E, C, H	82	74-84	84
Concrete Vibrator	W, E, C	76	68-81	81
Crane, Derrick	E, C, F, I, T	88	79-90	90
Crane, Mobile	E, C, F, I, T	83	80-85	85
Dozer (Bulldozer)	E, C, F, I, H	80	77-90	90
Excavator	E, C, F, I, H, W	87	83-92	92
Forklift	E, C, I, W	84	81-86	86
Front End Loader	E, C, F, I, H	79	77-90	90
Generator	E, C	78	71-87	87
Gradall	E, C, F, I, W	82	78-85	85
Grader	E, C, F, I, W	85	79-89	89
Grinder	W	80	75-82	82
Hydraulic Hammer	W, E, C, H	102	99-105	105
Impact Wrench	W, P	85	75-85	85
Jack Hammer	P, W, E, C	82	75-88	88
Paver	E, D, F, I	89	82-92	92
Pile Driver (Impact/ Sonic/ Hydraulic)	W, P, E	101 / 96 / 65	94-107 / 90-99 / 65	107 / 99 / 65
Pavement Breaker	W, E, P	82	75-85	85
Pneumatic Tool	P, W, E, C	85	78-88	88
Pump	E, C	76	68-80	80
Rock Drill	W, E, P	98	83-99	99
Roller	E, C, F, I, W	74	70-83	83
Sand Blaster	W, E, C, H, I	85	80-87	87
Saw, Electric	W	78	59-80	80
Scraper	E, C, F, I, W	88	82-91	91
Shovel	E, C, F, I, W	82	77-90	90
Tamper	W, E, C	86	85-88	88
Tractor	E, C, F, I, W	82	77-90	90
Trencher		83	81-85	85
Trucks (Under Load)	E, C, F, I, T	88	81-95	95
Water Truck	W, E, C, F, I, T	90	89-94	94
Other Equipment with Diesel	E, C, F, I	82	75-88	88

- Note 1. Ranked noisy components. C=Casing, E=Exhaust, F=Fan, H=Hydraulics, I=Intake air, P=Pneumatic exhaust, T=Transmission, W=Work tool.
- Note 2. Table based on EPA studies and measured data from various construction equipment and manufacturer's data.
- Note 3. Equipment noise levels are at 50 feet from individual construction equipment and with no other noise contributors.
- Note 4. Portable air compressor rated at 75 cfm or greater and operating at greater than 50 psi.

**Figure A-2**  
**Typical Domestic Housing Construction Equipment and Use Factors**

Equipment Item	50-Foot Leq, dBA	Mitigated <sup>1</sup> Leq, dBA	Highest Hourly Use Percentage per Construction Phase				
			Clear	Excavate	Base	Build	Finish
Air Compressor	81	75	--2	10	--	--	25
Backhoe	85	75	2	4	--	--	2
Concrete Mixer	85	75	--	--	4	8	16
Concrete Pump	82	75	--	--	--	--	--
Concrete Vibrator	76	75	--	--	--	--	--
Crane, Derrick	88	75	--	--	--	--	--
Crane, Mobile	83	75	--	--	--	10	4
Dozer	80	75	4	8	--	--	4
Generator	78	75	4	--	--	--	--
Grader	85	75	5	--	--	--	2
Jack Hammer	82	75	--	--	--	--	3
Loader	79	75	4	8	--	--	4
Paver	89	80	--	--	--	--	3
Pile Driver	101	95	--	--	--	--	--
Pneumatic Tool	85	80	--	--	4	10	4
Pump	76	75	--	4	7	--	--
Rock Drill	98	80	--	1	--	--	0.5
Roller	74	74	--	--	--	--	4
Saw, Electric	78	75	--	--	4 (2) 3	10 (2)	4 (2)
Scraper	88	80	5	--	--	--	1
Shovel	82	75	--	2	--	--	--
Truck	88	75	16	40	--	--	16

Note 1. Estimated level obtainable by quieter methods or equipment and implementing feasible noise controls.

Note 2. "--" indicates typically zero or very little use during construction phase.

Note 3: Numbers in parentheses are greatest multiple number of same items in use.

**Figure A-3**  
**Typical Large Building and Institutional Construction Equipment and Use Factors**

Construction Equipment	50-Foot Leq, dBA	Mitigated <sup>1</sup> Leq, dBA	Highest Hourly Use Percentage per Construction Phase				
			Clear	Excavate	Base	Build	Finish
Air Compressor	81	75	-- <sup>2</sup>	100 (2) <sup>3</sup>	100 (2)	100 (2)	40 (2)
Backhoe	85	75	04	16	--	--	4
Concrete Mixer	85	75	--	--	40	40	16
Concrete Pump	82	75	--	--	40	8	8
Concrete Vibrator	76	75	--	--	40	10	4
Crane, Derrick	88	75	--	--	--	16	4
Crane, Mobile	83	75	--	--	--	16 (2)	4 (2)
Dozer	80	75	16	40	--	--	16
Generator	78	75	40 (2)	100 (2)	--	--	--
Grader	85	75	8	--	--	--	2
Jack Hammer	82	75	--	10	4	4	4
Loader	79	75	16	40	--	--	16
Paver	89	80	--	--	--	--	10
Pile Driver	101	95	--	--	4	--	--
Pneumatic Tool	85	80	--	--	4	16 (2)	4 (2)
Pump	76	75	--	100 (2)	100 (2)	40	--
Rock Drill	98	80	--	4	--	--	0.5
Roller	74	74	--	--	--	--	--
Saw, Electric	78	75	--	--	4 (3)	100 (3)	--
Scraper	88	80	55	--	--	--	--
Shovel	82	75	--	40	--	--	--
Truck	88	75	16 (2)	40	--	--	16

Note 1. Estimated level obtainable by quieter methods or equipment and implementing feasible noise controls.

Note 2. "--" indicates typically zero or very little use during construction phase.

Note 3: Numbers in parentheses are greatest number of same items in use during any hour.

**Figure A-4**  
**Typical Commercial and Industrial Construction Equipment and Use Factors**

Construction Equipment	50-Foot Leq, dBA	Mitigated <sup>1</sup> Leq, dBA	Highest Hourly Use Percentage per Construction Phase				
			Clear	Excavate	Base	Build	Finish
Air Compressor	81	75	--2	100	40	40	40
Backhoe	85	75	4	16	--	--	4
Concrete Mixer	85	75	--	--	40	16	16
Concrete Pump	82	75	--	--	40	--	8
Concrete Vibrator	76	75	--	--	--	--	--
Crane, Derrick	88	75	--	--	--	4	2
Crane, Mobile	83	75	--	--	--	8	4
Dozer	80	75	4	16	--	--	4
Generator	78	75	40	40	--	--	--
Grader	85	75	5	--	--	--	2
Jack Hammer	82	75	--	10	4	4	4
Loader	79	75	16	16	--	--	4
Paver	89	80	--	--	--	--	12
Pile Driver	101	95	--	--	4	--	--
Pneumatic Tool	85	80	--	--	4	10 (3) 3	4 (3)
Pump	76	75	--	40	100 (2)	40	--
Rock Drill	98	80	--	4	--	--	5
Roller	74	74	--	--	--	--	10
Saw, Electric	78	75	--	--	4 (2)	10 (2)	--
Scraper	88	80	14	--	--	--	8
Shovel	82	75	--	20	--	--	6
Truck	88	75	16 (2)	16 (2)	--	--	16

Note 1. Estimated level obtainable by quieter methods or equipment and implementing feasible noise controls.

Note 2. "--" indicates typically zero or very little use during construction phase.

Note 3: Numbers in parentheses are greatest number of same items in use during any hour.

**Figure A-5**  
**Typical Public Works and Roadway Construction Equipment and Use Factors**

Construction Equipment	50-Foot Leq, dBA	Mitigated <sup>1</sup> Leq, dBA	Highest Hourly Use Percentage per Construction Phase				
			Clear	Excavate	Base	Build	Finish
Air Compressor	81	75	--2	100 (2) <sup>3</sup>	40	40	40 (2)
Backhoe	85	75	4	40	--	--	16
Concrete Mixer	85	75	--	--	16 (2)	40 (2)	16 (2)
Concrete Pump	82	75	--	--	--	--	--
Concrete Vibrator	76	75	--	--	--	--	--
Crane, Derrick	88	75	--	10	4	4	--
Crane, Mobile	83	75	--	--	--	16	--
Dozer	80	75	4	40	--	--	16
Generator	78	75	100 (2)	40 (2)	40 (2)	40	40 (2)
Grader	85	75	8	--	--	20	8
Jack Hammer	82	75	--	--	--	4	10 (2)
Loader	79	75	4	40	--	--	16
Paver	89	80	--	--	--	--	--
Pile Driver	101	95	--	--	--	--	--
Pneumatic Tool	85	80	--	--	4 (2)	10	4
Pump	76	75	--	40 (2)	100 (2)	40 (2)	--
Rock Drill	98	80	--	4	--	--	--
Roller	74	74	--	--	100	--	--
Saw, Electric	78	75	--	--	4 (2)	--	--
Scraper	88	80	8		20	8	8
Shovel	82	75	4	40	4	--	4
Truck	88	75	16 (2)	16	40 (2)	--	16 (2)

Note 1. Estimated level obtainable by quieter methods or equipment and implementing feasible noise controls.

Note 2. "--" indicates typically zero or very little use during construction phase.

Note 3: Numbers in parentheses are greatest number of same items in use during any hour.

## Appendix B

### Estimating Construction Project Noise

For project planning purposes, where the potential for noise impacts exist, it is possible to estimate the potential construction noise impacts in advance by developing an inventory of noisy construction equipment and processes for the various stages and phases of the project. Such screening methods assist construction project managers and estimators in planning for the potential need for noise mitigation.

#### Construction Equipment Inventory

An inventory of the number and type of noisy construction equipment to be used during planned daytime, evening and nighttime construction activities, their associated noise emissions, and other relevant information can be included on Figure B-2, Construction Phase Receptor Noise Estimation Worksheet. Using this form, construction noise levels for the various phases of construction can be estimated using the phase's equipment inventory, the typical 50-foot equipment noise levels (listed in Figure A-1 of Appendix A) along with typical by-phase construction equipment use factors, provided in Figures A-1 through A-5 of Appendix A.

#### Construction Noise Estimates

Calculations can be performed to estimate the daytime, evening and nighttime maximum ( $L_{\max}$ ) and one-hour energy average ( $L_{eq}$ ) noise levels expected at the noise-sensitive location, based on the typical maximum equipment noise levels listed in Figure A-1 in Appendix A. The calculations are to be made for the various activities and locations where project construction noise will result in the greatest noise impact (*noise levels at other sensitive locations can also be calculated, if necessary*). The calculations and results should be entered on a form similar to Figure B-2, the Construction Phase Receptor Noise Estimation Worksheet. The result of a sample construction noise calculation is provided in Figure B-1.

The following calculation procedures may be used to estimate the construction noise by phase.

1. Calculate each phase's  $L_{\max}$  according to the following method:

$$L_{\max} [\text{equipment type}] = ML - 20 \log_{10} (D/50)$$

where:

ML = Typical single equipment maximum noise level ( $L_{\max}$ ) at 50 feet, in dBA.  
(*This may be replaced by a measured, under-load, maximum noise level*).

D = Distance from the equipment to the noise-sensitive location, in feet.

Repeat the above calculation for each item of potentially noisy equipment. Then, select the noisiest individual pieces of equipment that operate in their loudest mode at the very same time and combine them logarithmically to estimate the overall maximum construction noise level ( $L_{\max}$ ) at the noise-sensitive location(s) for each project phase, as follows:

$$L_{\max} [\text{overall project at receptor}] = 10 \log_{10} (\sum 10^{(L_{\max} [\text{equipment type}] / 10)})$$

## Construction Noise Threshold Criteria

2. Calculate each phase's one-hour  $L_{eq}$  according to the method recommended by the U.S. Federal Highway Administration ("Highway Construction Noise: Measurement, prediction and mitigation," U.S. Department of Transportation, Federal Highway Administration Special Report, March 1977), as follows:

First, the construction phase's one-hour  $L_{eq}$  is to be calculated at the sensitive receptor location for each item of potentially noisy equipment using the following equation:

$$L_{eq}(h) [\text{equipment type}] = ML - 20 \log_{10} (D/50) + 10 \log_{10} (N \times HP/100)$$

where:

- ML = Typical single equipment maximum noise level ( $L_{max}$ ) at 50 feet, in dBA. *(This may be replaced by a measured, under-load, maximum noise level).*
- D = Shortest distance (feet) from the equipment type to the nearest noise-sensitive location, or if a more sensitive receptor is further away, to the noise-sensitive receptor with the greatest impact. If the distance is measured in meters, use the ratio D/15 instead of D/50.
- N = Maximum number of the same equipment type operating hourly on the project during the construction phase.
- HP = "Hourly percentage," expressed as the greatest nominal percent of time that the equipment is operated under load at the project site. This factor is based on EPA values or is estimated based on past experience with similar projects. Thus, the effective usage factor is (EUF) =  $N \times HP/100$ .

Repeat the above calculations for each item of potentially noisy equipment. Then, the individual contribution of every item of equipment are to be combined logarithmically to obtain the overall construction hourly  $L_{eq}$  at the noise-sensitive location(s) for each project phase, as follows:

$$L_{eq}(h) [\text{overall project at receptor}] = 10 \log_{10} (\sum 10^{(\text{one-hour } L_{eq} [\text{equipment type}] / 10)})$$

3. The calculated  $L_{max}$  and  $L_{eq}(h)$  levels can then be compared with the construction noise threshold criteria. Where it is estimated that the criteria would be exceeded, noise mitigation planning can be undertaken.

**Figure B-1.**  
**Example of Construction Phase Receptor Noise Estimation Worksheet**

A	B	C	D	E	F	G	H	I	J	K
<u>Construction Phase Equipment Item</u>	<u># of Items</u>	<u>Item L<sub>max</sub> at 50 feet, dBA</u>	<u>Dist. to Recptr.</u>	<u>Item Usage Percent</u>	<u>Usage Factor</u>	<u>Dist. Adj., dB</u>	<u>Usage Adj., dB</u>	<u>Recptr. Item L<sub>max</sub>, dBA</u>	<u>Recptr. Item Leg. dBA</u>	<u>Log<sub>10</sub> Sums of Receptor Item L<sub>eq</sub></u>  <u>Yield the Combined Receptor L<sub>eq</sub>, dBA</u>
1. DOZER	1	90	100	70	0.70	-6	-1.6	84.0	82.4	82.4
2. GRADER	1	89	200	75	0.75	-12	-1.2	77.0	75.7	83.3
3. SCRAPER	2	91	150	20	0.40	-6	-4.0	81.5	77.5	84.4
4. WATER TRUCK	1	94	50	5	0.05	-6	-13.0	94.0	81.0	86.0
5.										
6.										
							Log Sum	94.7	86.0	

**Figure B-2.**  
**Construction Phase Receptor Noise Estimation Worksheet**

A	B	C	D	E	F	G	H	I	J	K
<u>Construction Phase Equipment Item</u>	<u># of Items</u>	<u>Item L<sub>max</sub> at 50 feet, dBA</u>	<u>Dist. to Recptr.</u>	<u>Item Usage Percent</u>	<u>Usage Factor</u>	<u>Dist. Correcti on dB</u>	<u>Usage Adj. dB</u>	<u>Recptr. Item L<sub>max</sub>, dBA</u>	<u>Recptr. Item Leq, dBA</u>	<u>Log10 Sums of Receptor Item Leq</u>  <u>Yield the Combined Receptor Leq, dBA</u>
1.										
2.										
3.										
4.										
5.										
6.										
							<b>Log Sum</b>			

## **Appendix C**

### **Construction Noise Monitoring**

This appendix outlines the noise measurement instrumentation and monitoring procedures.

#### **Noise Measurement Instruments**

1. Noise measurements shall be performed with an instrument that is in compliance with or exceeds the criteria for a Type 2 (General Purpose) Sound Level Meter, as defined in the most recent revision of ANSI Standard S1.4.2.
2. Sound level meters shall be capable of measuring the slow response  $L_{max}$  and one-hour  $L_{eq}$  on the A-Weighted scale, as required by the construction noise threshold criteria and construction project noise limits. Where possible, integrating-type instruments may monitor the percentile ( $L_1$ ,  $L_{50}$ , etc.) noise levels, as well, to show construction noise statistics.
3. Sound level meters, microphones, and field calibrators shall be calibrated by a certified laboratory at least once a year. A valid certificate of calibration conformance shall be obtained and be available for each instrument before using sound level meters. Updated certificates shall be maintained following subsequent yearly calibrations and upon the completion of repairs to noise monitoring instruments.

#### **Noise Measurement Procedure**

1. The sound level meter shall be calibrated using an acoustic calibrator, according to the manufacturer's specifications, just before each measurement.
2. Except as otherwise indicated, measurements shall be performed using the A-weighting network and the slow response setting of the sound level meter.
3. Impulsive or impact noises shall be measured using the C-weighting network and the fast response setting of the sound level meter.
4. The measurement microphone shall be fitted with an appropriate windscreen and the sound level meter shall be placed at the location of the sensitive receptor with the microphone approximately 5 feet above the ground or floor and at least 10 feet away from any vertical surfaces.
5. Ambient noise measurements shall be taken during periods of the least noise-producing activity in the vicinity of noise sensitive locations that may be impacted by the construction operations. Ambient noise measurements shall be conducted for at least 20 minutes at representative locations for potentially impacted receptors.
6. Construction noise measurements shall be taken during periods of greatest noise-producing activity at noise sensitive locations in the vicinity of the construction site a minimum of once each shift and also after a sustained perceptible change in noise-producing construction activity or location. Noise measurements shall be conducted for at least 20 minutes each monitoring session.

7. Construction noise measurements shall coincide with daytime, evening and nighttime daily time periods of maximum noise-generating construction activity and shall be taken or repeated during the construction phase or activity that has the greatest potential to create annoyance or to exceed applicable noise regulations and restrictions.
8. If, in the estimation of the person performing the measurements, non-project related noise sources contribute significantly to the measured noise level, additional measurements (with the same non-project noise source contributions) shall be repeated when project construction is inactive to determine the non-project ambient background noise level.
9. Noise data shall be logged using the Noise Measurement Report Form and maintained for at least six months following the completion of the construction project. The type of measurement (e.g. baseline ambient, on-going construction, major change, etc.) shall be noted on the form.
10. Monitoring locations shall be clearly identified and sketched on the Noise Measurement Report Form along with the locations of and monitoring site distances to the noise-sensitive receptors.
11. Construction equipment operating during the noise monitoring period and their locations shall be identified and sketched on the Noise Measurement Report Form, along with the locations of and equipment distances to the noise sensitive receptors.

### Figure C-1 Noise Measurement Report Form - Part A

Project: \_\_\_\_\_ Contract No(s): \_\_\_\_\_

Date: \_\_\_\_\_ Day of Week: \_\_\_\_\_ Time: \_\_\_\_\_

Monitoring Site Number: \_\_\_\_\_ Monitoring Site Address: \_\_\_\_\_

Measurement Taken By: \_\_\_\_\_ of \_\_\_\_\_

Approximate Wind Speed: \_\_\_\_\_ mph [km/hr]. Approximate Wind Direction: From the \_\_\_\_\_

Approximate distance of Sound Level Meter from Receptor Location: \_\_\_\_\_

Approximate distance of Sound Level Meter from Construction Site: \_\_\_\_\_

(Leave Blank for Baseline Ambient)

Receptor Land Use (Check One): ☐ Residential / Institutional ☐ Commercial / Recreational

Sound Level Meter: Make and Model: \_\_\_\_\_ Serial Number \_\_\_\_\_

Meter Setting: ☐ A-Weighted Sound Level (SLOW) ☐ C-Weighted Sound Level (FAST) for Impacts

Duration of Measurement: \_\_\_\_\_ (at least 20 Minutes)

Check the measurement purpose:

☐ Baseline condition
 ☐ Ongoing construction
 ☐ Major change
 ☐ Complaint response

#### Measurement Results:

Measurement Type	Measured Level	Noise Criteria Threshold	Exceedance
CALIBRATION		n/a	n/a
Leq			
Lmax			
L1		n/a	n/a
L8 or L10 (circle which)		n/a	n/a
L25		n/a	n/a
L50		n/a	n/a
L90		n/a	n/a

## Construction Noise Threshold Criteria

## Appendix C

Field Notes:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

Complete all that apply below:

Active Equipment: \_\_\_\_\_

(List construction equipment that contribute to measured noise)

Complaint Response: \_\_\_\_\_

(Describe complaint; include log-in number)

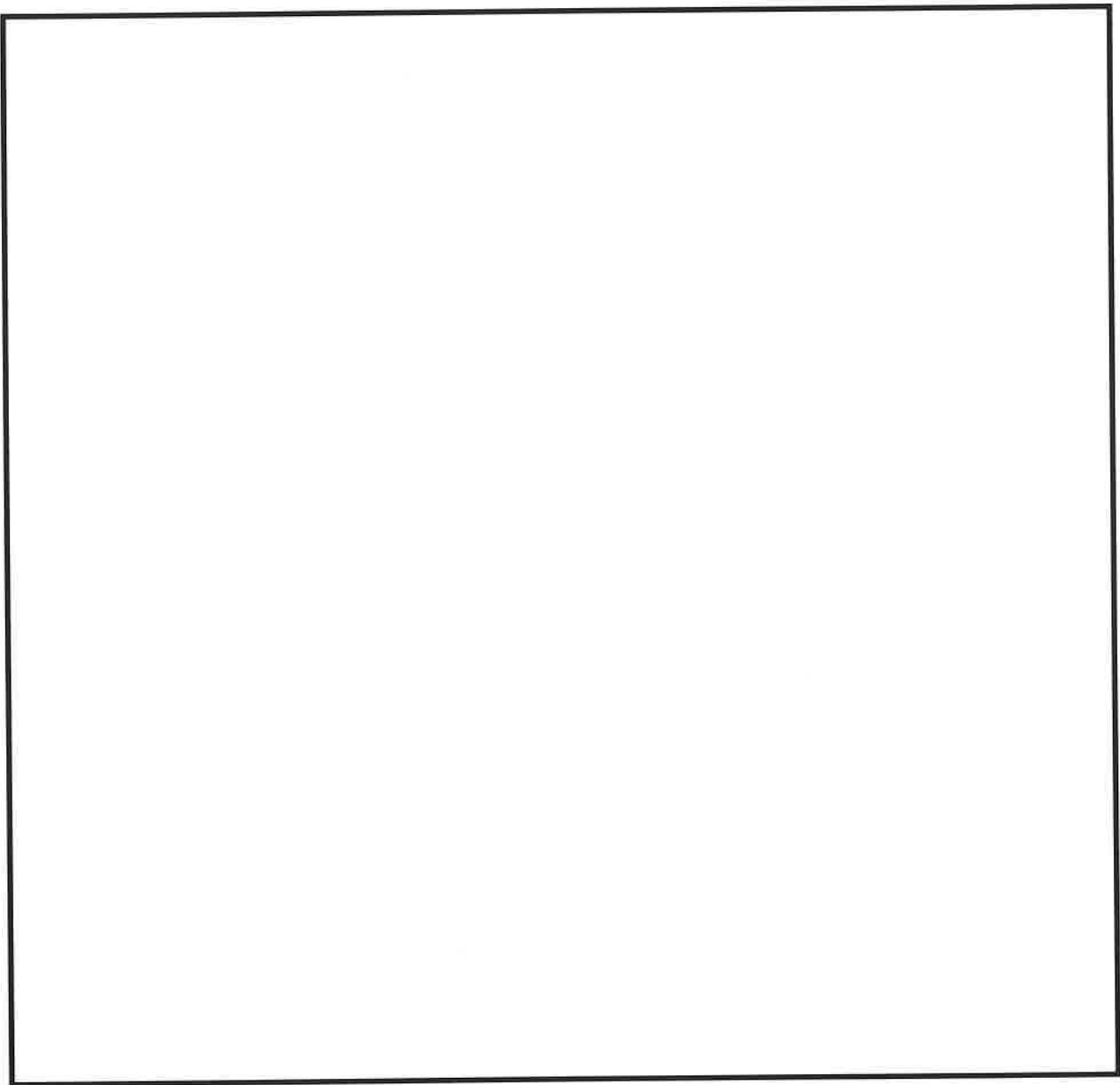
Complaint Mitigation Measure(s): \_\_\_\_\_

(Describe complaint response mitigation)

**Figure C-2**  
**Noise Measurement Report Form - Part B**

Project: \_\_\_\_\_ Contract No(s): \_\_\_\_\_  
Date: \_\_\_\_\_ Day of Week: \_\_\_\_\_ Time: \_\_\_\_\_  
Monitoring Site Number: \_\_\_\_\_ Monitoring Site Address: \_\_\_\_\_

**Site Map**

A large empty rectangular box with a black border, intended for a site map.

Field Notes:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

Noise Monitor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **Appendix D**

### **Construction Noise Mitigation Measures**

Construction noise is to be monitored at the most affected sensitive receptor location (10 feet from the construction activity side of a noise-sensitive receptor building or at the outdoor living area). Noise measurements are to be conducted using the procedures in this Appendix and the measurement results logged in a format similar to that of the Construction Noise Mitigation Form in this Appendix. Where the construction noise threshold criteria are exceeded, at noise-sensitive locations, noise abatement measures, such as those in this Appendix, are to be implemented and adequate noise reduction achieved to bring the construction activities into compliance with the construction noise threshold criteria.

Construction noise mitigation may be achieved using various combinations of equipment source noise reduction, propagation path noise reduction and sensitive receptor noise reduction.

#### **Construction Equipment Source Noise Reduction Methods**

Feasible and reasonable equipment noise mitigation measures may need to be implemented to meet the construction noise threshold criteria. Examples of equipment source noise reduction methods to reduce construction noise impacts at sensitive receptor locations are listed in this section. The implementation of one or more of these measures, along with those of the other sections, may be necessary to achieve compliance with the construction noise threshold criteria.

##### Equipment Noise Reduction:

1. Minimize the use of impact devices, such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal.
2. Pneumatic impact tools and equipment used at the construction site shall have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.
3. Provide impact noise producing equipment, i.e. jackhammers and pavement breaker(s), with noise attenuating shields, shrouds or portable barriers or enclosures, to reduce operating noise.
4. Line or cover hoppers, conveyor transfer points, storage bins, and chutes with sound-deadening material (e.g., apply wood or rubber liners to metal bin impact surfaces).
5. Provide upgraded mufflers, acoustical lining or acoustical paneling for other noisy equipment, including internal combustion engines.
6. Avoid blasting and impact-type pile driving.
7. Use alternative procedures of construction and select a combination of techniques that generate the least overall noise and vibration. Such alternative procedures could include the following:
  - a. Use electric welders powered by remote generators.

### **Construction Noise Threshold Criteria**

- b. Mix concrete at non-sensitive off-site locations, instead of on-site.
  - c. Erect prefabricated structures instead of constructing buildings on-site.
8. Use construction equipment manufactured or modified to reduce noise and vibration emissions, such as:
- a. Electric instead of diesel-powered equipment.
  - b. Hydraulic tools instead of pneumatic tools.
  - c. Electric saws instead of air- or gasoline-driven saws.
9. Turn off idling equipment when not in use for periods longer than 30 minutes.

### **Operations Noise Reduction Methods:**

In no case shall the following mitigation measures alter the project's responsibility for compliance with applicable Federal, state, and local safety ordinances and regulations, as well as project-specific construction specifications.

- 1. Operate equipment so as to minimize banging, clattering, buzzing, and other annoying types of noises, especially near residential and other noise sensitive areas during the evening and nighttime hours.
- 2. To the extent feasible, configure the construction site in a manner that keeps noisier equipment and activities as far as possible from noise sensitive locations and nearby buildings.
- 3. All back-up alarms should be disarmed at 8:00 p.m. and not reactivated until 7:00 a.m. on weekdays and 9:00 a.m. on weekends and local holidays. Signal persons and strobe lights must be used during periods when the back-up alarms are disarmed.
- 4. Maximize physical separation, as far as practicable, between noise generators and noise receptors. Separation includes following measures:
  - a. Provide enclosures for stationary items of equipment and noise barriers around particularly noisy areas at the project site.
  - b. Locate stationary equipment to minimize noise and vibration impacts on community.
- 5. Minimize noise-intrusive impacts during most noise sensitive hours.
  - a. Plan noisier operations during times of highest ambient noise levels.
  - b. Keep noise levels relatively uniform; avoid excessive and impulse noises.
  - c. Turn off idling equipment.
  - d. Phase in start-up and shut-down of project site equipment.

## **Construction Noise Threshold Criteria**

6. Select truck routes for material delivery and spoils disposal so that noise from heavy-duty trucks will have a minimal impact on noise sensitive receptors. Proposed truck haul routes are to be submitted to the County Transportation Division for approval.
  - a. Conduct truck loading, unloading, and hauling operations so noise and vibration are kept to a minimum.
  - b. Route construction equipment and vehicles carrying soil, concrete or other materials over streets and routes that will cause the least disturbance to residents in the vicinity of construction sites and haul roads.
  - c. Do not operate haul trucks on streets within 250 feet of school buildings during school hours or hospitals and nursing homes at any time, without a variance.
  - d. Submit haul routes and staging areas to the County Transportation Division for approval, at least 30 days before the required usage date.

A summary of equipment noise control methods is given in Figure D-1. Incorporating the construction noise mitigation methods and techniques would reduce construction noise and vibration impacts.

## **Construction Noise Propagation Path Reduction Methods**

Feasible and reasonable propagation path mitigation measures may need to be implemented to help meet the construction noise threshold criteria. Examples of propagation path noise reduction methods to reduce construction noise impacts at sensitive receptor locations are listed in this section. The implementation of one or more of these measures, along with those of the other sections, may be necessary to achieve compliance with the construction noise threshold criteria.

### Construction Site Noise Barriers

Moveable noise barriers can be positioned and relocated along a construction corridor, while fixed noise barriers can be located at a fixed construction site.

### Moveable Construction Noise Blankets

1. For lesser noise reduction, install moveable frame-mounted noise curtains, blankets or enclosures adjacent to or around noisy equipment where required to meet the project noise limits. Noise control shields shall be made of a durable, flexible composite material featuring a noise barrier layer bonded to a weather-protected, sound-absorptive material on the construction-activity side of the noise shield.
2. Provide readily removable and moveable noise shields so that they may be repositioned, as necessary, to provide noise abatement for non-stationary and stationary processes along a construction corridor as the construction process moves.

## Construction Noise Threshold Criteria

**Figure D-1**  
**Some Construction Equipment Noise Sources and Typical Mitigation Measures**

Construction Equipment	Source(s) of noise	Possible mitigation measures (may need to be discussed with equipment manufacturer)		Possible alternative construction methods <sub>1</sub>
Impact Pile Driver	Pneumatic/diesel hammer or steam winch vibrator driver	Enclose hammer head and top of pile in an acoustical screen or acoustical blankets, apply acoustical damping to sheet steel piles to reduce vibration and resonant noise		(1) Use alternative methods of pile driving, e.g. drill and drop, poured in place, hydraulic driver, etc.  (2) Alternative methods of soil retention and ground improvement, e.g. retaining walls, ground anchors, shafts formed of pre-cast concrete segments sunk into the ground, etc.
	Impact on pile	Use resilient pad between pile and hammer head.		
	Crane cables, pile guides and attachments	Careful alignment of pile and rig, lubricate screeching cables, guides and pulleys.		
	Power unit	Install more efficient exhaust silencer; apply acoustical damping and protected internal noise absorption layers to vibrating panels and covers. Manufacturer's access panels should be kept closed. Use properly ventilated acoustical enclosures where possible.		
Bulldozer Compactor Crane Dump truck Excavator Grader Loader Scraper Shovel	Engine	Install more efficient exhaust silencer.  Apply acoustical damping and protected internal noise absorption layers to vibrating panels and covers.  Enclosure panels should be kept closed.  Operate without excessive engine revving.		
Compressor  Generator	Engine	Install more efficient exhaust silencer.	Locate the compressor or generator within an acoustical enclosure or behind an absorptive, three-sided sound wall.	Use electric motors instead of diesel or gasoline engines to drive compressors. If there is no electrical supply, use a reduced noise compressor or generator. A remote electrical generator can be used to supply power to several pieces of equipment.
	Compressor or generator	Apply acoustical damping and protected noise absorption layers to internal of vibrating panels and covers. Enclosure panels should be kept closed		

## Construction Noise Threshold Criteria

Pneumatic concrete breaker and tools	Tool	Install a muffler and acoustic shroud to reduce noise without impairing efficiency	Operate equipment inside a portable acoustical enclosure	Use rotary drill and buster. Use hydraulic and electric equipment. A thermal lance can be used to burn holes in concrete and to cut through large sections of concrete. For breaking large areas of concrete, use equipment which breaks concrete by bending it.
	Bit	Use a damped bit to eliminate "bit ringing." Noise drops as surface is broken through		
	Air line	Stop all air line leaks.		
	Motor	Install muffler to pneumatic saws		
Power saws	Vibration of blade and cut material	Keep saw blades sharp. Use a damped blade. Use blades with random tooth spacing. Tightly clamp material during cutting, if possible		
Rotary drills, diamond drilling and boring	Drive motor and bit	Use equipment inside an acoustical enclosure.		Use thermal lance
Construction Equipment	Source(s) of noise	Possible mitigation measures (may need to be discussed with equipment manufacturer)		Possible alternative construction methods <sup>1</sup>
Riveters	Impact on rivets	Enclose working area with acoustic barriers.		Use high tensile steel bolts instead of rivets
Cartridge gun	Cartridge blast	Use a muffled cartridge gun.		Drilled attachments
Pump	Engine or motor, pulsing, cavitation	Use an acoustical enclosure (allow for engine cooling and exhaust) or use motor suction and girdle mutes.		
Batch plant  Concrete mixer	Engine	Install more efficient silencer on diesel or gasoline engine. Enclose engine.	Locate batch or mixing plant as far as possible from noise-sensitive receptors.	Use electric motor instead of diesel or gasoline engine
	Filling	Keep aggregate from falling from an excessive height		
	Cleaning	Do not hammer the drum.		
Hammer	Impact on nail			Use screw attachment
Impact chisel	Impact on stock			Use rotary hand milling machine
Materials handling	Impact of material	Prevent high material drops. Shield drop areas, especially for conveyor systems		Cover surface with resilient material or unload remotely
Steam cleaning	Escaping jet of steam, interaction with surface	Pass escaping steam through silencer or screen the cleaning area and use quieter nozzles.		

Note 1. Care should be taken when selecting a quieter process, so that ancillary equipment noise sources, such as cranes and compressors, are mitigated so they do not become new dominant noise sources.

## **Construction Noise Threshold Criteria**

### **3. Installation and Maintenance:**

- a. Install noise blanket shields with sound-absorptive surfaces facing the noise source.
- b. Maintain the moveable noise shields and repair damage that occurs, including, but not limited to, keeping noise shields clean and free from graffiti, and maintaining structural integrity. Promptly repair or replace gaps, holes, and weaknesses in the noise shields, and openings between, or under the noise shield blankets.

### **Moveable Construction Noise Barriers**

1. For greater noise reduction, install moveable paneled noise shields, barriers or enclosures adjacent to or around noisy equipment where required to meet the project noise limits. Noise control shields shall be made of panels featuring a solid panel with a weather-protected, sound-absorptive material on the construction-activity side of the noise shield.
2. Provide readily removable and moveable noise shields so that they may be repositioned, as necessary, to provide noise abatement for non-stationary and stationary processes along a construction corridor as the construction process moves.

### **3. Installation and Maintenance:**

- a. Install paneled noise shields with sound-absorptive surfaces facing the noise source.
- b. Maintain the moveable noise shields and repair damage that occurs, including, but not limited to, keeping noise shields clean and free from graffiti, and maintaining structural integrity. Promptly repair or replace gaps, holes, and weaknesses in the noise shields, and openings between, or under the noise shield panels.

### **Fixed Construction Noise Curtains**

1. For lesser noise reduction, install frame-mounted sound noise control curtains or noise control blankets in locations adjacent to or around noisy equipment as required to meet the noise limits specified in this document and to shield the public from excessive construction noise. Noise control curtains shall be made of a durable, flexible composite material featuring a noise barrier layer bonded to a weather-protected, sound-absorptive material on one or both sides. The supporting structure shall be engineered and erected according to applicable codes.
2. Noise control curtains shall be installed, as necessary, to provide greater noise abatement for non-stationary and stationary processes.
3. Installation, Maintenance and Removal
  - a. Noise control curtains shall be installed without any gaps and with the sound absorptive side facing the construction activity area.
  - b. Maintain the noise control curtains and promptly repair any damage that may occur. Gaps, holes or weaknesses in the curtain, or openings between the curtain and the ground shall be promptly repaired.

## **Construction Noise Threshold Criteria**

- c. The fixed noise control curtains and associated elements shall be completely removed and the site appropriately restored upon the conclusion of the construction activity.

### **Fixed Noise Control Barriers**

1. For greater noise reduction, install solid noise control panels or enclosures in locations adjacent to or around noisy equipment as required to meet the noise threshold criteria specified in this document and to shield the public from excessive construction noise. Noise control panels shall be made of a solid, heavy noise barrier material with a weather-protected, sound-absorptive material on the construction-activity side of the barrier. The supporting structure shall be engineered and erected according to applicable codes.
2. Noise control panels shall be erected, as necessary, to provide greater noise abatement for non-stationary and stationary processes.
3. Installation, Maintenance, and Removal
  - a. Solid noise control panels shall be installed without any gaps and with the sound absorptive side facing the construction activity area.
  - b. Maintain the noise control panels and promptly repair any damage that may occur. Gaps, holes or weaknesses in the panels or openings between the panels and the ground shall be promptly repaired.
  - c. The fixed noise control panels and associated elements shall be completely removed and the site appropriately restored upon the conclusion of the construction activity.

## **Sensitive Receptor Construction Noise Reduction Methods**

Feasible and reasonable receptor noise mitigation measures may be implemented to meet the construction noise threshold criteria. Examples of receptor noise reduction methods to reduce construction noise impacts at sensitive receptor locations are listed in this section. The implementation of one or more of these measures, along with those of the other sections, may be necessary to achieve compliance with the construction noise threshold criteria.

### **Receptor Building Interior Noise Control Measures**

1. For noise reduction at fixed, mid-term construction sites, install removable secondary acoustic window inserts (i.e., Quiet Window, or equal) to existing windows in sensitive receptor buildings as required to meet the noise threshold criteria specified in this document.
2. For noise reduction at fixed, long-term construction sites, install permanent replacement acoustic windows with an STC rating 5 dB greater than the construction noise reduction needed. Where sliding doors are exposed to excessive construction noise, acoustic sliding patio doors may also need to be installed. Careful attention must be taken to seal the frame airtight to the existing structure.
3. Install properly fitted, tubular compression-type weather strip gasketing around the door frames (jamb and head) and install automatic drop thresholds and threshold plates to exposed swinging doors. Careful attention must be taken to seal the existing door frame airtight to the existing structure.

## **Construction Noise Threshold Criteria**

### **Moveable Exterior Receptor Noise Control Barriers**

1. For construction along a construction corridor, install moveable paneled noise shields or barriers at noise sensitive receptor sites. Noise control shields shall be made of panels featuring a solid panel with a weather-protected, sound-absorptive material on the construction-activity side of the noise shield.
2. Provide readily removable and moveable noise shields so that they may be repositioned, as necessary, to provide greater noise abatement along a construction corridor as the construction process moves.
3. Installation and Maintenance:
  - a. Install paneled noise shields with sound-absorptive surfaces facing the noise source.
  - b. Maintain the moveable noise shields and repair damage that occurs, including, but not limited to, keeping noise shields clean and free from graffiti, and maintaining structural integrity. Promptly repair or replace gaps, holes, and weaknesses in the noise shields, and openings between, or under the noise shield panels.

### **Fixed Exterior Receptor Noise Control Barriers**

1. For noise reduction at fixed construction sites, install solid noise control panels at sensitive receptor locations as required to meet the noise threshold criteria specified in this document and to shield the sensitive receptor from excessive construction noise. Noise control panels shall be made of a solid, heavy noise barrier material with a weather-protected, sound-absorptive material on the construction-activity side of the barrier. The supporting structure shall be engineered and erected according to applicable codes.
2. Noise control panels shall be erected, as necessary, to provide greater noise abatement for non-stationary and stationary processes at fixed construction sites.
3. Installation, Maintenance, and Removal
  - a. Solid noise control panels shall be installed without any gaps and with the sound absorptive side facing the construction activity area.
  - b. Maintain the noise control panels and promptly repair any damage that may occur. Gaps, holes or weaknesses in the panels or openings between the panels and the ground shall be promptly repaired.
  - c. The fixed noise control panels and associated elements shall be completely removed and the site appropriately restored upon the conclusion of the construction activity.

## Figure D-2. Construction Noise Mitigation Form

### Part A –Construction Equipment Mitigation Measures

Project: \_\_\_\_\_ Contract No(s): \_\_\_\_\_ Construction Phase: \_\_\_\_\_

Measured By: \_\_\_\_\_ of \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

**IMPORTANT:** Attach construction equipment noise measurement location sketches (also identify other noise sources in area).

Construction Phase Equipment Inventory: \_\_\_\_\_ Overall Project Phase Noise Reduction Requirement<sup>1</sup> = \_\_\_\_\_ dBA.

Code Letter (a)	Equipment				Typical 50-Foot Noise Level (dBA) (f)	Measured 50-Foot Noise Level (dBA) (g)	Equipment Noise Mitigation Measure (h)	Measured 50-Foot Mitigated Noise (dBA) (i)
	Category (b)	Make & Model (c)	ID# (d)	HP (e)				
Example	Front End Loader	Caterpillar 988	50W043xxx	375	85	91	Critical muffler	79

**Notes:**

Note 1. The noise reduction requirement is the exceedance between the overall construction phase noise from Appendix C and the sensitive receptor noise threshold criteria.

Column (a): Code letter in sketch to indicate position of equipment during noise measurement.

Column (b): Equipment type from Table B-1.

Column (c): Equipment manufacturer and model.

Column (d): Unique identifier (ID), such as VIN or registration number.

Column (e): Equipment rated horsepower.

Column (f): Equipment typical noise level from Table B-1.

Column (g): Estimated noise level at 50 ft. If greater than the level in Column (f), mitigation measures (e.g. mufflers, lower throttle, etc.) shall be implemented.

Column (h): Noise mitigation measure(s) implemented to help achieve compliance with the noise threshold criteria at the sensitive receptor location.

Column (i): Estimated or measured mitigated noise level at 50 ft

## Figure D-3. Construction Noise Mitigation Form

## Part B – Propagation Path Mitigation Measures

Project: \_\_\_\_\_ Contract No(s): \_\_\_\_\_ Construction Phase: \_\_\_\_\_

Measured By: \_\_\_\_\_ of \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(Attach Construction Vicinity Sketch)

Sensitive Receptor Measurement Location during Construction Activities <u>Without</u> Mitigation	Measured Noise Level at Receptor Location, (dBA)*			
	Ambient $L_{eq}$ (dBA)	$L_{eq}$ w/ Project (dBA)	Ambient $L_{max}$ (dBA)	$L_{max}$ w/ Project (dBA)
Noise Threshold Criteria >	n/a		n/a	
1.				
2.				
3.				
4.				

Propagation Path Noise Abatement Measures

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

Anticipated Results

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**Construction Noise Threshold Criteria**

**Appendix D**

Sensitive Receptor Measurement Location during Construction Activities <u>With Additional</u> Mitigation	Measured Noise Level at Receptor Location, (dBA)*			
	Ambient L <sub>eq</sub> (dBA)	L <sub>eq</sub> w/ Project (dBA)	Ambient L <sub>max</sub> (dBA)	L <sub>max</sub> w/ Project (dBA)
<b>Noise Threshold Criteria &gt;</b>	n/a		n/a	
1.				
2.				
3.				
4.				

## Figure D-4. Construction Noise Mitigation Form

### Part C – Sensitive Receptor Measures

Project: \_\_\_\_\_ Contract No(s): \_\_\_\_\_ Construction Phase: \_\_\_\_\_

Measured By: \_\_\_\_\_ of \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(Attach Construction Vicinity Sketch)

Sensitive Receptor Measurement Location during Construction Activities <u>Without</u> Mitigation	Measured Noise Level at Receptor Location, (dBA)*			
	Ambient $L_{eq}$ (dBA)	$L_{eq}$ w/ Project (dBA)	Ambient $L_{max}$ (dBA)	$L_{max}$ w/ Project (dBA)
<b>Noise Threshold Criteria &gt;</b>	n/a		n/a	
1.				
2.				
3.				
4.				

#### Sensitive Receptor Noise Abatement Measures

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

#### Anticipated Results

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**Construction Noise Threshold Criteria**

**Appendix D**

Sensitive Receptor Measurement Location during Construction Activities <u>With Additional</u> Mitigation	Measured Noise Level at Receptor Location, (dBA)*			
	Ambient L <sub>eq</sub> (dBA)	L <sub>eq</sub> w/ Project (dBA)	Ambient L <sub>max</sub> (dBA)	L <sub>max</sub> w/ Project (dBA)
<b>Noise Threshold Criteria &gt;</b>	n/a		n/a	
1.				
2.				
3.				
4.				



# ASSOCIATED TRANSPORTATION ENGINEERS

100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509

Since 1978

Richard L. Pool, P.E.  
Scott A. Schell, AICP, PTP

FILED

OCT 21 2015

October 19, 2015

15087L01.LTR

Mr. George Flack  
Green Compass/Santa Clara Waste Water  
2775 North Ventura Road, Suite 209  
Oxnard, CA 93036

## **TRIP GENERATION ANALYSIS FOR THE SANTA CLARA WASTE TREATMENT PROJECT CUP MODIFICATION - SANTA PAULA, CALIFORNIA**

The CUP modification is for an upgrade to the existing waste water treatment facility. The modification would result in the upgrade of the facility's footprint and an increase in the total number of employees from 15 to 45. The number of weekly and average daily truck trips would not increase above the currently approved 500 weekly truck loads (166 average daily trips) over 6 days.

The project site is located at 815 Mission Rock Road in unincorporated Ventura County just west of the City of Santa Paula. Access to the project site would be provided by a driveway connection to Mission Rock Road and two driveway connections to Shell Oil Road. Figure 1 (attached) illustrates the project site plan. The following trip generation analysis was prepared to address the traffic generated by the CUP modification.



County of Ventura  
Initial Study  
PL15-0106

**Attachment 30 – October 19, 2015  
and April 25, 2017 Trip Generation  
Analysis**

Engineering • Plannir

Reports • Bikeways • Transit

### Project Trip Generation

For the purpose of estimating the number of trips which would be generated by the "project", ATE used operational data (attached) supplied by the applicant.

#### Existing Conditional Use Permit Trip Generation

The operational level assumed for the existing CUP is based upon the following criteria. Under it's current CUP, Santa Clara Waste Water is allowed to operate with 15 plant employees, 5 per shift and allowed 500 weekly truck loads or 166 average daily weekly truck trips. The following represents the average daily operations that occur:

Truck Trips: 166 average daily truck trips (83 in and 83 out)  
 15 Plant Employees: 30 average daily employee trips (15 in and 15 out)  
 - Plant employees 5 on three shifts all in place prior to the 7:00 - 9:00 A.M. peak hour period and the 4:00 - 6:00 P.M. peak hour period.

#### Proposed Conditional Use Permit Modification Trip Generation

Santa Clara Waste Water is proposing to expand its footprint at the Mission Rock Road location. The operational level assumed for the CUP modification is based upon the following criteria. The Mission Rock Road facility will operate with 45 plant employees, 15 per shift and allowed 500 weekly truck loads or 166 average daily truck trips. The following represents the average daily operations that potentially could occur:

Truck Trips: 166 average daily truck trips (83 in and 83 out)  
 45 Plant Employees: 90 average daily employee trips 45 in and 45 out)  
 - Plant employees 15 on three shifts all in place prior to the 7:00 - 9:00 A.M. peak hour period and the 4:00 - 6:00 P.M. peak hour period.

**Table 1**  
**Project CUP Trip Generation Comparison**

Project	ADT*
<u>Existing CUP:</u> Waste Treatment Facility	196
<u>Proposed CUP Modification:</u> Waste Treatment Facility	256
Net Change:	+ 60

\* ADT: Average Daily Trips

The CUP modification would result in a net increase is 60 average daily trips. Employee trips will continue to occur outside the A.M. and P.M. peak hour periods. Since the truck trips during the peak hour periods will remain at the current CUP level, the proposed CUP modification would not result in an increase in the peak hour trips.

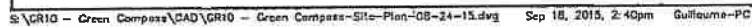
  
Associated Transportation Engineers

Richard L. Pool, P.E.  
President

RLP/DFN/wp

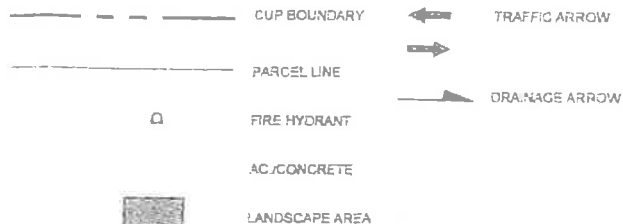
Attachment: Figure 1- Project Site Plan  
SCWW Operational Data





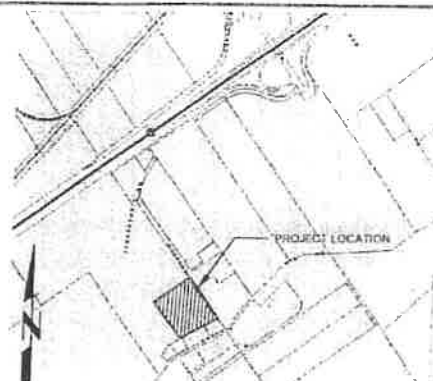


### LEGEND



### VICINITY MAP

N.T.S.



2018 Approved (LTP Equipment)	2021 Proposed Equipment
1. Aeration Basin (2)	1. Aeration Basin (2)
2. Thickener (2)	2. Thickener (2)
3. Clarifier (2)	3. Clarifier (2)
4. Centrifuge (2)	4. Centrifuge (2)
5. Centrifuge (2)	5. Centrifuge (2)
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96. Centrifuge (2)	96. Centrifuge (2)
97. Centrifuge (2)	97. Centrifuge (2)
98. Centrifuge (2)	98. Centrifuge (2)
99. Centrifuge (2)	99. Centrifuge (2)
100. Centrifuge (2)	100. Centrifuge (2)

STILL NEED TO FINALIZE:

- 23. AWWINGS, CONCRETE PADS/PAVING
- 24. STORMWATER BASIN OR DETENTION OR TREATMENT.

**SESPE**  
CONSULTING, INC.

374 Pol Street, Ste. 200 • Ventura, CA 93001  
(805) 275-1515 • www.sespeconsulting.com

### SCWW WASTE TREATMENT FACILITY PROPOSED SITE PLAN

DATE: JULY 2015



FIGURE NUMBER

1

### COMPARISON OF EXISTING & PROPOSED TRAFFIC LIMITS

ITEM	CURRENT CUP 960 LIMITS	PROPOSED LIMITS
Hours of Plant Operation	Mon – Sat. 5:00 a.m. to 11:00 p.m., Closed on Sundays Any time during any day of the week to meet demands , or emergencies	24 hours/day, 365 days/year (for onsite treatment operations, different schedule for truck deliveries)
Truck Deliveries to & from the Facility	Mon. – Fri., 7:00 a.m. to 5:00 p.m. Saturday 8:00 a.m. to 3:00 p.m. No trucking on Sunday	Mon. – Fri., 7:00 a.m. to 7:00 p.m. (2 hours longer) Saturday 8:00 a.m. to 3:00 p.m. No trucking on Sunday
Truck Trip Limits <sup>1</sup>	4 supply deliveries per week 80 waste deliveries per day 16 outgoing waste/recyclable vehicle trips per week <i>Equates to 500 trucks (1,000 one way trips) per week <sup>2</sup></i> <i>No max. day limit although could have 100 trucks in one day – 4+80+16 = 100</i>	Weekly average limit of 500 trucks (1,000 one way trips) per week. Applied to overall truck traffic, does not differentiate between the types of truck trips. A daily maximum limit of 100 trucks (200 one way trips) in any one day. 500 truck per week limit would still apply.
Employees	Maximum of 15 employees per day (30 one way trips) from application dated 2/1/06 – 5 employees per shift	Maximum of 15 employees per 8-hour shift = 45 employees, 90 one way trips More likely scenario (at 100% operation): 6:00 AM – 2:00 PM = 15 employees 2:00 PM – 10:00 PM = 15 employees 10:00 PM – 6:00 AM = 10 employees

1 - Existing CUP 960 Language: SCWW would be limited to a maximum of four supply deliveries per week, 80 waste deliveries per day, and 16 outgoing waste/recyclable product vehicle trips per week. SCWW would have a maximum of 15 employees per day.

2 - Calculation of existing CUP 960 truck trip limits:

Trip Type	Weekly Trucks
Supply Deliveries	4
Outgoing waste/recyclable product	16
Waste Deliveries	480 (80 per day, 6 days/week)
Existing CUP 960 Weekly Total:	500

#### Summary of changes:

- Truck traffic would occur 12 hours per day instead of 10 hours per day Monday to Friday (fewer average trips per hour).
- Setting a maximum day limit of 100 trucks per day. 500 truck per week limit would still apply.
- Maximum of 90 one way employee trips per day instead of 30.



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Since 1978

Richard L. Pool, P.E.  
Scott A. Schell, AICP, PTP

April 25, 2017

15087L02.LTR

Mr. George Flack  
Green Compass/Santa Clara Waste Water  
2775 North Ventura Road, Suite 209  
Oxnard, CA 93036

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The project site is located at 815 Mission Rock Road in unincorporated Ventura County just west of the City of Santa Paula. Access to the project site would be provided by a driveway connection to Mission Rock Road and two driveway connections to Shell Oil Road. Figure 1 (attached) illustrates the project site plan. The following trip generation analysis was prepared to address the traffic generated by the CUP modification.

### Project Trip Generation

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**Table 1**  
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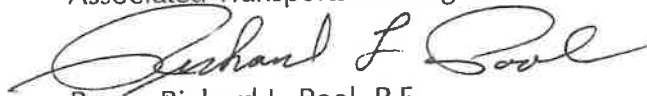
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Caltrans District 7 staff has requested a new traffic study to evaluate project impacts to Caltrans facilities. However, since there is no change in existing A.M. and P.M. project peak hour trips, there will be no additional impacts to the Caltrans facilities. There is no need for additional evaluation of State Route 126, the State Route 126 Eastbound Ramps at Briggs Road, Briggs Road or Pinkerton Road during the A.M. and P.M. peak hours.

Associated Transportation Engineers

  
By: Richard L. Pool, P.E.  
President



RLP/DFN

Attachment: Figure 1- Project Site Plan  
SCWW Operational Data

### COMPARISON OF EXISTING & PROPOSED TRAFFIC LIMITS

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- Setting a maximum day limit of 100 trucks per day. 500 truck per week limit would still apply.
- Maximum of 90 one way employee trips per day instead of 30.

## Rosengren, Franca

---

**From:** Mouderrres, Badaoui <badaoui.mouderrres@oxnard.org>  
**Sent:** Thursday, March 08, 2018 10:08 AM  
**To:** Rosengren, Franca  
**Cc:** Castro, Omar; Thien Ng; Rosemarie Gaglione; Lustig, Rebecca; Ozdy, Andrea  
**Subject:** Re: Change of Applicant/Operator for PL15-0106 Santa Clara Wastewater Treatment Facility CUP

Hi Franca,

Per your request please accept this email as confirmation that the City of Oxnard has availability and sewer capacity to handle and treat the proposed 309 gallons per day of domestic waste from this facility coming from toilet, lavatory faucet, kitchen sink, and emergency shower use. Please know the following:

1. This connection is over 10 miles away from the source.
2. This will be a new service.
3. The pipeline required to transfer this waste is known to be compromised as a number of issues need to be addressed before the City approves a waste discharge.

Let me know if you have any questions.

Thanks,

Badaoui Mouderrres, PE  
Technical Services & Water Quality Manager

City of Oxnard Public Works  
251 South Hayes Avenue,  
Oxnard, CA 93030  
Direct (805) 385-8153  
Fax (805) 385-8137  
[Badaoui.Mouderrres@oxnard.org](mailto:Badaoui.Mouderrres@oxnard.org)

**Public Works Department**

**Wastewater Division**

6001 South Perkins Road  
Oxnard, California 93033-9047  
Tel 805.488.3517



March 29, 2019

**Franca Abbatiello Rosengren** | Senior Planner  
Planning Programs Section  
Commercial and Industrial Permits Section  
County of Ventura, CA

**Re: Confirmation of Details - Santa Clara Waste Water Facility 815 Mission Rock Rd, Santa Paula, CA**

Dear Franca:

We have received your request regarding the proposed facility at 815 Mission Rock Rd, Santa Paula, CA. Based on our review of the submitted questions, we have the following comments:

1. Did the City receive odor complaints that were directly attributed to the SCWW facility? If so, what steps have been taken by SCWW to reduce the odor from the sewer line connection?

*The City received many odor complaints during the period of operation of the SCWW facility. They were cited numerous times for high hydrogen sulfide (source of odors) levels in their discharge. The SCWW has been out of business since 2015 and therefore, there is no discharge from the facility.*

2. Was the 10-22-2014 Cease and Desist Order actually issued to SCWW for Gross Beta exceedance? Do you have a signed copy of this letter? Is the 2014 Notice of Violation still open with the City of Oxnard or has this been closed and abated?

*A Cease & Desist Order was issued for the Gross Beta Exceedance on 10-22-2014 (signed copy attached). The 2014 Notice of Violation has been closed since the dissolution of SCWW in 2015. The SCWW Industrial Wastewater Discharge Permit has been closed and is no longer in effect.*

3. Does the City consider the existing pipeline as compromised because of the exceedance of certain chemical thresholds and because of the 2015 spill/leak?

3/29/191

Pgae 1 of 4

*The City cannot make a determination at this time about the integrity of the existing pipeline due to lack of data and information. The City will require integrity testing of the pipeline before its continued use. Testing requirements may include pressure testing, videotaping, structural integrity testing and cleaning, at a minimum. In addition, documentation of ownership; easement and right-of-way agreements; and a hydraulic analysis will be required before continued use.*

4. What were the results of the "Trunk Line Flushing Procedure OP SCWW -01" to flush the SCWW discharge line between the SCWW treatment facility and the collection system outlet? Did all of that get done according to plan? When was it approved by the City?

*The results of the flushing were never received by the City. There was a failure of the pipeline during initial testing. Therefore, the test was never completed to our knowledge and not approved by the City. The discharge line has since been physically blocked from the Oxnard sanitary sewer system.*

5. Do you have a copy of the August 14, 2014 Penfield and Smith report as mentioned in the attached timeline?

*We do not have a copy of the report from Penfield and Smith dated August 14, 2014.*

6. Did the City conduct a separate investigation on the reason why the 2015 pressure test resulted in leak/spill? According to SCWW, an unknown party had, at some time prior to the 2015 pressure test, made an excavation at the location of the leak, removed the asphalt concrete, excavated to the pipe and made two parallel cuts in the steel pipe. Without repairing the pipe, the unknown party filled around the pipe with cement, backfilled with soil, and replaced the asphalt concrete. Do you agree with SCWW's reason why the pipe leaked?

*The City did not conduct an independent investigation. We have no documentation of previous work on the pipe and could not independently confirm the reason for the spill.*

Here are some answers to the following questions:

1. What is a baseline monitoring report and to whom does the Permittee provide it?

*A Baseline Monitoring Report (BMR) is the initial step for the Permittee to provide system information that is required for the permitting process. The BMR is submitted to the City of Oxnard Source Control group.*

2. To whom does the Permittee need to provide the CWT BMPs Certificate?

*The Permittee needs to provide the CWT BMPs Certification to the City.*

3. What is a pre-treatment system?

*A pre-treatment system is a wastewater treatment system consisting of the necessary pollution control equipment that a Permittee is required to install, operate and maintain to comply with Industrial Wastewater Discharge Permit limits prior to discharging wastewater into a Publicly Owned Treatment Works.*

4. The City states that the Permittee would need to "obtain all other necessary permits and satisfy regulations to ensure compliance with local, state and federal regulations. What are these "other" regulations and how will the Permittee be required to comply with them?

*Besides local (City and County) permit requirements the Permittee may be required to meet State and Federal statutes and regulations originating under the State and Federal water quality laws, solid and hazardous waste laws, public resources law, and recycling laws as set forth, including but not limited to laws and regulations implemented by the Federal Environmental Protection Agency, the State Water Resources Control Board, Cal Recycle, and the California Department of Toxic Substances Control. The Permittee is required to comply with the most stringent of all applicable regulations under the oversight of the regulatory authority, including the local Regional Water Quality Control Board and the local Certified Unified Program Agency. The Permittee is also required to ensure that its discharges (i) not contain any substances in concentrations toxic to human, animal, plant, or aquatic life and (ii) not include waste resulting from the combustion of toxic or hazardous wastes.*

5. If the Permittee complies with all of the City requirements in order to obtain a new Industrial Wastewater Discharge Permit, will all of the pipeline issues that you described in the attached document, such as exceedance of chemicals and the 2015 leak/spill, be considered resolved?

*No, the Permittee shall prove that the pipeline issues are completely resolved and that the pipeline passes an integrity test and has proper documentation for ownership. They will also be required to submit and implement an Operation and Maintenance Plan for the pipeline.*

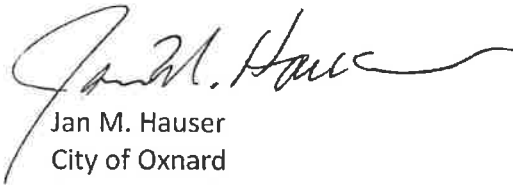
6. How often should a discharge line be tested for integrity? Does the City have a recommended standard for this?

*There are no standards for integrity testing of wastewater pipelines. The requirement for integrity testing may be based on many things such as age, history, use, etc.*

If you have any questions, do not hesitate to contact me

Sincerely,

City of Oxnard

A handwritten signature in black ink, appearing to read "Jan M. Hauser", with a long, sweeping horizontal stroke extending to the right.

Jan M. Hauser  
City of Oxnard  
Wastewater Division Manager  
6001 Perkins Road  
Oxnard, CA 93033  
805-271-2205 (office)  
805-844-5501 (cell)  
Jan.hauser@oxnard.org

CC: Rosemarie Gaglione, Oxnard Public Works Director  
Thien Ng, Oxnard Assistant Public Works Director  
Badaoui Mouderrres, Oxnard Technical Services Manager  
Stephen Fischer, Oxnard City Attorney

Attachment: 2014 Cease & Desist Order  
3210009.1



Public Works Department • Water Resources Division - Wastewater Section  
6001 South Perkins Rd. • Oxnard, CA 93033-9047 • (805) 488-3517 • Fax (805) 488-2036

October 22, 2014

HAND DELIVERED

Mr. Charles R. Mundy  
SANTA CLARA WASTE WATER COMPANY  
P. O. Box 3239  
Ventura, California 93006-3239

Subject: CEASE AND DESIST ORDER-SANTA CLARA WASTEWATER  
(Industrial Wastewater Discharge Permit No. OC-8)

Dear Mr. Mundy:

The letter serves to inform you that the City of Oxnard Wastewater Treatment Plant recently received a slug discharge that caused an exceedance of our maximum daily effluent limit for Gross Beta radioactivity.

In response to this exceedance, Technical Services Program-Source Control (TSP-SC) staff initiated an investigation to identify the source of the radioactivity. On September 24, 2014, TSP-SC staff collected a wastewater sample from your facility at the sample port on Wooley Road and Richmond Avenue. The sample results indicated a Gross Beta concentration of 4400 pCi/L. Pursuant to Section 19-104 and Section 19-25 of the Oxnard Municipal Code, you are hereby ordered to Cease and Desist discharges from your facility in violation of your permit. This step is being taken for the protection of the City's collection system and wastewater treatment plant, and for the protection of the environment, as allowed under City Code Chapter 19, Article I., Section 19-104 and 19-25. These sections state that:

**SEC. 19-104. CEASE AND DESIST ORDERS.**

*(A) When the city manager finds that a user has violated, or continues to violate, any provision of this article, an IWD permit or order issued hereunder, or any pretreatment standard or requirements, or that the user's past violations are likely to recur, the city manager may issue an order to the user directing the user to cease and desist all such violations and directing the user to:*

- (1) Immediately comply with all applicable requirements; and*
- (2) Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge.*

*(B) Issuance of a cease-and-desist order shall not be a bar against, or a prerequisite for, the taking of any other action against the user.*

---

**SEC. 19-25. PROHIBITED; DISCHARGE STANDARDS.**

*(A) No person shall introduce or cause to be introduced to the system, directly or indirectly, any pollutant or wastewater that causes pass through or interference. These general prohibitions apply to all persons, whether or not they are subject to categorical pretreatment standards or any other federal, State or local pretreatment standards or requirements.*

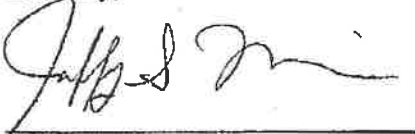
*(B) No person shall introduce or cause to be introduced into the system the following pollutants, substances, or wastewater:*

*(11) Wastewater containing any radioactive wastes or isotopes except in compliance with applicable State or federal regulations.*

You are hereby ordered to come into compliance with all of the conditions and requirements of your IWDP and Chapter 19 of the Oxnard City Code.

The implementation of this directive is essential to protect the collection system, worker health and safety, and public nuisance. Should you have any questions about this directive, please feel free to call Mr. Jeremy Grant, Wastewater Environmental Specialist, at (805) 385-3965.

Sincerely,



Jeffrey S. Miller  
Interim Wastewater Superintendant

# **DRAFT**

**EVALUATION OF THE  
SANTA CLARA WASTE WATER COMPANY  
PIPELINE**

**PREPARED FOR**

**MR. BOB COLE**

**PENFIELD & SMITH  
2530 FINANCIAL SQUARE DRIVE, SUITE 110  
OXNARD, CALIFORNIA 93030**

**JUNE 15, 1990**

**W.O. 9465.01**



**County of Ventura  
Initial Study  
PL15-0106  
Attachment 33 – 1990 Pipeline  
Evaluation Report**

**Penfield & Smith**  
ENGINEERS • SURVEYORS

2530 FINANCIAL SQUARE DRIVE, #110  
OXNARD, CALIFORNIA 93030  
805-983-7499 • FAX 805-983-1826

111 EAST VICTORIA STREET  
P.O. BOX 98 • SANTA BARBARA, CALIFORNIA 93102  
805-963-9532 • FAX 805-966-9801

1000 MILL STREET  
SAN LUIS OBISPO, CALIFORNIA 93401  
805-544-5445 • FAX 805-544-4872  
**W.O. 9465.01**

June 15, 1990

VenVirotek  
Mr. Bob Cole  
1536 Eastman Ave., Suite 6A  
Ventura, CA 93003

**SUBJECT: PIPELINE EVALUATION REPORT FOR  
SANTA CLARA WASTE WATER PIPELINE.**

Attached are two (2) copies of the Draft Report for the subject project. Due to timing constraints, we have decided to submit the report prior to receiving the results of the ultrasonic testing of the pipeline and influent water quality testing. These tests will not have any impact on the flow capacity calculations.

Please review the report and advise me of your comments. Call me at (805) 983-7499 if you wish to schedule a meeting. I will be on vacation through June 21, 1990.

Very truly yours,

**PENFIELD & SMITH**



Patrick J. Reeves  
Principal Engineer

PJR:lb

## **PURPOSE OF REPORT**

This report was prepared to present the results of an evaluation performed on the Santa Clara Waste Water Company Pipeline. The evaluation was intended to determine acceptable capacities of the pipeline under current use and also with proposed additions of flow from; a) The new Ventura County Jail, b) 40 Acres of planned industrial development in Saticoy, and c) Increased flow from the Santa Clara Waste Water Company Plant. The evaluation was also intended to determine the corrosive effects on the pipeline from industrial and domestic wastewater.

## **BACKGROUND**

The Santa Clara Waste Water Company (SCWWC) Pipeline is a nominal 10-inches in diameter and is 66,897 feet (12.7 miles) long. It is a cement mortar lined steel pipe and the thickness of the cement mortar may vary due to the corrosive effects of the wastewater. The inside diameter is assumed to be 9.4 to 9.6 inches. The pipeline was installed in 1959. A sample of the pipeline was measured, yielding a steel thickness of 0.15 inches, and a cement mortar thickness of 0.55 inches, (3 distinct layers). The outside diameter of the steel pipe was measured as 10.75 inches. The pipeline conveys industrial wastewater from the SCWWC Plant located near Mission Rock Road to a connection with the City of Oxnard's transmission main located near Wooley Road and Mayflower Avenue. Currently, the maximum daily flow is about 0.47 MGD. Oxnard City Staff (L. Fargo) has indicated that the maximum allowable flow per day is 0.34 MGD. The outflow empties into an open reservoir and is not submerged. The inflow elevation is approximately 43 feet. A plan and profile of the pipeline is shown on a folded drawing located at the end of this report, (Exhibit A). The wastewater is currently pumped by one of two pumps located at the SCWWC Company. One pump produces 30

psi with a calculated flow of about 500 gpm and the other produces 48 psi with a calculated flow of about 600 gpm.

There have been no reported odor problems or surcharge problems associated with the discharge point into the City of Oxnard sewer system (L. Fargo). The water quality of the wastewater has complied with conditions of the waste discharge permit (Appendix), with the exception of periodic problems with COD, BOD, and total toxic organics. There are plans underway to remedy the total toxic organics problem. The COD problem is no longer a concern due to new improvements to be provided at the City's Wastewater Treatment Plant. The City will no longer regulate this constituent. The BOD problem can be resolved by the addition of various chemicals as discussed in the Recommendation Section of this report.

The SCWWC Plant may expand in the future, producing increased flows. Additional flows are also proposed to enter the pipeline from the new Ventura County Jail and from 40 acres of planned industrial zoned land in Saticoy. It is anticipated that on-site storage and pre-treatment may be needed at these locations.

#### **METHODOLOGY**

Invert elevations of the SCWWC Pipeline were obtained from construction plans acquired from Brain Massey of the SCWWC. From this information a profile was drawn which was then modified to show the major high and low points and to show general slopes of the pipeline (See Exhibit A). Information pertaining to the barranca crossings, the Santa Clara River bridge crossing, changes or additions to the original pipeline construction, and end conditions were acquired from Bill Cook of the SCWWC or from visual inspection conducted by this office.

Theoretical flows were computed using the Hazen-Williams equation for friction losses ( $C=120$  and  $130$ ). Minimum flows were obtained assuming a minimum velocity within the pipeline of  $3 \text{ ft/s}$ .

Corrosion of the cement mortar lining of the pipeline is assumed to be a direct result of the production of hydrogen sulfide from the wastewater. The amount of hydrogen sulfide produced during different conditions was computed using the Pomeroy-Parkhurst equation (See calculations in Appendix).

Existing flow information was provided by Brian Massey and is attached in the Appendix of this report. Based on conversations with City Personnel and Mr. Massey, the information is suspect, and should be verified by a careful calibration of the system flow meters, or installation of new flow meters at the outlet to the City sewer system.

## DISCUSSION

Currently the flow is pumped at either  $30 \text{ psi}$  or  $48 \text{ psi}$ . Effluent within the pipeline will not gravity flow since there are high points which must be overcome. It was found that the pipeline is flowing full throughout its entire length when either of the pumps is operating. Table 1 shows flows which can be achieved in the pipeline with the given pressures.

TABLE 1

<u>PRESSURE</u>	<u>LOW RANGE</u>		<u>HIGH RANGE</u>	
	<u>GPM</u>	<u>VELOCITY</u>	<u>GPM</u>	<u>VELOCITY</u>
30 psi	490	2.46	610	2.75
48 psi	540	2.70	670	3.03
100 psi	660	3.33	820	3.73
150 psi	760	3.86	950	4.32

A minimum pressure of 25 psi must be supplied for the flow to overcome the high point at STA 518 + 17.96.

Table 2 on the next page illustrates the range of flows in million gallons per day which can be achieved by applying the appropriate amount of pressure and horsepower. Table 3 provides a matrix of flows which could flow in the pipeline given a designated pump with a certain horsepower working at 60% efficiency, 24 hours per day, 7 days per week.

TABLE 2

PIPELINE FLOW CAPACITY				
INPUT PRESSURE (PSC)	LOW RANGE (MGD)	HIGH RANGE (MGD)	AVERAGE (MGD)	REQ. PUMP <sup>1</sup> (HP)
Minimum	0.56	0.71	0.64	----
30	0.69	0.88	0.79	27
48	0.78	0.96	0.87	59
75	0.87	1.08	0.98	103
100	0.95	1.18	1.07	150
150	1.09	1.37	1.23	258

<sup>1</sup> Assume 60% efficiency

TABLE 3

POTENTIAL SOURCES OF FLOW VS. HP <sup>3</sup>						
SOURCE	MIN. (MGD)	27 HP (MGD)	59 HP (MGD)	103 (MGD)	150 (MGD)	2258 (MGD)
Existing Plant <sup>1</sup>	.259	.259	.259	.259	.259	.259
Ultimate Jail	.245	.245	.245	.245	.245	.245
Saticoy 40 Acres	.136 <sup>2</sup>	.208	.208	.208	.208	.208
Potential Plant Expansion	---	.078	.158	.268	.358	.518
Total Flow	0.64	0.79	0.87	0.98	1.07	1.23

<sup>1</sup> Maximum month, average day

<sup>2</sup> Less than required flow

<sup>3</sup> Assumes 24 hr/day - 7 days/week

The proposed Ventura County Jail will be developed in three phases. The final phase will hold 2307 prisoners. The wastewater line from the jail is to be tied into the SCWWC Pipeline at the Todd Barranca (See Exhibit A). The invert elevation at this point is about 190 feet. The first phase will introduce 63,800 gpd (EIR) to the pipeline. This is 76 gpm over a 14-hour period or 44 gpm over a 24-hour period. The final phase will produce 245,300 gpm (EIR) which is 292 gpm in 14 hours or 170 gpm in 24 hours. If this flow is introduced to the pipeline during a time when the SCWWC is pumping at 30 psi, the jail would have to produce a pressure greater than 21 psi. There is a high point in the SCWWC pipeline at STA 518 + 17.96 which is downstream of the proposed County Jail tie-in. If flow is introduced to the pipeline from the jail during a time when the SCWWC is not pumping, a minimum pressure of 13.8 psi and a minimum flow of 662 gpm must be produced by the jail to maintain a velocity of 3 ft/s. This would require the 63,800 gpd of the first phase to be pumped into the line entirely within 1.6 hours and the 245,300 gpd of the final phase would have to be pumped into the line within 6.2 hours. In order for these conditions to be met, a holding tank would have to be constructed at the jail site to retain the waste until it is to be pumped into the pipeline. As an alternative, the flow could be discharged at a much lower rate if there is already adequate flow in the pipeline.

Approximately 40 acres of industrial zoned land is to be developed in the Saticoy area. If this land is developed industrially, the City of Ventura projects that the waste produced will be approximately 5,200 gallons/acre/day or 0.208 MGD. If this land is developed commercially, the waste produced will be approximately 3,900 gallons/acre/day or 0.156 MGD. For the industrially developed case, the flows would be 248 gpm in a 14-hour time period and 144 gpm in a 24-hour time period. If

this flow is introduced into the pipeline during a time when the SCWWC is pumping at 30 psi, it would require a pressure greater than 15 psi to discharge the flow. If flow from the developed 40 acres is introduced to the pipeline during a time when the SCWWC is not pumping, a minimum pressure of 8 psi and a minimum flow of 662 gpm must be maintained to assure a velocity within the pipeline of 3 ft/s.

#### RECOMMENDATIONS

- ♦ It is recommended that a velocity of 3 ft/s be maintained within the pipeline when it is flowing to prevent sediment build-up. This velocity requires a flow rate of 662 gpm.
- ♦ The existing 30 psi and 48 psi pumps at the SCWWC are inefficient for the existing use. It is recommended that they be replaced with pumps which would more efficiently produce the required pressure of 25 psi and a flow rate of 662 gpm.
- ♦ There is adequate capacity in the SCWWC pipeline to serve the ultimate County Jail, and depending on the horsepower applied, there is adequate capacity to serve the Saticoy industrial land and increased SCWWC Plant flow.
- ♦ Provide non-destructive ultrasonic inspection of the pipeline to identify the existing thickness of the pipeline in several locations.
- ♦ Additional visual (video) inspection of the interior lining of the pipe for the entire length of the SCWWC pipeline is recommended as normal maintenance now, and every 5 years thereafter.

- ◆ Install a pressure sustaining valve or appurtenance at the discharge end of the pipeline to keep the interior lining of the pipeline submerged at all times.
- ◆ If the proposed Jail or Saticoy Industrial Area is served, a backflow preventer or check valve will be required at the SCWWC Plant to prevent their inflow from entering the SCWWC Plant.
- ◆ Require all inflow from new customers to have a pH in excess of 7.2.
- ◆ Install a flow meter at the discharge end of the SCWWC pipeline. Equip the installation with telemetry to advise the SCWWC Plant of flow conditions. Eventually the telemetry system may also be necessary to control the inflow from the proposed Jail and/or Saticoy Industrial Area.
- ◆ Depending on the proposed operation of the SCWWC pipeline, consider requiring new customers to provide storage for peak flow conditions.
- ◆ Provide written correspondence to the City of Oxnard requesting an amendment to the existing Industrial Wastewater Discharge Permit. Identify all potential customers, proposed flow rates, and anticipated chemical makeup of the wastestream.
- ◆ Work with the City of Oxnard to identify the City's pipe conveyance network capacity downstream of the SCWWC pipeline discharge point.
- ◆ Complete the installation of the equipment at the SCWWC Plant which will reduce the effluent total toxic organics.

- ◆ During periods of high biological oxygen demand (BOD), consider adding either hydrogen peroxide (oxygen) or oxidizing agents such as ferrus chloride, ferric chloride, or chelated iron solution (catalytic), at the SCWWC Plant.
- ◆ Continue to maintain the SCWWC pipeline with monthly cleaning (neoprene "pig").
- ◆ Perform a battery of water quality tests know as "Generator Self Certification". These tests include corrosivity, reactivity, flammability, and aquatic bioassay (96 hour fish kill).
- ◆ Do not plan on exceeding 100 psi with the pump discharge pressure at the SCWWC Plant. This would limit the pipeline capacity to 1.07 MGD.

## APPENDIX

- 1). Industrial Wastewater Discharge Permit
- 2). Calculations for Hydrogen Sulfide
- 3). Flow Calculation
- 4). Flow Records
- 5). Water Quality Test Results
- 6). Exhibit "A", Plan and Profile Drawing



COPY

Permit No: 43

CITY OF OXNARD  
SOURCE CONTROL PROGRAM  
INDUSTRIAL WASTEWATER DISCHARGE PERMIT

Company Name: Santa Clara Waste Water Company  
Mailing Address: Post Office Box 4156  
Ventura, California 93004  
Facility Address: 815 Mission Rock Road  
Santa Paula, California 93060

The above named Industrial User is authorized to discharge industrial wastewater to the City of Oxnard's sewerage system in compliance with Chapter 25 of the Oxnard City Code, which by reference is incorporated herein as if fully set forth, and all applicable provisions of Federal or State law or regulation, and in accordance with any discharge point(s), effluent limitations, monitoring requirements, and any other conditions as herewith attached.

This permit does not exempt the operator(s) of this facility from compliance with any other laws, regulations, or ordinances which may be applicable; and/or leaves unaffected any further restraint(s) on the disposal of wastewater at this site which may be contained in other statutes or required by other agencies.

This permit is granted in accordance with the application filed on November 20, 1986, and in conformity with plans, specifications, and other data submitted to the City's Source Control Program (SCP) in support of the above application.

Effective this 1st day of January, 1988.

To expire the 30th day of June, 1988.

  
Approved by:

Robert B. Montgomery, R.S.  
Environmental Control Supervisor

- 9-5

930-12 11-20

PART I - WASTEWATER DISCHARGE LIMITATIONS

The Industrial User shall comply with the effluent limitations specified below:

MAXIMUM CONCENTRATIONS  
(Expressed in mg/L\*)

<u>PARAMETER</u>	<u>LOCAL LIMIT</u> <u>(DAILY MAXIMUM)</u>
Biochemical Oxygen Demand (BOD)	600
Cadmium (Cd)	3.0
Chemical Oxygen Demand (COD)	1800
Chromium, total (Cr)	3.0
Chromium, hexavalent (Cr+6)	0.1
Copper (Cu)	3.0
Hydrogen Sulfide, dissolved (H <sub>2</sub> S)	0.1
Lead (Pb)	3.0
Nickel (Ni)	3.0
Oil & Grease (O&G)	100
pH (minimum)	6.0**
pH (maximum)	10.0**
Suspended Solids (SS)	800
Total Toxic Organics (TTO)	1.0
Zinc (Zn)	3.0

\*Unless Otherwise Specified

\*\*pH Units

PART II - MONITORING REQUIREMENTS

<u>PARAMETER</u>	<u>MONITORING FREQUENCY</u>	<u>SAMPLE TYPE</u>
Biochemical Oxygen Demand (BOD)	1-Day/Week	1
Cadmium (Cd)	1-Day/Month	1
Chemical Oxygen Demand (COD)	1-Day/Week	1
Chromium, total (Cr)	1-Day/Month	1
Chromium, hexavalent (Cr+6)	1-Day/Month	1
Copper (Cu)	1-Day/Month	1
Hydrogen Sulfide, dissolved (H <sub>2</sub> S)	1-Day/Week	2
Lead (Pb)	1-Day/Month	1
Nickel (Ni)	1-Day/Month	1
Oil & Grease (O&G)	1-Day/Week	2
pH	1-Day/Week	2
Suspended Solids (SS)	1-Day/Week	1
Volatile Organics	1-Day/Month	2
Zinc (Zn)	1-Day/Month	1
Remaining Priority Pollutants	1-Day/Year	1&2

(1) 24-Hr. flow proportional composite

NOTE: Where the Industrial User does not have the capability of flow measurement, a time-weighted composite may be acceptable.

(2) Grab

Wastewater analyses shall be performed by a laboratory certified by the State Department of Health Services for the constituent(s) being analyzed. If the laboratory used or proposed for use by the Industrial User is not certified by the California Department of Health Services, or due to restrictions in the State's laboratory certification program, or in cases where certification does not exist for other reasons, the discharger shall be considered in compliance with this provision provided:

- A. Data results remain consistent with results of samples collected by the SCP;
- B. A quality assurance program is utilized by the laboratory, which includes a procedures manual (this manual shall be made available for inspections by the SCP); and
- C. Certification is pursued in good faith and obtained as soon as possible after the program is reinstated.

PART III - SPECIAL CONDITIONS/REQUIREMENTS

1. The Industrial User shall develop, within 3 months of the effective date of this permit, an Influent Monitoring Program. To ensure that only wastewaters for which its facility is designed to treat are accepted. The program proposal shall be submitted to the Source Control Program by March 31, 1987.
2. The Industrial User shall notify the SCP at least seventy-two (72) hours prior to commencing any line cleaning activities.
3. The Industrial User is only permitted to accept wastewater from the following sources:

- |  |                        |
|--|------------------------|
| /a. Union Oil (Stewart, Richardson, Snyder, Dryden, and Mandalay Leases) | k. Joe Aidlin          |
| /b. Sage Energy (Saticoy, Santa Paula, and Edwards Leases)               | /l. Mobil              |
| /c. Concordia Resources  | Water Softener Brine   |
| /d. Hamp Oil   | m. Hasa Chemical       |
| e. Thornbury   | n. Keysor Century      |
| f. Exxon U.S.A.  | o. Milum Textile       |
| g. L. Barker   | p. Weyerhaeuser        |
| h. Hunter Oil  | q. United              |
| i. B. J. Titon   | /r. Pacific Water      |
| j. T&T Energy Services Co.   | s. Henry Mayo Hospital |

The Industrial User shall notify the SCP, within seven days, regarding any deletions from the aforementioned list. For the purposes of this Permit a change of ownership shall be defined as a deletion.

3. The Industrial User shall obtain approval from the SCP prior to the acceptance of wastewater from a new source.

PART IV - REPORTING REQUIREMENTS

1. The Industrial User shall immediately notify the SCP upon any accidental or slug discharge to the City's sewerage system. Formal written notification discussing the circumstances of the discharge and steps taken to prevent future occurrence shall be submitted to the City within five (5) days following the verbal notification.
2. The Industrial User shall notify the SCP, in writing, prior to the introduction of any new source of wastewater or pollutants or any substantial change in the volume or characteristics of the wastewater being introduced into the City's sewerage system from the User's industrial processes.
3. The Industrial User shall verbally notify the SCP of any upset of its pretreatment system that may place its wastewater discharge in a state of non-compliance, with wastewater discharge limitations contained in this permit or other limitations specified in the City's Ordinance. This notification shall be made within twenty-four (24) hours of first being aware of the upset. A detailed written report shall be submitted to the SCP within five (5) days following verbal notification and shall contain a description of the upset and its cause, the duration of the upset (including exact dates and times) or anticipated duration; and the steps taken or planned to prevent recurrence.
4. The Industrial User shall submit periodic Self-Monitoring Reports to the SCP. These reports are to be submitted according to the following schedule:

MONITORING FREQUENCY

REPORT DUE

Continuous, Daily, Weekly,  
Monthly

By the fourteenth (14) day  
of the following month.

Quarterly

April 14, July 14, Oct. 14,  
January 14

Semiannually

July 14, January 14

Annually

January 14

The pH values shall be reported in terms of daily minimum and maximum values for each day the facility is in operation. In addition, the total duration of each pH event in excess of permissible limits shall be reported. The reports shall also contain average and maximum daily flows.

5. The Industrial User (where applicable) shall ensure that all monitoring instruments and devices used by the Industrial User to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. The flow measurement system shall be calibrated at least twice per year, or more frequently as necessary, to ensure continued accuracy of the system.

To ensure proper operation of the pH monitoring system, the Industrial User shall be required to conduct a daily system calibration check. In addition, the Industrial User shall be required to maintain a written maintenance log relative to the system. This log shall contain, at a minimum, the following information:

- a. Date that calibration and check procedures were performed;
- b. Person(s) performing the procedures;
- c. Description of the procedures performed (may be in the form of a checklist;
- d. Statement(s) regarding whether or not the system operated correctly;
- e. Description of problems encountered, if any; and
- f. Description of maintenance/corrective procedures undertaken.

The log shall be maintained on a daily basis and shall be made available upon request to SCP personnel.

Page 5b of 9  
Permit No:

6. The Industrial User shall submit all reports to the following address:

Oxnard Wastewater Treatment Plant  
Source Control Program  
6001 South Perkins Road  
Oxnard, CA 93033

Attention: Robert B. Montgomery, R.S.  
Environmental Control Supervisor

PART V - STANDARD CONDITIONS

1. A copy of this permit shall be posted at the Industrial User's facility so as to be available to all operating personnel at all times .

2. Right of Entry

The Industrial User shall allow the Director or his representative, exhibiting proper identification, to enter upon the premises of the Industrial User at all reasonable hours for the purposes of inspection, sampling, and/or record inspection. Reasonable hours in this context includes, but is not limited to, any time the Industrial User is operating any process which results in a process waste and/or wastewater discharge to the City's sewerage system.

3. Record Retention

- a) The Industrial User shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made by or in behalf of the Industrial User in connection with its discharge.
- b) All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the City shall be maintained until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

4. Confidential Information

Except for data determined to be trade secrets under Chapter 25, Section 25-15 of the Oxnard City Code, all information required by this permit shall be available for public records inspection at the office of the Environmental Control Supervisor.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the user shall record the following information:

- a) The exact place, date, and time of sampling;
- b) The dates the analyses were performed;
- c) The person(s) who performed the analyses;
- d) The sample collection and preservation methods used;
- e) The analytical techniques or methods used;
- f) The results of all required analyses; and
- g) Average daily and maximum daily flows during the reporting period.
- h) All monitoring instruments and devices utilized by the Industrial User to fulfill the prescribed monitoring program shall be properly maintained and calibrated to ensure their continued accuracy. The flow monitoring equipment shall be calibrated every six (6) months. Proof of calibration shall be submitted with the appropriate Self-Monitoring Report.

6. Dilution

No Industrial User shall increase the use of potable or process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

7. Proper Disposal of Pretreatment Sludges and Chemicals

The disposal of sludges and/or spent chemicals shall be performed in accordance with Section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

8. Signatory Requirements

All reports required by this permit shall be signed by an authorized representative of the Industrial User.

9. Revocation of Permit

The permit issued to the Industrial User by the City may be revoked when, after inspection, monitoring, or analysis it is determined that the discharge of wastewater to the City's Sewerage System is in violation of Federal, State, or local laws, ordinances, or regulations. Additionally, falsification or intentional misrepresentation of data or statements pertaining to this permit application or any other required reporting form, shall be cause for permit revocation.

10. Falsifying Information or Tampering with Monitoring Equipment

Knowingly making any false statements on any report or other document required by the permit or knowingly rendering any monitoring device or method inaccurate, may result in punishment under the criminal laws of the City, as well as being subjected to civil penalties and relief.

11. Modification or Revision of the Permit

- a) The terms and conditions of this permit may be subject to modification by the City, at any time, as limitations or requirements of the City's Ordinance are modified; or other just cause exists.
- b) This permit may also be modified to incorporate special conditions resulting from the issuance of a special order.
- c) The terms and conditions may be modified as a result of EPA promulgating a new federal pretreatment standard.
- d) Any permit modification which results in new conditions in the new permit shall include a reasonable time schedule for compliance, if necessary.

12. Transferability

This permit shall not be reassigned, transferred or sold to a new owner, new user, different premises or a new or changed operation.

13. Duty to Reapply

The City shall notify the User thirty (30) days prior to the expiration of the User's Permit. Within thirty (30) days of the notification, the User shall apply for reissuance of the permit on a form provided by the City.

14. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

15. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of Federal, State or local regulations.



CITY OF

oxnard

PUBLIC WORKS DEPARTMENT • 305 W. THIRD ST. • OXNARD, CA 93030 • (805) 984-4696  
WASTEWATER TREATMENT PLANT • 6001 S. PERKINS RD. • OXNARD, CA 93033 • (805) 488-3517

January 5, 1988

Santa Clara Waste Water Company  
Post Office Box 4156  
Ventura, CA 93004

Attention: Mr. Ted ~~Greyheck~~ Gralik

Subject: Industrial Wastewater Discharge Permit

Dear Mr. Greyheck:

Enclosed please find your company's Industrial Wastewater Discharge Permit. Effective immediately, your company is required to comply with all provisions and requirements set forth within the Permit. Please be sure to examine the Permit carefully.

Your facility's Permit contains a provision for the submission of an Influent Monitoring Program (Part III - Special Condition/Requirements) by March 31, 1988. The purpose of this program is to ensure that only wastewater which is treatable by your facility is accepted. This shall be accomplished by qualifying generators and their wastewater(s) prior to acceptance, through an evaluation procedure (Waste Analysis Plan). This Plan shall include a Waste Information Form to be signed by the generator and a complete analysis of a representative sample. Other elements of the Influent Monitoring Program shall include:


- o Establishment of influent pollutant concentration limitations or guidelines (and accepting only those wastewaters which meet them);
- o A quick screening process to check the wastewaters upon arrival for gross deviations from the originally qualified sample(s); and
- o An accurate record keeping system for wastewater deliveries and manifests.

Please be advised that Industrial Wastewater Discharge Permits are issued to a specific User for a specific operation. A Permit shall not be reassigned or transferred or sold to a new owner, new User, different premises or a new or changed operation.

Mr. Greyheck  
January 5, 1988  
Page 2

As stipulated in Chapter 25, Section 25-41(A) of the Oxnard City Code, the Permit is valid for a period of one (1) year or less. In addition, Section 25-54(F) requires that the Industrial User pay a yearly Permit Fee in the amount of \$1,000 (Ordinance Number 2117). The Permit Fee is due and payable upon receipt of this Notice and covers the period July 1, 1987 to June 30, 1988. Failure to pay the required fee shall result in the revocation of the Permit and the initiation of all necessary steps to ensure that your company immediately stops or eliminates the discharge of any waste or wastewater into the City's sewerage system.

If you have any questions, please contact me at (805) 488-3517. Your cooperation is greatly appreciated.



Robert B. Montgomery, R.S.  
Environmental Control Supervisor

RBM:jh  
Enc.



BY RSD  
K BY \_\_\_\_\_

**Penfield & Smith**  
ENGINEERS • SURVEYORS

111 E VICTORIA STREET, SANTA BARBARA, CALIF. (805) 963-9632

SH 1 OF 3  
Venturotek  
Saticoy Pipeline  
DATE 5-25-66  
W.O. NO. 9465.01

## Saticoy Wastewater Disposal Line Study —

Determine flows in pipeline given initial pressure produced by pump.

Pipeline characteristics:

- \* Initial elevation = 186'
- \* Final elevation = 42.8' }  $\Delta$  elevation = 143.2'
- \* Length = 66,897'
- \* Diameter = 9"
  - Assume inside diameter is 9" due to deposits and visual inspection of portion cut out in 1963.
- \* Hazen-Williams coefficient:
  - For concrete pipe:  $C = 120-130$

Losses in pipeline:

$$\text{Friction Loss} = \frac{4.73 (L) (Q)^{1.852}}{(C)^{1.852} (D)^{4.87}} \quad (\text{Hazen-Williams formula})$$

$$\text{Minor Losses} = M \frac{V^2}{2g}$$

where:

Appertenance	M	No. In Pipeline	Total
Gate Valve, fully open	0.2	3	0.6
90° Bend	0.9	17	15.3
45° Bend	0.4	5	2.0
30° Bend	0.2	5	1.0

$$\text{Total } M = 18.9$$

Hydraulic Grade Line:

$$\text{* Pressure head produced by pump} = \text{PSI} * 2.31 \frac{\text{ft. head}}{\text{psi}}$$

\* Pressure head at outfall end is zero since pipe is open to atmosphere.

RSD

**Penfield & Smith**  
 ENGINEERS • SURVEYORS

Vendriote's

SH 2 OF 3

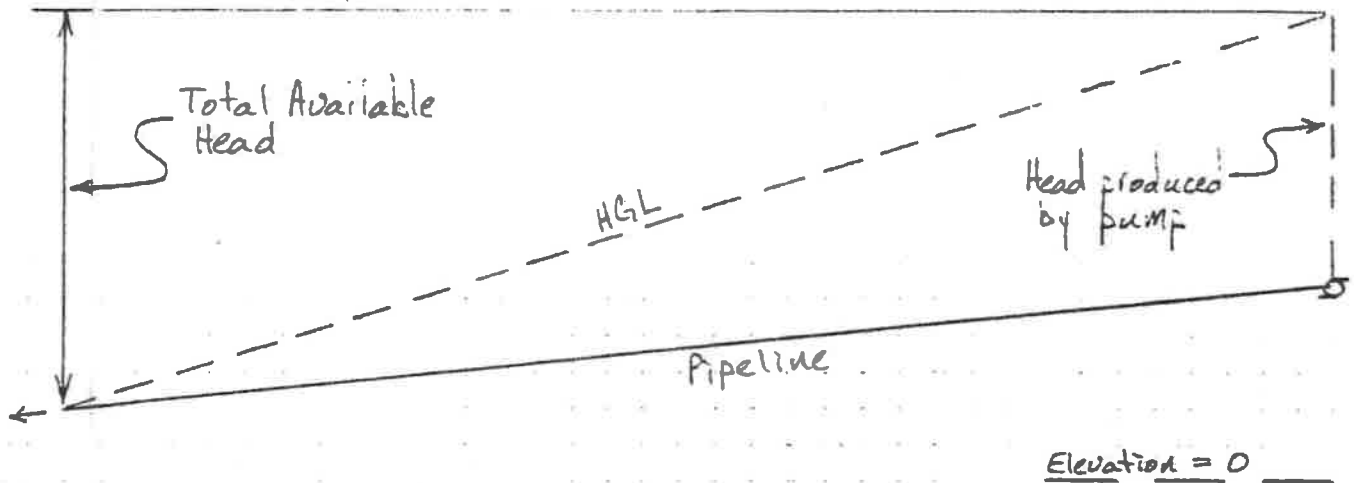
Saticoy Pipeline

DATE 5-25-00

W.O. NO.  
9465.01

111 E. VICTORIA STREET, SANTA BARBARA, CALIF. (805) 963-9532

Method of Analysis —



Find  $Q$  which produces losses in pipeline which are equal to total available head. This will be the maximum possible  $Q$  at the given pump psi.

$$\text{Total head available} = \text{initial elev.} - \text{final elev.} + (\text{psi} \times 2.31)_{\text{pump}}$$

Use trial and error method to find  $Q$  which gives:

$$\text{Total head loss} = \text{Total head available}$$

RSD

**Penfield & Smith**  
ENGINEERS • SURVEYORS

Venivotek

Satiray Pipeline

SH 3 OF 2  
DATE 5-25-9  
W.O. NO.  
9465.01

BY

111 E. VICTORIA STREET, SANTA BARBARA, CALIF. (805) 963-9632

### Summary: —

Analyses were performed using a computer spreadsheet to determine flows at various pumping pressures - at  $C=120$  and  $C=130$ .

Currently the flow is pumped at a pressure of 30 psi or 48 psi. Analyses were performed for both of these pressures.

Standard valves and fittings are rated at 150 psi while heavy duty valves and fittings are rated at 250 psi. Analyses were performed for these pressures also.

Considering the age of this pipeline, I wouldn't feel very comfortable pressurizing it over 100 psi. At 100 psi the pipeline will deliver flows in the range of 660 gpm to 715 gpm.

The analyses show that the current flow rate at 30 psi is in the range of 487 gpm to 527 gpm, and at 48 psi the flow rate is in the range of 536 gpm to 580 gpm.

FLOW CALCULATIONS

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
U.C.: 9465.01  
BY: RANDY S. DYER

PENFIELD & SMITH  
P.C. BOX 98  
SANTA BARBARA, CA 93102  
(805) 963-9532

FILE NAME: 946501.SUM  
DATE: 5-29-90

SUMMARY OF FLOW RESULTS

FLOW (GPM)

	Dia. = 9.0		Dia. = 9.5	
	C=120	C=130	C=130	
0 PSI	393		490	
30 PSI	487	527	607	
48 PSI	536	580	668	
100 PSI	660	713	824	
150 PSI	764	827	953	
250 PSI	941	1018	1173	

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
 Q.D.: 9465.01  
 BY: RANDY S. DYER

PENFIELD & SMITH  
 P.O. BOX 98  
 SANTA BARBARA, CA 93102  
 (805) 963-9532

FILE NAME: 946501.PIP  
 DATE: 5-25-90

PIPELINE INFORMATION:

LENGTH (ft.) = 66.897.00  
 DIAMETER (in.) = 9.00  
 AREA (sq. ft.) = 0.4416  
 MINOR LOSS COEF. = 18.9  
 INITIAL ELEVATION = 186.00  
 FINAL ELEVATION = 42.80  
 ELEV. DIFFERENCE = 143.20

C = 120  
 PSI PRODUCED BY PUMP = 30

HEAD FROM PUMP (ft.) = 69.3  
 TOTAL HEAD AVAILABLE = 212.5

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
500	2.52	221.29	1.87	223.16
450	2.27	182.06	1.51	183.58
475	2.40	201.24	1.69	202.92
480	2.42	205.18	1.72	206.90
485	2.43	209.15	1.76	210.91
487	2.46	210.75	1.77	212.53 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

PROJECT: SATICDY WASTEWATER DISPOSAL LINE STUDY  
 W.D.: 9465.01  
 BY: RANDY S. DYER

PENFIELD & SMITH  
 P.O. BOX 98  
 SANTA BARBARA, CA 93102  
 (805) 963-9532

FILE NAME: 946501.PIP  
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 ELEV. DIFFERENCE = 143.20

=====

C = 120  
 PSI PRODUCED BY PUMP = 48

=====

HEAD FROM PUMP (ft.) = 110.88  
 TOTAL HEAD AVAILABLE = 254.08

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
500	2.52	221.29	1.87	223.16
550	2.78	264.01	2.26	266.27
540	2.72	255.19	2.18	257.37
535	2.70	250.83	2.14	252.97
537	2.71	252.57	2.15	254.73
536	2.70	251.70	2.15	253.85 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

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 ELEV. DIFFERENCE = 143.20

=====

C = 120  
 PSI PRODUCED BY PUMP = 100

=====

HEAD FROM PUMP (ft.) = 231  
 TOTAL HEAD AVAILABLE = 374.2

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
600	3.03	310.18	2.69	312.87
650	3.28	359.74	3.16	362.90
660	3.33	370.06	3.26	373.31 <<<<
662	3.34	372.14	3.27	375.41
661	3.34	371.10	3.27	374.36
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

FILE NAME: 946501.PIP  
DATE: 5-25-90

PIPELINE INFORMATION:

C = 120  
PSI PRODUCED BY PUMP = 150

HEAD FROM PUMP (ft.) = 346.5  
TOTAL HEAD AVAILABLE = 489.7

[illegible]

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
 M.O.: 9465.01  
 BY: RANDY S. DYER

PENFIELD & SMITH  
 P.O. BOX 98  
 SANTA BARBARA, CA 93102  
 (805) 963-9332

FILE NAME: 946501.PIP  
 DATE: 5-25-90

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PIPELINE INFORMATION:

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 FINAL ELEVATION = 42.80  
 ELEV. DIFFERENCE = 143.20

=====

C = 120  
 PSI PRODUCED BY PUMP = 250

=====

HEAD FROM PUMP (ft.) = 577.5  
 TOTAL HEAD AVAILABLE = 720.7

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
1000	5.05	798.87	7.47	806.34
800	4.04	528.44	4.78	533.22
900	4.54	637.25	6.05	663.30
950	4.79	726.47	6.74	733.21
940	4.74	712.37	6.60	718.97
945	4.77	719.41	6.67	726.08
942	4.75	715.18	6.63	721.81
941	4.75	713.78	6.62	720.39 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
 W.O.: 9465.01  
 BY: RANDY S. DYER

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 ELEV. DIFFERENCE = 143.20

=====

C = 130  
 PSI PRODUCED BY PUMP = 30

=====

HEAD FROM PUMP (ft.) = 69.3  
 TOTAL HEAD AVAILABLE = 212.5

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
500	2.52	190.80	1.87	192.67
550	2.78	227.64	2.26	229.90
525	2.65	208.85	2.06	210.91
526	2.65	209.58	2.07	211.65
527	2.66	210.32	2.08	212.40 <<<<
528	2.66	211.06	2.08	213.15
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
 W.D.: 9465.01  
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C = 130  
 PSI PRODUCED BY PUMP = 48

=====

HEAD FROM PUMP (ft.) = 110.88  
 TOTAL HEAD AVAILABLE = 254.08

=====

FLGW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
500	2.52	190.80	1.87	192.67
1000	5.05	688.80	7.47	696.27
600	3.03	267.44	2.69	270.13
550	2.78	227.64	2.26	229.90
575	2.90	247.17	2.47	249.64
580	2.93	251.17	2.51	253.68 <<<<
581	2.93	251.97	2.52	254.49
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICDY WASTEWATER DISPOSAL LINE STUDY  
 W.O.: 9465.01  
 BY: RANDY S. DYER

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 ELEV. DIFFERENCE = 143.20

=====

C = 130  
 PSI PRODUCED BY PUMP = 100

=====

HEAD FROM PUMP (ft.) = 231  
 TOTAL HEAD AVAILABLE = 374.2

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
600	3.03	267.44	2.69	270.13
800	4.04	455.64	4.78	460.42
700	3.53	355.81	3.66	359.47
720	3.63	374.86	3.87	378.74
718	3.62	372.94	3.85	376.79
716	3.61	371.02	3.83	374.85
715	3.61	370.06	3.82	373.88 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
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=====

C = 130  
 PSI PRODUCED BY PUMP = 150

=====

HEAD FROM PUMP (ft.) = 346.5  
 TOTAL HEAD AVAILABLE = 489.7

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
800	4.04	455.64	4.78	460.42
820	4.14	476.96	5.02	481.98
830	4.19	487.78	5.15	492.93
828	4.18	485.61	5.12	490.73
827	4.17	484.52	5.11	489.63 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOM WASTEWATER DISPOSAL LINE STUDY  
 N.O.: 9465.01  
 BY: RANDY S. DYER

PENFIELD & SMITH  
 P.O. BOX 98  
 SANTA BARBARA, CA 93102  
 (805) 963-9532

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=====

C = 130  
 PSI PRODUCED BY PUMP = 250

=====

HEAD FROM PUMP (ft.) = 577.5  
 TOTAL HEAD AVAILABLE = 720.7

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
1000	5.05	688.80	7.47	696.27
1200	6.06	965.47	10.76	976.23
1100	5.55	821.78	9.04	830.82
1050	5.30	753.94	8.24	762.18
1025	5.17	721.03	7.85	728.88
1020	5.15	714.53	7.77	722.31
1019	5.14	713.24	7.76	721.00
1018	5.14	711.94	7.74	719.68 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PENFIELD & SMITH  
P.O. BOX 98  
SANTA BARBARA, CA 93102  
(805) 963-9532

12345678910111213141516171819202122232425262728293031323334353637383940414243444546474849505152535455565758596061626364656667686970717273747576777879808182838485868788899091929394959697989910010110210310410510610710810911011111211311411511611711811912012112212312412512612712812913013113213313413513613713813914014114214314414514614714814915015115215315415515615715815916016116216316416516616716816917017117217317417517617717817918018118218318418518618718818919019119219319419519619719819920020120220320420520620720820921021121221321421521621721821922022122222322422522622722822923023123223323423523623723823924024124224324424524624724824925025125225325425525625725825926026126226326426526626726826927027127227327427527627727827928028128228328428528628728828929029129229329429529629729829930030130230330430530630730830931031131231331431531631731831932032132232332432532632732832933033133233333433533633733833934034134234334434534634734834935035135235335435535635735835936036136236336436536636736836937037137237337437537637737837938038138238338438538638738838939039139239339439539639739839940040140240340440540640740840941041141241341441541641741841942042142242342442542642742842943043143243343443543643743843944044144244344444544644744844945045145245345445545645745845946046146246346446546646746846947047147247347447547647747847948048148248348448548648748848949049149249349449549649749849950050150250350450550650750850951051151251351451551651751851952052152252352452552652752852953053153253353453553653753853954054154254354454554654754854955055155255355455555655755855956056156256356456556656756856957057157257357457557657757857958058158258358458558658758858959059159259359459559659759859960060160260360460560660760860961061161261361461561661761861962062162262362462562662762862963063163263363463563663763863964064164264364464564664764864965065165265365465565665765865966066166266366466566666766866967067167267367467567667767867968068168268368468568668768868969069169269369469569669769869970070170270370470570670770870971071171271371471571671771871972072172272372472572672772872973073173273373473573673773873974074174274374474574674774874975075175275375475575675775875976076176276376476576676776876977077177277377477577677777877978078178278378478578678778878979079179279379479579679779879980080180280380480580680780880981081181281381481581681781881982082182282382482582682782882983083183283383483583683783883984084184284384484584684784884985085185285385485585685785885986086186286386486586686786886987087187287387487587687787887988088188288388488588688788888989089189289389489589689789889990090190290390490590690790890991091191291391491591691791891992092192292392492592692792892993093193293393493593693793893994094194294394494594694794894995095195295395495595695795895996096196296396496596696796896997097197297397497597697797897998098198298398498598698798898999099199299399499599699799899910001001100210031004100510061007100810091010101110121013101410151016101710181019102010211022102310241025102610271028102910301031103210331034103510361037103810391040104110421043104410451046104710481049105010511052105310541055105610571058105910601061106210631064106510661067106810691070107110721073107410751076107710781079108010811082108310841085108610871088108910901091109210931094109510961097109810991100110111021103110411051106110711081109111011111112111311141115111611171118111911201121112211231124112511261127112811291130113111321133113411351136113711381139114011411142114311441145114611471148114911501151115211531154115511561157115811591160116111621163116411651166116711681169117011711172117311741175117611771178117911801181118211831184118511861187118811891190119111921193119411951196119711981199120012011202120312041205120612071208120912101211121212131214121512161217121812191220122112221223122412251226122712281229123012311232123312341235123612371238123912401241124212431244124512461247124812491250125112521253125412551256125712581259126012611262126312641265126612671268126912701271127212731274127512761277127812791280128112821283128412851286128712881289129012911292129312941295129612971298129913001

LENGTH (ft.) =	66.897.00
DIAMETER (in.) =	9.00
AREA (sq. ft.) =	0.4416
MINOR LOSS COEF. =	18.9
INITIAL ELEVATION =	186.00
FINAL ELEVATION =	42.80
ELEV. DIFFERENCE =	143.20

=====

[illegible]

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
M.D.: 9465.01  
BY: RANDY S. DYER

PENFIELD & SMITH  
P.O. BOX 98  
SANTA BARBARA, CA 93102  
(805) 963-9532

FILE NAME: 946501.PIP  
DATE: 5-29-90

=====

PIPELINE INFORMATION:

LENGTH (ft.) = 66,897.00  
DIAMETER (in.) = 9.50  
AREA (sq. ft.) = 0.4920  
MINOR LOSS COEF. = 18.9  
INITIAL ELEVATION = 186.00  
FINAL ELEVATION = 42.80  
ELEV. DIFFERENCE = 143.20

=====

C = 130  
PSI PRODUCED BY PUMP = 0

=====

HEAD FROM PUMP (ft.) = 0  
TOTAL HEAD AVAILABLE = 143.2

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
500	2.26	146.63	1.50	148.14
495	2.24	143.93	1.47	145.40
494	2.24	143.39	1.47	144.86
493	2.23	142.85	1.46	144.32
492	2.23	142.32	1.46	143.78
491	2.22	141.78	1.45	143.23
490	2.22	141.25	1.45	142.69 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
 W.C.: 9465.01  
 BY: RANDY S. DYER

PENFIELD & SMITH  
 P.O. BOX 98  
 SANTA BARBARA, CA 93102  
 (805) 963-9532

FILE NAME: 946501.PIP  
 DATE: 5-29-90

=====

PIPELINE INFORMATION:

LENGTH (ft.) = 66,897.00  
 DIAMETER (in.) = 9.50  
 AREA (sq. ft.) = 0.4920  
 MINOR LOSS COEF. = 18.9  
 INITIAL ELEVATION = 186.00  
 FINAL ELEVATION = 42.80  
 ELEV. DIFFERENCE = 143.20

=====

C = 130  
 PSI PRODUCED BY PUMP = 30

=====

HEAD FROM PUMP (ft.) = 69.3  
 TOTAL HEAD AVAILABLE = 212.5

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
500	2.26	146.63	1.90	148.14
700	3.17	273.44	2.95	276.39
600	2.72	205.53	2.17	207.70
610	2.76	211.92	2.24	214.16
609	2.76	211.28	2.23	213.51
608	2.75	210.64	2.23	212.86
607	2.75	209.99	2.22	212.21 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
W.O.: 9465.01  
BY: RANDY S. DYEF

PENFIELD & SMITH  
P.O. BOX 98  
SANTA BARBARA, CA 93102  
(805) 963-9532

FILE NAME: 946501.PIP  
DATE: 5-29-90

=====

PIPELINE INFORMATION:

LENGTH (ft.) = 66,897.00  
DIAMETER (in.) = 9.50  
AREA (sq. ft.) = 0.4920  
MINOR LOSS COEF. = 18.9  
INITIAL ELEVATION = 186.00  
FINAL ELEVATION = 42.80  
ELEV. DIFFERENCE = 143.20

=====

C = 130  
PSI PRODUCED BY PUMP = 48

=====

HEAD FROM PUMP (ft.) = 110.88  
TOTAL HEAD AVAILABLE = 254.08

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
600	2.72	205.53	2.17	207.70
650	2.94	238.37	2.94	240.92
660	2.99	245.21	2.62	247.83
670	3.03	252.13	2.70	254.84
669	3.03	251.44	2.69	254.13
668	3.03	250.74	2.69	253.43 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
 N.O.: 9465.01  
 BY: RANDY S. DYER

PENFIELD & SMITH  
 P.O. BOX 96  
 SANTA BARBARA, CA 93102  
 (805) 963-9532

FILE NAME: 946501.PIP  
 DATE: 8-29-90

=====

PIPELINE INFORMATION:

LENGTH (ft.) = 66,897.00  
 DIAMETER (in.) = 9.50  
 AREA (sq. ft.) = 0.4920  
 MINOR LOSS COEF. = 18.9  
 INITIAL ELEVATION = 186.00  
 FINAL ELEVATION = 42.80  
 ELEV. DIFFERENCE = 143.20

=====

C = 130  
 PSI PRODUCED BY PUMP = 100

=====

HEAD FROM PUMP (ft.) = 231  
 TOTAL HEAD AVAILABLE = 374.2

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
700	3.17	273.44	2.93	276.39
800	3.62	350.16	3.85	354.01
850	3.85	391.76	4.35	396.11
840	3.80	383.27	4.25	387.52
830	3.76	374.86	4.15	379.01
826	3.74	371.53	4.11	375.63
825	3.74	370.69	4.10	374.79
824	3.73	369.86	4.09	373.95 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
W.D.: 9465.01  
BY: RANDY S. DYER

PENFIELD & SMITH  
P.O. BOX 98  
SANTA BARBARA, CA 93102  
(805) 963-9532

FILE NAME: 946501.PIP  
DATE: 5-29-90

=====

PIPELINE INFORMATION:

LENGTH (ft.) = 65.897.00  
DIAMETER (in.) = 9.50  
AREA (sq. ft.) = 0.4920  
MINOR LOSS COEF. = 18.9  
INITIAL ELEVATION = 186.00  
FINAL ELEVATION = 42.80  
ELEV. DIFFERENCE = 143.20

=====

C = 130  
PSI PRODUCED BY PUMP = 150

=====

HEAD FROM PUMP (ft.) = 346.5  
TOTAL HEAD AVAILABLE = 489.7

=====

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
800	3.62	350.16	3.85	354.01
900	4.08	435.51	4.88	440.39
930	4.30	481.38	5.43	486.81
955	4.33	486.08	5.49	491.57
954	4.32	485.14	5.48	490.62
953	4.32	484.20	5.47	489.66 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

=====

PROJECT: SATICOY WASTEWATER DISPOSAL LINE STUDY  
 W.D.: 9465.01  
 BY: RANDY S. DYER

PENFIELD & SMITH  
 P.O. BOX 98  
 SANTA BARBARA, CA 93102  
 (805) 963-9532

FILE NAME: 946501.PIP  
 DATE: 5-29-90

PIPELINE INFORMATION:

LENGTH (ft.) = 66,897.00  
 DIAMETER (in.) = 9.50  
 AREA (sq. ft.) = 0.4920  
 MINOR LOSS COEF. = 18.9  
 INITIAL ELEVATION = 186.00  
 FINAL ELEVATION = 42.80  
 ELEV. DIFFERENCE = 143.20

C = 130  
 PSI PRODUCED BY PUMP = 250

HEAD FROM PUMP (ft.) = 577.5  
 TOTAL HEAD AVAILABLE = 720.7

FLOW (gpm)	VELOCITY (ft/s)	PIPE HL (ft)	MINOR HL (ft)	TOTAL (ft)
1000	4.53	529.35	6.02	535.37
1200	5.43	741.97	8.67	750.64
1170	5.30	707.98	8.24	716.22
1175	5.32	713.59	8.31	721.91
1174	5.32	712.47	8.30	720.77
1173	5.31	711.35	8.28	719.63 <<<<
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00

W.D.: 9065.01  
 BY: RSD  
 FILE: 946501.RSD  
 DATE: 5-11-90

PAGE 1

SATIDBY WASTEWATER DISPOSAL LINE PROFILE INFORMATION

STATION	GROUND ELEVATION	TOP OF PIPE ELEVATION	INVERT ELEVATION	COVER (FT)	DISTANCE (FT)	SLOPE (%)
12.20						
39.90	42.40	39.73	38.89	2.67	27.70	-----
578.53	44.15	40.25	39.41	3.90	538.63	0.097
1041.55	45.00	42.50	41.66	2.50	463.02	0.486
1815.87	47.20	43.90	43.06	3.30	774.32	0.181
2007.35	47.90	46.20	45.36	1.70	191.48	1.201
2151.25	49.00	46.20	45.36	2.80	143.90	0.000
3000.00	51.60	48.90	48.06	2.70	848.75	0.318
3448.00	51.50	47.00	46.16	4.50	448.00	-0.424
3473.00	51.50	47.00	46.16	4.50	25.00	0.000
3662.80	53.20	50.50	49.66	2.70	189.80	1.844
4200.00	54.90	52.40	51.56	2.50	537.20	0.354
4985.91	51.20	46.50	45.66	4.70	785.91	-0.751
5081.56	49.60	46.40	45.56	3.20	95.65	-0.105
5800.00	51.10	48.80	47.96	2.30	718.44	0.334
5941.66	51.90	49.30	48.46	2.60	141.66	0.353
6185.51	54.20	51.00	50.16	3.20	243.85	0.697
6205.08	53.90	50.60	49.76	3.30	19.57	-2.044
6800.00	56.00	51.10	50.26	4.90	594.92	0.084
7000.00	57.80	52.70	51.86	5.10	200.00	0.800
7800.00	-----	54.40	53.56	-----	800.00	0.212
8085.00	58.20	55.60	54.76	2.60	285.00	0.421
8400.00	57.90	55.50	54.66	2.40	315.00	-0.032
9437.00	60.10	57.60	56.76	2.50	1037.00	0.203
9800.00	60.10	58.80	57.96	1.30	363.00	0.331
10400.00	63.20	60.50	59.66	2.70	600.00	0.283
11200.00	65.40	63.00	62.16	2.40	800.00	0.313
11600.00	66.40	63.80	62.96	2.60	400.00	0.200
11896.65	66.80	64.20	63.36	2.60	296.65	0.135
12300.20	67.50	64.50	63.66	3.00	403.55	0.074
12800.00	69.50	67.00	66.16	2.50	499.80	0.500
13293.00	72.70	70.10	69.26	2.60	493.00	0.629
14000.00	73.70	70.10	69.26	3.60	707.00	0.000
14418.50	77.00	74.00	73.16	3.00	418.50	0.932
14800.00	77.90	75.50	74.66	2.40	381.50	0.393
15600.00	81.90	79.20	78.36	2.70	800.00	0.463
16464.87	85.90	77.90	77.06	8.00	864.87	-0.150
16811.28	86.20	83.20	82.36	3.00	346.41	1.530
17147.69	88.60	85.90	85.06	2.70	336.41	0.803
17485.15	89.50	86.90	86.06	2.60	337.46	0.296
18461.00	93.00	90.70	89.86	2.30	975.85	0.389
19147.35	94.30	91.90	91.06	2.40	686.35	0.175
19718.89	97.00	94.45	93.61	2.55	571.54	0.446
20176.38	97.40	94.96	94.12	2.44	457.49	0.111
21609.00	101.40	98.70	97.86	2.70	1432.62	0.261
21698.55	101.80	99.00	98.16	2.80	89.55	0.335
22600.00	103.50	100.90	100.06	2.60	901.45	0.211
23000.00	105.00	102.20	101.36	2.80	400.00	0.325

W.D.: 9065.01  
 BY: RSD  
 FILE: 946501.RSD  
 DATE: 5-11-90

PAGE 2

SATICOY WASTEWATER DISPOSAL LINE PROFILE INFORMATION

STATION	GROUND ELEVATION	TOP OF PIPE ELEVATION	INVERT ELEVATION	COVER (FT)	DISTANCE (FT)	SLOPE (%)
=====						
23600.00	106.10	103.50	102.66	2.60	600.00	0.217
24000.00	106.40	103.80	102.96	2.60	400.00	0.075
24495.00	106.60	104.30	103.46	2.30	495.00	0.101
25200.00	109.30	106.50	105.66	2.80	705.00	0.312
26000.00	110.50	107.70	106.86	2.80	800.00	0.130
27664.00	116.50	111.70	110.86	4.80	1664.00	0.240
28400.00	118.40	115.90	115.06	2.50	736.00	0.571
28800.00	120.20	116.70	115.86	3.50	400.00	0.200
28985.00	120.40	116.30	115.46	4.10	185.00	-0.216
29600.00	122.60	119.90	119.06	2.70	615.00	0.585
30800.00	127.00	124.50	123.66	2.50	1200.00	0.383
31200.00	128.20	125.30	124.46	2.90	400.00	0.200
31600.00	129.30	126.70	125.86	2.60	400.00	0.350
32000.00	129.70	126.70	125.86	3.00	400.00	0.000
32800.00	132.50	130.10	129.26	2.40	800.00	0.425
33200.00	134.00	131.40	130.56	2.60	400.00	0.325
34000.00	136.90	134.10	133.26	2.80	800.00	0.337
34800.00	138.90	136.10	135.26	2.80	800.00	0.250
35517.00	141.40	138.30	137.46	3.10	717.00	0.307
35692.00	142.60	136.30	135.46	6.30	175.00	-1.143
36200.00	138.80	136.20	135.36	2.60	508.00	-0.020
37000.00	138.50	135.80	134.96	2.70	800.00	-0.050
37400.00	139.20	136.60	135.76	2.60	400.00	0.200
37800.00	137.90	135.40	134.56	2.50	400.00	-0.300
38600.00	136.50	133.80	132.96	2.70	800.00	-0.200
39000.00	136.90	134.30	133.46	2.60	400.00	0.125
39146.40	136.60	134.00	133.16	2.60	146.40	-0.205
39194.68	136.40	134.10	133.26	2.30	48.28	0.207
SANTA CLARA RIVER BRIDGE						
42167.06	-----	146.80	145.96	-----	2972.38	-----
42215.86	132.60	130.00	129.16	2.60	48.80	-----
42869.03	137.30	135.10	134.26	2.20	653.17	0.781
42933.00	138.90	135.30	134.46	3.60	63.97	0.313
43417.96	138.80	136.50	135.66	2.30	484.96	0.247
43782.75	141.60	135.40	134.56	6.20	364.79	-0.302
44244.96	147.70	145.00	144.16	2.70	462.21	2.077
44727.96	148.90	146.40	145.56	2.50	483.00	0.290
45467.70	153.90	150.40	149.56	3.50	739.74	0.541
45677.96	154.70	150.70	149.86	4.00	210.26	0.143
45894.84	156.90	152.90	152.06	4.00	216.88	1.014
46018.90	160.80	157.00	156.16	3.80	124.06	3.305
46108.96	159.60	156.10	155.26	3.50	90.06	-0.999
46422.96	161.10	158.60	157.76	2.50	314.00	0.796
46508.96	162.40	159.80	158.96	2.60	86.00	1.395
46817.96	164.70	161.90	161.06	2.80	309.00	0.680
47647.92	171.40	166.10	165.26	5.30	829.96	0.506
48017.96	171.70	169.30	168.46	2.40	370.04	0.865
48675.61	175.70	170.90	170.06	4.80	657.65	0.243

N.D.: 9065.01  
 BY: RSD  
 FILE: 946501.RSD  
 DATE: 5-11-90

PAGE 3

SATICOY WASTEWATER DISPOSAL LINE PROFILE INFORMATION

STATION	GROUND ELEVATION	TOP OF PIPE ELEVATION	INVERT ELEVATION	COVER (FT)	DISTANCE (FT)	SLOPE (%)
=====						
WASON BARRANCA						
48728.71	176.10	171.10	170.26	5.00	53.10	-----
49017.96	175.80	173.00	172.16	2.80	289.25	0.657
49417.96	177.50	174.50	173.66	3.00	400.00	0.375
49817.96	181.40	178.90	178.06	2.50	400.00	1.100
51417.96	187.00	184.40	183.56	2.60	1600.00	0.344
51817.96	189.30	186.70	185.86	2.60	400.00	0.575
52217.96	187.50	185.00	184.16	2.50	400.00	-0.425
52405.79	178.20	175.00	174.16	3.20	187.83	-5.324
52428.04	178.30	175.60	174.76	2.70	22.25	2.697
52499.99	177.80	174.80	173.96	3.00	71.95	-1.112
52548.96	179.10	175.70	174.86	3.40	48.97	1.838
52592.39	-----	180.00	179.16	-----	43.43	9.901
ELLSWORTH BARRANCA						
52632.39	-----	180.00	179.16	-----	40.00	-----
52650.96	181.00	179.00	178.16	2.00	18.57	-5.385
52869.17	185.80	182.60	181.76	3.20	218.21	1.650
53132.27	180.00	177.10	176.26	2.90	263.10	-2.090
53464.88	169.40	166.70	165.86	2.70	332.61	-3.127
53817.96	170.70	168.30	167.46	2.40	353.08	0.453
54217.96	173.70	171.20	170.36	2.50	400.00	0.725
54617.96	177.80	175.30	174.46	2.50	400.00	1.025
54856.60	179.10	176.90	176.06	2.20	238.64	0.670
54939.13	178.40	174.90	174.06	3.50	82.53	-2.423
55394.38	172.90	169.70	168.86	3.20	455.25	-1.142
55506.78	173.90	169.90	169.06	4.00	112.40	0.178
55658.18	174.60	172.00	171.16	2.60	151.40	1.387
55798.69	175.60	173.20	172.36	2.40	140.51	0.854
56252.67	179.10	176.50	175.66	2.60	453.98	0.727
56435.92	180.20	177.70	176.86	2.50	183.25	0.655
56539.24	180.80	176.00	175.16	4.80	103.32	-1.645
56585.46	180.90	177.60	176.76	3.30	46.22	3.462
56639.34	180.60	176.50	175.66	4.10	53.88	-2.042
57017.96	180.80	178.50	177.66	2.30	378.62	0.528
57417.96	181.40	178.40	177.56	3.00	400.00	-0.025
58393.64	181.80	179.10	178.26	2.70	975.68	0.072
59217.96	184.70	181.20	180.36	3.50	824.32	0.255
59617.96	184.80	182.10	181.26	2.70	400.00	0.225
60017.96	186.90	183.60	182.76	3.30	400.00	0.375
60417.96	189.50	185.90	185.06	3.60	400.00	0.575
60817.96	192.10	189.30	188.46	2.80	400.00	0.850
61378.26	192.50	189.70	188.86	2.80	560.30	0.071
61431.00	-----	191.00	190.16	-----	52.74	2.465 >
61461.00	-----	181.00	180.16	-----	30.00	-33.333 >
61515.00	-----	181.00	180.16	-----	54.00	0.000 >
61560.00	-----	189.00	188.16	-----	45.00	17.778 >
62684.96	183.50	180.70	179.86	2.80	1124.96	-0.738
62728.96	183.50	180.50	179.66	3.00	44.00	-0.455

TODD  
 BARRANCA

W.D.: 9065.01  
 BY: -RSD  
 FILE: 946501.RSD  
 DATE: 5-11-90

PAGE 4

SATICOY WASTEWATER DISPOSAL LINE PROFILE INFORMATION

STATION	GROUND ELEVATION	TOP OF PIPE ELEVATION	INVERT ELEVATION	COVER (FT)	DISTANCE (FT)	SLOPE (%)
62774.28	182.90	179.90	179.06	3.00	45.32	-1.324
63159.47	182.00	180.20	179.36	1.80	385.19	0.078
63542.36	182.80	179.50	178.66	3.30	382.89	-0.183
64117.46	182.80	180.00	179.16	2.80	575.10	0.087
64230.92	183.60	179.60	178.76	4.00	113.46	-0.353
64617.96	184.10	181.00	180.16	3.10	387.04	0.362
65017.96	184.90	182.40	181.56	2.50	400.00	0.330
65417.96	186.60	184.20	183.36	2.40	400.00	0.450
65817.96	189.00	186.60	185.76	2.40	400.00	0.600
66344.15	190.00	183.40	182.56	6.60	526.19	-0.608
66422.28	190.10	187.70	186.86	2.40	78.13	5.504
66535.18	190.10	186.80	185.96	3.30	112.90	-0.797
66629.13					93.95	
					=====	
TOTAL:					66616.93	

4

## FLOW RECORDS

## VOLUME - BARRELS

[illegible]

**WATER QUALITY TEST RESULTS**

# SANTA CLARA WASTE WATER

SERVING THE WASTE WATER NEEDS OF INDUSTRY

A Subsidiary of Venvrotek

RECEIVED  
MAY 08 1990  
Ans d.....

## INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Average Daily Flow: 2.183387 Mgal/day Maximum Daily Flow: 147000 gal a day

Signature of Sample Collector: BTCE

### ANALYSIS RESULTS\*

Pollutant	Units	Sample Type	Sample Dates				Mo. Avg	Limits
			5-6	3-15	3-26	3-30		
BOD	mg/L	comp	180	130	140	160	152.5	600
COD	"	"	740	2100	1000	1100	1235	1800
Susp. Solids	"	"	180	120	150	96	136.5	800
Cadmium	"	"	BQL				BQL	3.0
Chromium total	"	"	BQL				BQL	3.0
Copper	"	"	BQL				BQL	3.0
Lead	"	"	0.06				.06	3.0
Nickel	"	"	BQL				BQL	3.0
Zink	"	"	0.02				.02	3.0
Dissolved H2S	"	grab	0.03	0.03	0.07	0.04	.04	0.1
Oil & Grease	"	"	290	51	28	24	98.25	100
T.T.O.	"	"	1.58	1.95			.76	1.0
pH	pH	"		7.2	7.47	7.5	7.39	>6<10

\*ATTACH COPY OF LAB REPORT AS VERIFICATION OF REPORTED RESULTS.

Were pretreatment standards met? Yes No (if no, attach explanation)

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 20TH day of APRIL, 1990, at VENTURA

Mike Adamske  
Authorized Representative

MIKE ADAMSKE ENV. MGR.  
Name and Title

805/525-8315 • 805/654-1900

815 Mission Rock Road • Santa Paula, California 93060 • Mailing Address: PO. Box 4156 • Ventura, California 93004

# SANTA CLARA WASTE WATER

## SERVING THE WASTE WATER NEEDS OF INDUSTRY

A Subsidiary of Veriviretek

### INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Average Daily Flow: 0.179285 mg/day Maximum Daily Flow: 147000 gal/day

Signature of Sample Collector: BTC, E

#### ANALYSIS RESULTS\*

Pollutant	Units	Sample Type	Sample Dates				Mo. Avg	Limits
			2-2	2-12	2-16	2-22		
BOD	mg/L	comp	385	87	138	46	176.5	600
COD	"	"	1310	1480	1313	1550	1413	1800
Susp. Solids	"	"	178	74	129	148	132	800
Cadmium	"	"	BQL				BQL	3.0
Chromium total	"	"	BQL				BQL	3.0
Copper	"	"	0.05				.05	3.0
Lead	"	"	0.04				.04	3.0
Nickel	"	"	BQL				BQL	3.0
Zinc	"	"	0.10				.10	3.0
Dissolved H <sub>2</sub> S	"	grab	0.01	0.01	0.03	0.02	.02	0.1
Oil & Grease	"	"	2.4	14.6	15.4	12.3	16.59	100
T.T.O.	"	"	2.34			1.45	1.89	1.0
pH	pH	"	7.8	7.52	7.56	7.5	7.6	>6<10

\*ATTACH COPY OF LAB REPORT AS VERIFICATION OF REPORTED RESULTS.

Were pretreatment standards met? Yes ☒ No (if no, attach explanation)

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 13<sup>TH</sup> day of MARCH, 1990, at VENTURA

Mike Adamske  
Authorized Representative

MIKE ADAMSKE  
Name and Title  
ENVIRONMENTAL MANAGER

805/525-8315 • 805/654-1900

815 Mission Rock Road • Santa Paula, California 93060 • Mailing Address: P.O. Box 4156 • Ventura, California 93004

# SANTA CLARA WASTE WATER

SERVING THE WASTE WATER NEEDS OF INDUSTRY

A Subsidiary of Venvirotek

## INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Average Daily Flow: 0.150322 Maximum Daily Flow: 105,000 gals.

Signature of Sample Collector: B.T.C. E.

### ANALYSIS RESULTS\*

Pollutant	Units	Sample Type	Sample Dates				Mo. Avg	Limits
			1-8	1-9	1-17	1-25		
BOD	mg/L	comp	92	71	152	189		600
COD	"	"	1073	1347	1484	1484		1800
Susp. Solids	"	"	82	106	147	140		800
Cadmium	"	"	BQL					3.0
Chromium total	"	"	BQL					3.0
Copper	"	"	BQL					3.0
Lead	"	"	0.13					3.0
Nickel	"	"	BQL					3.0
Zink	"	"	0.05					3.0
Dissolved H2S	"	grab	<0.01	<0.01	0.01	<0.01		0.1
Oil & Grease	"	"	2.6	26.9	41.3	14.8		100
T.T.O.	"	"	1.78					1.0
pH	pH	"		7.44	7.43	7.42		>6<10

\*ATTACH COPY OF LAB REPORT AS VERIFICATION OF REPORTED RESULTS.

Were pretreatment standards met? Yes ☒ No (if no, attach explanation)  
(See letter dated Jan. 29, 1990)

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 9<sup>th</sup> day of FEBRUARY, 1990, at VENTURA, CA.

Mike Adamske  
Authorized Representative

MIKE ADAMSKE ENV. MGR.  
Name and Title

805/525-8315 • 805/654-1900

815 Mission Rock Road • Santa Paula, California 93060 • Mailing Address: PO Box 4156 • Ventura, California 93004

DECEMBER

# SANTA CLARA WASTE WATER

SERVING THE WASTE WATER NEEDS OF INDUSTRY

A Subsidiary of Venturitek

## INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Average Daily Flow: 0.176129 MG/D Maximum Daily Flow: 134.40 GPD

Signature of Sample Collector: BTCF

### ANALYSIS RESULTS\*

Pollutant	Units	Sample Type	Sample Dates					Mo. Avg	Limits
			12-1	12-5	12-13	12-21	12-27		
BOD	mg/L	comp	116	469	438	156	257	287.2	600
COD	"	"	1136	1256	1415	1415	1347	1313.8	1800
Susp. Solids	"	"	155	240	130	188	200	182.6	800
Cadmium	"	"	BQL						3.0
Chromium total	"	"	1.60						3.0
Copper	"	"	1.40						3.0
Lead	"	"	0.30						3.0
Nickel	"	"	BQL						3.0
Zink	"	"	0.40						3.0
Dissolved H2S	"	grab	0.01	0.01	0.01	0.01	0.04	0.016	0.1
Oil & Grease	"	"	16	22	22.1	18.8	82.7	32.32	100
T.T.O.	"	"	1.04					1.04	1.0
pH	pH	"	7.45	7.19	7.15	7.29	7.20	7.25	>6<10

\*ATTACH COPY OF LAB REPORT AS VERIFICATION OF REPORTED RESULTS.  
Were pretreatment standards met? Yes ☒ No (if no, attach explanation)

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 12<sup>th</sup> day of JANUARY, 1990, at VENTURA, CA.

Mike Adamske  
Authorized Representative

MIKE ADAMSKE ENVIRONMENTAL  
Name and Title MANAGER

NOVEMBER

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water

Contact Person: Brian Massey

Company Address: 815 Mission Rock Road

Telephone Number: (805) 525 8315

Average Daily Flow: 168000 gpd

Maximum Daily Flow: 0.270000 M/gpd

Name and Affiliation of Sample Collector: RTCE

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES							MO. AVG.	
			11-3	11-9	11-15	11-21					
BOD	mg/l	FPC	189	236	282	201				227	600
COD	"	"	762	1025	1153	922				965.5	1,800
Sus Solids	"	"	138	74	328	99				159.75	800
Cadmium	"	"	BQL							BQL	3.0
Chromium tot	"	"	0.07							0.07	3.0
Copper	"	"	BQL							BQL	3.0
Lead	"	"	0.13							0.13	3.0
Nickel	"	"	BQL							BQL	3.0
Zinc	"	"	0.10							0.10	3.0
Diss. Hyd. Sulfide	"	Grab	0.01	0.01	0.01	0.02				0.01	0.1
Oil & Grease	"	"	24	140	133	1166				47.24	100.0
T.T.O.	"	"	168								1.0
ph	ph	"	7.35	7.30	6.82	7.18					6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes ☒ No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14 day of Dec, 1989, at Santa Clara Waste Water

Signature of Authorized Representative: Mike Adamske

Typed Name and Title: Mike Adamske, Environmental Manager

OCTOBER

INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water

Contact Person: Brian Massey

Company Address: 815 Mission Rock Road

Telephone Number: (805) 525 8315

Average Daily Flow: 310000 gpd

Maximum Daily Flow: 1200000 gpd

Name and Affiliation of Sample Collector: BTC E

ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES						MO. AVG.	
			10-6	10-10	10-18	10-26				
BOD	mg/l	FPC	210	443	284	525			365.5	600
COD	"	"	802	883	753	1565			1020.75	1,800
Sus Solids	"	"	176	64	99	35			93.5	800
Cadmium	"	"	0.02						0.02	3.0
Chromium tot	"	"	0.02						0.02	3.0
Copper	"	"	0.02						0.02	3.0
Lead	"	"	0.04						0.04	3.0
Nickel	"	"	0.04						0.04	3.0
Zink	"	"	0.02						0.02	3.0
Diss. Hyd. Sulfide	"	Grab	0.01	0.01	0.05	0.01			0.02	0.1
Oil & Grease	"	"	45.4	67	57	16			46.35	100.0
T.T.O.	"	"	.234						.234	1.0
ph	ph	"	7.44	7.44	7.49	7.53			7.475	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? ☐ Yes ☐ No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 11<sup>th</sup> day of Nov, 1989, at Santa Clara Waste Water.

Signature of Authorized Representative: [Signature]

Printed Name and Title: MICHAEL ADAMSKE ENVIRONMENTAL MANAGER

SEPTEMBER

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water

Contact Person: Brian Massey

Company Address: 815 Mission Rock Road

Telephone Number: (805) 525 8315

Average Daily Flow: 298000 gpd

Maximum Daily Flow: 310,000 gpd

Name and Affiliation of Sample Collector: BTC E

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES						MO. AVG.	
			7-1	7-7	7-13	7-21	7-29			
BOD	mg/l	FPC	198	335	252	248	587		324	600
COD	"	"	907	959	890	777	626		836.8	1,800
Sus Solids	"	"	79	25	142	210	86		108.4	800
Cadmium	"	"	0.02						0.02	3.0
Chromium tot	"	"	0.02						0.02	3.0
Copper	"	"	0.02						0.02	3.0
Lead	"	"	0.04						0.04	3.0
Nickel	"	"	0.04						0.04	3.0
Zink	"	"	0.02						0.02	3.0
Diss.Hyd.Sulfide	"	Grab	0.01	0.01	0.01	0.01	0.03		0.014	0.1
Oil & Grease	"	"	37.6	15	34.6	47	44		35.64	100.0
T.T.O.	"	" 214	<del>7.30</del>						.214	1.0
ph	ph	"	7.30	7.26	7.38	7.4	7.62		7.39	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? ☒ Yes ☐ No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14<sup>th</sup> day of Oct, 1989 at Santa Clara Co.

Signature of Authorized Representative: [Signature]

Typed Name and Title: ENVIRONMENTAL MANAGER SCWWD

August

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water

Contact Person: Brian Massey

Company Address: 815 Mission Rock Road

Telephone Number: (805) 525 8315

Average Daily Flow: 156030 gpd

Maximum Daily Flow: 263340 gpd

Name and Affiliation of Sample Collector: BTC Environmental

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES							MO. AVG.	
			8-4	8-8	8-16	8-24					
BOD	mg/l	FPC	260	389	234	174				260	600
COD	"	"	755	925	1033	846					1,800
Sus Solids	"	"	54	53	71	36.8					800
Cadmium	"	"	0.10								3.0
Chromium tot	"	"	0.01								3.0
Copper	"	"	0.25								3.0
Lead	"	"	0.25								3.0
Nickel	"	"	0.25								3.0
Zink	"	"	0.25								3.0
Diss.Hyd.Sulfide	"	Grab	0.01	0.01	0.01	0.01					0.1
Oil & Grease	"	"	15	25	24	27.5					100.0
T.T.O.	"	"	1.0								1.0
ph	ph	"	7.4	7.5	7.5	7.5					6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? ☒ Yes ☐ No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14<sup>th</sup> day of Sept, 1989, at Santa Paula, Cal.

Signature of Authorized Representative: B. Massey

Typed Name and Title: Brian Massey Mar. Sec.

July

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water Company

Contact Person: Brian Massey

Company Address: P. O. Box 4156, Ventura, CA 93003

Telephone Number: (805)525-8315

Average Daily Flow: 215,335 gpd

Maximum Daily Flow: 550,000 gpd

Name and Affiliation of Sample Collector: ENSECO - CRI

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES							MO. AVG.	Maximum Allowed
			7-7	7-11	7-19	7-27					
BOD	mg/l	FPC	420	420	460	410				427.5	600
COD	"	"	960	1100	1200	1000				1065	1,800
Suspended Solids	"	"	53	67	100	120				85	800
Cadmium	"	"	0.05							0.05	3.0
Chromium - Total	"	"	0.1							0.1	3.0
Copper	"	"	0.08							0.08	3.0
Lead	"	"	0.2							0.2	3.0
Nickel	"	"	0.2							0.2	3.0
Zinc	"	"	0.10							0.10	3.0
Diss. Hyd. Sulfied	"	Grab	0.1	0.1	0.1	0.1				0.1	0.1
Oil and Grease	"	"	45	32	43	25				36.25	100.0
Total Toxic Org.	"	"	1.42							1.42	1.0
pH	pH	"		7.4	7.3	7.0				7.2	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes ☒ No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14 day of August, 1989, at Santa Paula, Ca.

Signature of Authorized Representative: B. Massey

Typed Name and Title: Brian Massey

6/89

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water Company

Contact Person: W. S. Lach

Company Address: P. O. Box 4156, Ventura, CA 93003

Telephone Number: (805) 525-8315

Average Daily Flow: 227,333 gpd

Maximum Daily Flow: 550,000 gpd

Name and Affiliation of Sample Collector: ENSECO C.R.L.

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES						MO. AVG.	Maximum Allowed
			6-2	6-6	6-14	6-22	6-29			
BOD	mg/l	FPC	690	540	570	350	390		508	600
COD	"	"	1000	530	1800	1100	1200		1126	1,800
Suspended Solids	"	"	110	150	140	200	78		135.6	800
Cadmium	"	"		<0.05					<0.05	3.0
Chromium - Total	"	"		<0.1					<0.1	3.0
Copper	"	"		0.05					0.05	3.0
Lead	"	"		0.2					0.2	3.0
Nickel	"	"		0.16					0.16	3.0
Zinc	"	"		0.06					0.06	3.0
Diss. Hyd. Sulfid	"	Grab	40.1	0.1	6.1	20.1	20.1		20.1	0.1
Oil and Grease	"	"	47	50	16	43	55		42.2	100.0
Total Toxic Org.	"	"		1.16					1.16	1.0
pH	pH	"	7.4	7.4	7.5	7.5	7.5		7.46	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes X No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14th day of July, 1989, at SANTA PAULA, CAL.

Signature of Authorized Representative: Brian Massey

Typed Name and Title: Brian Massey Mgr.

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water Company

Contact Person: W. S. Cook

Company Address: P. O. Box 4156, Ventura, CA 93003

Telephone Number: (805) 525-8315

Average Daily Flow: 186,452 gpd

Maximum Daily Flow: 600,000 gpd

Name and Affiliation of Sample Collector: ENSECO-C.R.L.

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES				MO. AVG.	Maximum Allowed
			5-5-89	5-9-89	5-17	5-25		
BOD	mg/l	FPC	640	320	340	560	465	600
COD	"	"	1400	1000	1000	1200	1150	1,800
Suspended Solids	"	"	91	15	130	78	96	800
Cadmium	"	"	0.05				0.05	3.0
Chromium - Total	"	"	0.1				0.1	3.0
Copper	"	"	0.14				0.14	3.0
Lead	"	"	0.3				0.3	3.0
Nickel	"	"	0.2				0.2	3.0
Zinc	"	"	0.13				0.13	3.0
Diss. Hyd. Sulfid	"	Grab	0.1	40.1	0.1	0.1	0.1	0.1
Oil and Grease	"	"	51	100	47	42	60	100.0
Total Toxic Org.	"	"	1.16				1.16	1.0
pH	pH	"	7.4	7.7	7.6	7.4	7.5	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes X No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14<sup>th</sup> day of JUNE, 1989, at SANTA PAULA CA.

Signature of Authorized Representative: W. S. Cook

Typed Name and Title: W. S. Cook MANAGER

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water Company

Contact Person: W. Cook

Company Address: P. O. Box 4156, Ventura, CA 93003

Telephone Number: (805) 525-8315

Average Daily Flow: 187,335 gpd

Maximum Daily Flow: 270,000 gpd

Name and Affiliation of Sample Collector: ENSECO-CRL

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES						MO. AVG.	Maximum Allowed
			4-7	4-12	4-20	4-28				
BOD	mg/l	FPC	440	370	365	520			424	600
COD	"	"	1100	1100	460	1480			1035	1,800
Suspended Solids	"	"	250	120	62	68			135	800
Cadmium	"	"	<0.05						<0.05	3.0
Chromium - Total	"	"	0.3						0.3	3.0
Copper	"	"	0.10						0.10	3.0
Lead	"	"	0.3						0.3	3.0
Nickel	"	"	0.19						0.19	3.0
Zinc	"	"	0.10						0.10	3.0
Diss. Hyd. Sulfid	"	Grab	0.2	0.1	0.2	0.1			0.15	0.1
Oil and Grease	"	"	46	67	47	48			52	100.0
Total Toxic Org.	"	"	4.4						4.4	1.0
pH	pH	"	7.5	7.2	7.4	7.3			7.35	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes X No (If no, explain on separate sheet).

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Executed on the 14<sup>th</sup> day of MAY, 1989, at SANTA CLARA CO.

Signature of Authorized Representative: W. Cook

Typed Name and Title: W. Cook, MANAGER

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water Company

Contact Person: Ted A. Grahek

Company Address: P. O. Box 4156, Ventura, CA 93003

Telephone Number: (805) 525-8315

Average Daily Flow: 162,581 gpd

Maximum Daily Flow: 249,000 gpd

Name and Affiliation of Sample Collector: ENSECO - CRL

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES							MO. AVG.	Maximum Allowed
			3-3	3-10	3-15	3-	3-31				
BOD	mg/l	FPC	640	480	430	250	410			442	600
COD	"	"	1,300	1,200	1,100	1,300	1,100			1,200	1,800
Suspended Solids	"	"	78	120	130	410	55			158.6	800
Cadmium	"	"	<0.05							<0.05	3.0
Chromium - Total	"	"	0.2							0.2	3.0
Copper	"	"	0.07							0.07	3.0
Lead	"	"	0.2							0.2	3.0
Nickel	"	"	0.2							0.2	3.0
Zinc	"	"	<0.05							0.05	3.0
Diss. Hyd. Sulfid	"	Grab	0.2	0.1	0.1	0.1	<0.1	<del>0.1</del>		0.12	0.1
Oil and Grease	"	"	57	58	66	39	68			57.6	100.0
Total Toxic Org.	"	"	0.76							0.76	1.0
pH	pH	"	7.1	7.2	7.5	6.9	7.4			7.22	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes X No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14<sup>th</sup> day of APRIL, 1989, at Santa Paula, Ca.

Signature of Authorized Representative: Weslock

Typed Name and Title: Weslock - Manager

2/89

## INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water CompanyContact Person: Ted A GrabelCompany Address: P. O. Box 4156, Ventura, CA 93003Telephone Number: (805) 525-8315Average Daily Flow: 183,571 gpdMaximum Daily Flow: 570,266 gpdName and Affiliation of Sample Collector: ENSECO - CRL

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES							MO. AVG.	Maximum Allowed
			2-3	2-7	2-15	2-22					
BOD	mg/l	FPC	630	200	280	350				365	600
COD	"	"	1200	990	780	1,700				1168	1,800
Suspended Solids	"	"	210	97	58	52				164	800
Cadmium	"	"	<0.05							<0.05	3.0
Chromium - Total	"	"	0.1							0.1	3.0
Copper	"	"	<0.05							<0.05	3.0
Lead	"	"	0.2							0.2	3.0
Nickel	"	"	0.2							0.2	3.0
Zinc	"	"	0.05							0.05	3.0
Diss. Hyd. Sulfid	"	Grab	<0.1	<0.1	0.1	0.1				<0.1	0.1
Oil and Grease	"	"	42	100	54	56				63	100.0
Total Toxic Org.	"	"	1.21							1.21	1.0
pH	pH	"	7.4	7.3	7.8	7.5				7.5	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes ☒ No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14<sup>th</sup> day of March, 1989, at Santa Paula, Ca.Signature of Authorized Representative: Ted A. GrabelTyped Name and Title: TED A. Grabel - Manager

# INDUSTRIAL WASTEWATER DISCHARGE SELF-MONITORING REPORT

Company Name: Santa Clara Waste Water Company

Contact Person: Ted A. Grahek

Company Address: P. O. Box 4156, Ventura, CA 93003

Telephone Number: (805) 525-8315

Average Daily Flow: 196,774 gpd

Maximum Daily Flow: 327,654 gpd

Name and Affiliation of Sample Collector: ENSECC - CRL

## ANALYSIS RESULTS\*

POLLUTANT	UNITS	SAMPLE TYPE	SAMPLE DATES						MO. AVG.	Maximum Allowed
			1/6	1/13	1/18	1/26				
BOD	mg/l	FPC	570	400	480	390			460	600
COD	"	"	1,300	860	920	1,000			1,020	1,800
Suspended Solids	"	"	120	100	11	45			88	800
Cadmium	"	"	<0.05						<0.05	3.0
Chromium - Total	"	"	0.26						0.26	3.0
Copper	"	"	0.07						0.07	3.0
Lead	"	"	0.6						0.6	3.0
Nickel	"	"	0.19						0.19	3.0
Zinc	"	"	21							3.0
Diss. Hyd. Sulfid	"	Grab	0.1	0.4	0.2	0.1			0.2	0.1
Oil and Grease	"	"	75	38	54	47			54	100.0
Total Toxic Org.	"	"	1.42						1.42	1.0
pH	pH	"	7.3	7.4	7.6	21			7.4	6 to 10

\*ATTACH COPY OF LABORATORY REPORT AS VERIFICATION OF REPORTED RESULTS

Were pretreatment standards met? Yes X No (If no, explain on separate sheet).

"I have personally examined and am familiar with the information submitted in this document and attachments. Based on my inquiry of those individuals responsible for obtaining information reported herein, I declare under penalty of perjury that the foregoing is true and correct. I am aware there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment."

Executed on the 14<sup>th</sup> day of FEB., 1989, at Santa Paula, Ca.

Signature of Authorized Representative: Ted A. Grahek

Typed Name and Title: Ted A. GRAHEK - Manager





## Penfield & Smith

1327 Del Norte Road, Ste 200  
Camarillo, CA 93010

tel 805-981-0706  
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Water Resources  
Engineering

GIS

December 15, 2011

W.O. 20412.01

Mr. Chuck Mundy  
Santa Clara Wastewater Company  
815 Mission Rock Road  
Santa Paula, CA 93060

**Subject: Evaluation of the 10-Inch Diameter Pipeline**

Dear Chuck:

Previously, our firm provided a hydraulic analysis and assessments of various components of this pipeline in a 1991 report. At that time, we prepared an exhibit which summarized the plan and profile views of this pipeline. If you need additional copies of this report, please let me know.

More recently, on December 5, 2011 a series of tests and inspections were performed at 3 representative locations along the 12 ½ mile pipeline, between your plant near Santa Paula and the connection to the City of Oxnard along Wooley Road in Oxnard. Based on our understanding of the operations and the restraints associated with accessing this pipeline to perform an inspection, we recommended that the pipeline be exposed at 3 locations. The attached exhibits indicate the approximate locations of these test sites. A contractor was hired to excavate an area approximately 6- feet long, from the middle to the top of the pipe and a 2-3 foot length below the pipe, to expose the entire exterior of the pipe. At each of the 3 locations, the exterior coating was carefully examined to determine the material integrity of the asphaltic coating. The coating was removed at each location to measure the steel thickness of the pipe and the coating itself. These tests were made on the exterior circumference of the pipe at approximately 12 o'clock, 3 o'clock, and 7 o'clock markings. This allows representative samples both above and below a standing water level. These 3 tests were made by the use of an ultrasonic device (please see attached report by Westex Company).

Following these tests, an 8" x 12" section of the pipeline was cut out from the top of the pipeline and the coating was separated from the steel cylinder and examined for corrosion. At all 3 locations, there was no evidence of corrosion along the steel, asphalt coating, or cement mortar lining. It did appear that the interior cement mortar lining was a little thinner at the second 2 sites, however there were no signs or symptoms of structural deficiencies or corrosion.

The 3 test site locations are as follows:

<u>Site #</u>	<u>Location</u>	<u>Elevation +/-</u>	<u>Approximate distance from plant</u>
Site 1:	Mission Rock Road	175'	1.5 miles
Site 2:	Highway 118 & Vineyard	130'	5 miles
Site 3:	Rose & Gonzales	70'	10 miles
Pipeline Terminous	Wooley Road	45'	12.5 miles

The test results and physical measurements at each of the test sites indicated that the exterior coating varied between  $\frac{1}{2}$ " and  $\frac{3}{4}$ "; the steel thickness was between .13 and .14 inches, and the interior lining measured between  $\frac{3}{4}$ " and  $\frac{1}{2}$ " of cement mortar lining. No evidence was found of cracking or degradation of the lining or coating at any of the 3 locations. There was evidence of material buildup on the sidewalls and sediment in the bottom of the pipeline at all 3 locations, but it was less than 1" in thickness and primarily less than  $\frac{1}{2}$ ". If not cleaned, this will create a hydraulic degradation in the future, but should not affect the structural integrity of the pipeline.

The pipeline section removed from each location will be saved for future reference. A replacement metal collar of 0.13 thickness was installed with a hand-hole to allow the relining of the replacement steel pipe. At each test site, the exterior was then re-coated so these locations can continue to provide the useful service life enjoyed by the rest of the pipeline.

Based on our inspection of the 3 locations, there was no evidence of corrosion or structural degradation and this pipeline should provide many more years of useful service life. Since this pipeline has shown good resilience after 50+ years of service, it is reasonable to expect it will last at least another 30 years.

Please feel free to contact me if you would like to discuss our findings, or if you have any questions. I can be reached at (805) 981-0706 x104 or email [pir@penfieldsmith.com](mailto:pir@penfieldsmith.com).

Thank you for the opportunity to be of service.

Sincerely,

**PENFIELD & SMITH**



Patrick J. Reeves, P.E.  
Principal Engineer



PJR: dkb



WU 204/2,01

#17



Google earth

miles  
km

5

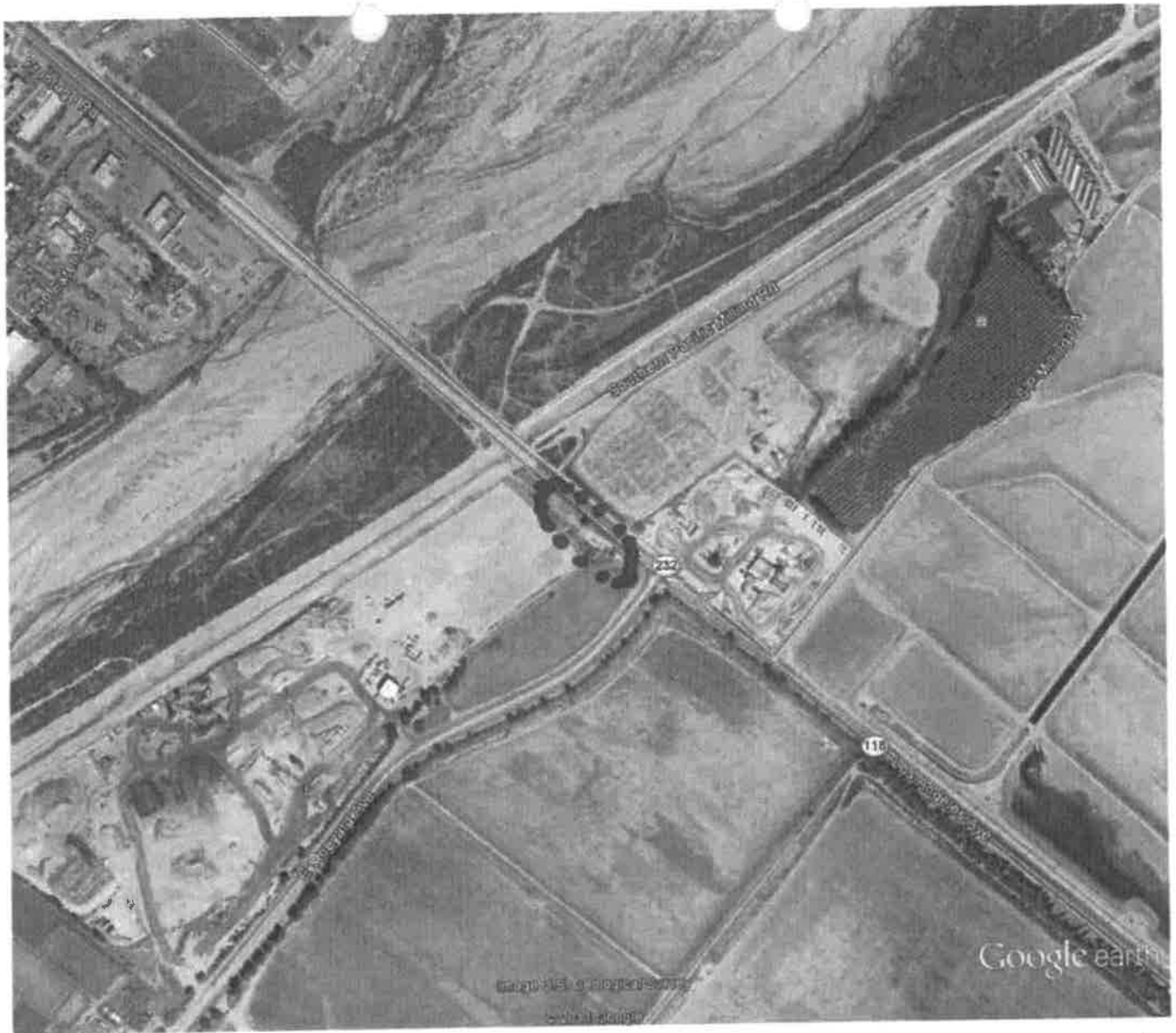
9



#3

#2





Google earth

feet  
meters

2000

800



# 2



Google earth

feet 1000  
meters 300



#3



P.O. Box 5587 Oxnard, CA 93031  
Phone (805) 485-2205 Fax (805) 485-9323  
[www.westtexco.com](http://www.westtexco.com)

U.T. Thickness Report #: **23290**

Page: **1** of **3**

### Ultrasonic Thickness Report

Date of Work: **December 5, 2011**  
Item Description: **10" dia Water Pipeline, Cement Lined**  
Location: **Santa Paula, Ventura, Oxnard**

Customer: **Penfield & Smith**  
Address: **Camarillo, CA**  
P.O. Number: **Verbal Pat Reeves**

## "10" Cement Lined Water Pipeline"

Ultrasonic thickness was taken @ (3) different locations see maps below

Map of: Project Area 1  
815 Mission Rock Rd  
Santa Paula, CA 93060-9762

Map of: Project Area 1

Map of: Project Area 2  
Los Angeles Ave & E Vineyard Ave  
Oxnard, CA 93036

Map of: Project Area 2

Map of: Project Area 3  
N Rose Ave & E Gonzales Rd  
Oxnard, CA 93036

Map of: Project Area 3

See page 3 for Instrument information and calibration standard used.

Inspector and Level: G. Lopez II



P.O. Box 5587 Oxnard, CA 93031  
Phone (805) 485-2205 Fax (805) 485-9323  
[www.westexco.com](http://www.westexco.com)

U.T. Thickness Repo **23290**

Page **2** of **3**

### Ultrasonic Thickness Report

Date of Work: **December 3, 2011**  
Item Description: **10" dia Water Pipeline, Cement Lined**

Customer: **Penfield & Smith**  
Address: **Camarillo, CA**

Location: **Santa Paula, Ventura, Oxnard**

P.O. Number: **Verbal Pat Reeves**

## "10" dia Cement Lined Water Pipeline"

All Ultrasonic thickness readings were taken starting on Top or 12 O'clock, 3 O'clock and 7 O'clock position.  
Concrete had been chipped away for inspection.

Map of: **Project Area 1**  
815 Mission Rock Rd  
Santa Paula, CA 93060-9762

12 O'Clock (Top)		3 O'Clock		7 O'Clock	
1	0.133	1	0.141	1	0.139



Map of: **Project Area 2**  
Los Angeles Ave & E Vineyard Ave  
Oxnard, CA 93036

2	0.133	2	0.130	2	0.133
---	-------	---	-------	---	-------



Map of: **Project Area 3**  
N Rose Ave & E Gonzales Rd  
Oxnard, CA 93036

3	0.133	3	0.130	3	0.133
---	-------	---	-------	---	-------



Inspector and Level: **G. Lopez II**



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U.T. Thickness Report #: **23290**

Page: **3** of **3**

## Ultrasonic Thickness Report

Date of Work: **December 3, 2011**  
Item Description: **10" dia Water Pipeline, Cement Lined**

Customer: **Penfield & Smith**  
Address: **Camarillo, CA**

### Equipment

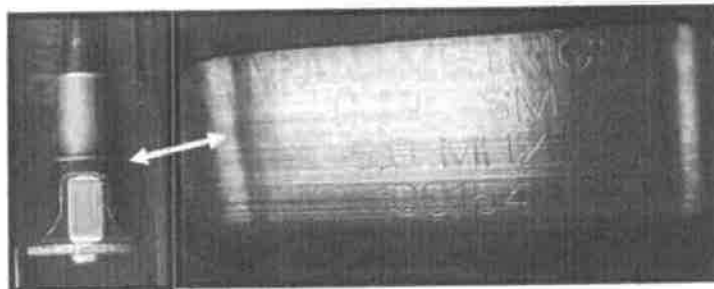
Ultrasonic instrument is certified/calibrated for horizontal linearity and in conformance to manufactures specifications.



Digital displayed ultrasonic instrument:  
Panametrics 36DL Plus Ultrasonic Thickness Gage.  
Serial Number: 002175505



Transducer:  
Panametrics  
D790SM  
5.0 MHZ  
SN: 100154



Calibration standard used was a 10 step reference block:

ID#: GL 161

Thickness: 1.000" to 0.100"



Inspector and Level: **G. Lopez II**

## **Attachment 35 – Works Cited**

### **INITIAL STUDY FOR RI-NU SERVICES WASTE WATER TREATMENT FACILITY**

Alicia Stratton, Ventura County Air Pollution Control District. February 22, 2018. *Initial Study Analysis Memorandum*.

Alma Quezada, Groundwater Resources Section, Watershed Protection District, Ventura County Public Works Agency. January 25, 2017. January 24, 2018. *Initial Study Analysis Memorandum*.

Andrea Ozdy, Analyst, Ventura Local Agency Formation Commission (LAFCo). May 7, 2018 *Email to Franca Rosengren regarding City of Santa Paula Water Service for 815 Mission Rock Road*. November 28, 2017 *Memorandum to Franca Rosengren regarding Application PL15-0106, Wastewater Treatment Facility*. February 21, 2017 *Memorandum to Franca Rosengren regarding Request for Project Review*.

Anitha Balan, Transportation Department, Ventura County Public Works Agency. July 12, 2018. *Initial Study Analysis Memorandum*. August 1, 2018. *Traffic Impact Mitigation Fee and Average Daily Trip Analysis*.

Badaoui Mouderrès, Professional Engineer, Technical Services and Water Quality Manager, City of Oxnard Public Works. May 1, 2018. *Email to Kai Luomo, LAFCo, Executive Officer, 1991 Wastewater Conveyance and Treatment Service Agreement*. March 8, 2018. *Email to Franca Rosengren confirming Sewer Availability*.

Ben Emami, Ventura County Transportation Division, Public Works Agency. July 28, 2015. *Initial Study Analysis Memorandum and in Accela*.

Carollo Engineers. March 2017. *City of Oxnard, Advanced Water Purification Facility, Indirect Potable Reuse Engineering Report, Final, Volume 2, Section 4.1 – 4.1.1, page 16*.

Charles E. Alvarez, Manager, Real Estate Services, Central Services Department, Ventura County Public Works Agency. March 21, 2018. *Email Response to Franca Rosengren*.

City of Oxnard. November 5, 1991. *Wastewater Conveyance and Treatment Services Agreement with Santa Clara Wastewater Company*. May 16, 2014. *New Industrial Wastewater Discharge Permit (IWDP) No. OC-8, Covers the Period of July 1, 2014 through June 30, 2015*. November 26, 2014. *Santa Clara Wastewater Timeline Meeting Minutes*.

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Daniel R. Tormey, Ph.D., P.G., President, Technical Director, Catalyst Environmental Solutions. September 6, 2018. *Technical Memorandum.*

Dave Panaro, P.G., Hydrologist, Groundwater Resources Section, Watershed Protection District, Ventura County Public Works Agency. November 27, 2017. December 1, 2017. *Initial Study Analysis Memorandum.*

David Ahrens, Ventura County Fire Prevention District. January 26, 2017. July 28, 2015. *Initial Study Analysis in Accela.*

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Ensaf Inc. January 2017. *Operations and Maintenance Manual for Ri-Nu Services LLC, Industrial Wastewater Plant.* April 2017. *Waste Analysis Plan for Ri-Nu Services LLC.* January 3, 2019. *Risk Management Analysis Report.*

Ewan Beenham, Division of Oil, Gas, and Geothermal Resources. April 11, 2017. *Site Review: Saticoy Field-Well Access at Santa Clara Waste Water Facility, Mission Rock Road, Ventura County.* February 16, 2017. *Site Review: Saticoy Field-Well Access at Santa Clara Waste Water Facility, Mission Rock Road, Ventura County.*

Ewelina Mutkowska, Stormwater Program Manager, Watershed Protection District, Public Works Agency. February 2, 2017. November 27, 2017. June 18, 2018. August 16, 2008. *Initial Study Analysis in Accela.*

Flood Insurance Rate Map (DFIRM No. 06111CO778E: January 20, 2010.)

Frances Lee, IGR/CEQA Acting Branch Chief, California Department of Transportation, April 3, 2018. *Response to Request for Review Letter.*

Franchise Agreement 1.10.88, Santa Clara Waste Water Company

Gerald Weeks, Jr., Ventura County Transportation Department. July 28, 2015. *Initial Study Analysis Memorandum.*

Green Compass. May 6, 2015. *Pipeline Hydrotest Plan, SCWWC 10-inch Water Pipeline, Hydrotesting of Approximately 12.6 Miles of 10-inch Waste Water Pipe.*

Invirotreat Inc., Innovative Treatment. April 5, 2018. *Preliminary Design Process Flow, CWT & Domestic Waste Treatment Facility.*

Jan M. Hauser, Wastewater Division Manager, City of Oxnard. March 29, 2019. *Confirmation of Details – Santa Clara Waste Water Facility 815 Mission Rock Road, Santa Paula, CA.*

Janna Minsk, AICP, Planning Director, City of Santa Paula. June 13, 2017. *Response to Request for Re-Review of Resubmitted Application PL15-0106.*

Jim O'Tousa, Development and Inspection Services Division, Public Works Agency. February 15, 2017. *Initial Study Analysis in Accela.*

Jordan, Gilbert, & Bain, Landscape Architects, Inc. November 27, 2018. *Conceptual Landscape and Planting Plan.*

Kaamil Tayyab, Transportation Department, Ventura County Public Works Agency. March 23, 2018. *Initial Study Analysis Memorandum.*

Kai Luoma, Executive Officer, Local Agency Formation Commission. May 2, 2018. *Email from Kai Luoma to City of Oxnard, Badaoui Mouderrres.*

Kathleen Riedel, Groundwater Resources Section, Watershed Protection District, Ventura County Public Works Agency. July 29, 2015. *Initial Study Analysis in Accela.*

Kerby E. Zozula, Manager, Ventura County Air Pollution Control District Engineering Division. April 8, 2019. *Memorandum from Mr. Zozula to Ali Ghasemi, Manager, Ventura County Air Pollution Control District, Planning Division Regarding a Health Risk Assessment for the Ri-Nu Facility.*

Kim Loeb, Groundwater Resources Section Manager, Watershed Protection District, Ventura County Public Works Agency. February 13, 2019. *Initial Study Analysis in Accela.*

Korinne Bell, Deputy Agricultural Commissioner, Office of the Agricultural Commissioner. August 31, 2018. *Email.*

Monica Sanoja, Office of the Agricultural Commissioner. November 27, 2017. *Initial Study Analysis Memorandum.*

Nathaniel Summerville, Advanced Planning Section, Watershed Protection District, Ventura County Public Works Agency. October 17, 2018. *Initial Study Analysis Memorandum.*

Nicole Collazo, Ventura County Air Pollution Control District. August 14, 2018. January 17, 2019. February 26, 2019. *Initial Study Analysis Memorandum.*

Nicole Doner, Planning Division Cultural Heritage Planner, Ventura County Planning Division. November 15, 2017. *Initial Study Analysis, Cultural Resources, Email.*

Patrick J. Reeves, Principal Engineer, Penfield and Smith, December 15, 2011. *Pipeline Evaluation of the 10-inch Pipeline*. June 15, 1990. *Pipeline Evaluation Report for Santa Clara Waste Water Pipeline*.

Raul E. Gaitan, Senior Engineering Technician, City of Santa Paula Public Works Department. August 28, 2017. *Email, Extraterritorial Water Service Agreement*.

Raymond Gutierrez, Development and Inspection Services Division, Public Works Agency. November 29, 2017. *Initial Study Analysis in Accela*. November 28, 2017. *Email to Franca Rosengren regarding Drainage Review Item 17b of the Initial Study Assessment Guidelines*.

Rebecca Lustig, Ventura County Environmental Health Division. July 31, 2015. June 22, 2017. March 13, 2018. *Initial Study Analysis in Accela*.

Richard L. Poole, Professional Engineer, President, Associated Transportation Engineers. October 19, 2015 and updated on April 25, 2017. *Trip Generation Analysis for the Santa Clara Waste Treatment Project CUP Modification*.

Ri-Nu Environmental Services. January 2019. *Safety Handbook, Injury and Illness Prevention Program, Code of Practices, Safety Standards (Procedures), and General Safety Policies*.

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