DRAFT SERVICES AGREEMENT BETWEEN CITY OF SUNNYVALE AND SYNAGRO-WWT, INC. FOR BIOSOLIDS HANDLING & DISPOSAL AND DIGESTER CLEANING

THIS AGREEMENT dated _____ is by and between the CITY OF SUNNYVALE, a municipal corporation ("CITY"), and SYNAGRO-WWT, INC., a corporation ("CONTRACTOR").

WHEREAS, CITY desires to secure on-call technical services necessary for Biosolids Handling & Disposal and Digester Cleaning; and

WHEREAS, CONTRACTOR represents that it, and its sub-contractors, if any, possess the professional qualifications and expertise to provide the required services and are licensed by the State of California in the required disciplines;

NOW, THEREFORE, THE PARTIES ENTER INTO THIS AGREEMENT.

1. Services by CONTRACTOR

CONTRACTOR shall provide services in accordance with Exhibit "A" entitled “Scope of Work” and adhere to the Exhibit “B” “WPCP’s Standard Operating Procedures (SOPs).” All exhibits referenced in this Agreement are attached hereto and are incorporated herein by reference. To accomplish that end, CONTRACTOR agrees to assign John Pugliaresi to this project, to act in the capacity of Project Manager and personally direct the services to be provided by CONTRACTOR.

Except as specified in this Agreement, CONTRACTOR shall furnish all technical services, including labor, material, equipment, transportation, supervision and expertise to perform all operations necessary and required to satisfactorily complete the services required in this Agreement.

2. Contract Term

The term of this Agreement shall be for five (5) years from the date of execution, unless otherwise terminated. Extensions of time may be granted by the City Manager upon a showing of good cause. CONTRACTOR shall not proceed with any work under this contract until notified in writing by CITY. Agreement may be renewed for an additional five (5) one-year period at the sole option of the City.

3. Payment of Fees and Expenses

CITY agrees to pay CONTRACTOR an amount not to exceed Twelve Million Five Hundred Thousand and No/100 Dollars ($12,500,000.00) at the unit prices shown in Exhibit “C” unless upon written modification to this Agreement signed by both parties. CONTRACTOR shall submit progress payment invoices to CITY no more frequently than monthly to be paid in accordance with the procedures set forth in Exhibit "C" attached and incorporated by reference.

All invoices, including detailed backup, shall be sent to City of Sunnyvale, attention Accounts Payable, P.O. Box 3707, Sunnyvale, CA 94088-3707, or accountspayable@sunnyvale.ca.gov. Payment shall be made within thirty (30) days upon receipt of an accurate, itemized invoice by CITY’s Accounts Payable Unit.

4. No Assignment of Agreement

CONTRACTOR shall bind themselves, their partners, successors, assigns, executors, and administrators to all covenants of this Agreement. Except as otherwise set forth in this Agreement, no interest in this Agreement or any of the work provided for under this Agreement shall be assigned or transferred, either voluntarily or by operation of law, without the prior written approval of CITY. However, claims for money due to or to become due to CONTRACTOR from CITY under this Agreement may be assigned to a bank, trust company or other financial institutions, or to a trustee in bankruptcy, provided that written notice of any such assignment or transfer shall be first furnished to CITY. In case of the death of one or more members of

CONTRACTOR's firm, the surviving member or members shall complete the services covered by this Agreement. Any such assignment shall not relieve CONTRACTOR from any liability under the terms of this Agreement.

5. Independent Contractor

CONTRACTOR is not an agent or employee of CITY but is an independent contractor with full rights to manage its employees subject to the requirements of the law. All persons employed by CONTRACTOR in connection with this Agreement will be employees of CONTRACTOR and not employees of CITY in any respect. CONTRACTOR is responsible for obtaining statutory Workers' Compensation coverage for its employees.

6. Standard of Workmanship

CONTRACTOR represents and maintains that it is skilled in the professional calling necessary to perform the services and its duties and obligations, expressed and implied, contained herein, and CITY expressly relies upon CONTRACTOR's representations regarding its skills and knowledge. CONTRACTOR shall perform such services and duties in conformance to and consistent with the standards generally recognized as being employed by professionals in the same discipline in the State of California.

7. Responsibility of CONTRACTOR

CONTRACTOR shall be responsible for the professional quality, technical accuracy and the coordination of the services furnished by it under this Agreement and in compliance with the Water Pollution Control Plant's SOPs (Exhibit B). Neither CITY's review, acceptance nor payment for any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement and CONTRACTOR shall be and remain liable to CITY in accordance with applicable law for all damages to CITY caused by CONTRACTOR's negligent performance of any of the services furnished under this Agreement.

8. Right of CITY to Inspect Records of CONTRACTOR

CITY, through its authorized employees, representatives, or agents, shall have the right, at any and all reasonable times, to audit the books and records including, but not limited to, invoices, vouchers, canceled checks, time cards of CONTRACTOR for the purpose of verifying any and all charges made by CONTRACTOR in connection with this Agreement. CONTRACTOR shall maintain for a minimum period of three (3) years from the date of final payment to CONTRACTOR or for any longer period required by law, sufficient books and records in accordance with generally accepted accounting practices to establish the correctness of all charges submitted to CITY by CONTRACTOR. Any expenses not so recorded shall be disallowed by CITY.

9. No Pledging of CITY's Credit

Under no circumstances shall CONTRACTOR have the authority or power to pledge the credit of CITY or incur any obligation in the name of CITY.

10. Ownership of Material

All material, including information developed on computer(s), which shall include, but not be limited to, data, sketches, tracings, drawings, plans, diagrams, quantities, estimates, specifications, proposals, tests, maps, calculations, photographs, reports and other material developed, collected, prepared or caused to be prepared, under this Agreement shall be the property of CITY, but CONTRACTOR may retain and use copies thereof.

CITY shall not be limited, in any way, in its use of said material, at any time, for work associated with Project. However, CONTRACTOR shall not be responsible for damages resulting from the use of said material

for work other than Project, including, but not limited to the release of this material to third parties for work other than on Project.

11. Indemnity

CONTRACTOR shall indemnify and hold harmless CITY and its officers, officials, employees and volunteers against any and all suits, claims, damages, liabilities, costs and expenses, including attorney fees, arising out of the performance of the work described herein, caused by or related to the negligence, recklessness, or willful misconduct of CONTRACTOR, its employees, subcontractors, or agents in the performance (or non-performance) of services under this Agreement.

12. Insurance Requirements

CONTRACTOR shall take out and maintain during the life of this Agreement policies of insurance as specified in Exhibit "D" attached and incorporated by reference, and shall provide all certificates and/or endorsements as specified in Exhibit "D."

13. Wage Rates

Pursuant to the Labor Code of the State of California, or any applicable local law, Owner has ascertained the general prevailing rate per diem wages and rates for holidays, and overtime work in the city, for each craft, classification or type of laborer, worker, or mechanic needed to execute this Contract. Owner has adopted, by reference, the general prevailing rate of wages applicable to the work to be done under the Contract, as adopted and published by the Division of Labor Standards Enforcement and Labor Statistics and Research of the State of California, Department of Industrial Relations, to which reference is hereby made for a full and detailed description. A copy of the prevailing wage rates may be reviewed in the office of the Director of Public Works, City of Sunnyvale, 456 West Olive Avenue, Sunnyvale, California. Wage rates can also be obtained through the California Department of Industrial Relations website at:
http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm

Neither the notice inviting bids nor this Contract shall constitute a representation of fact as to the prevailing wage rates upon which the Contractor or any subcontractor may base any claim against Owner.

It shall be mandatory upon Contractor and upon any subcontractor to pay not less than the specified rates to all laborers, workers, and mechanics employed in the execution of the Contract. It is further expressly stipulated that Contractor shall, as a penalty to Owner, forfeit two hundred dollars ($200.00) for each calendar day, or portion thereof, for each laborer, worker, or mechanic paid less then the stipulated prevailing rates for any work done under this Contract by Contractor or by any subcontractor; and Contractor agrees to comply with all provisions of Section 1775 of the Labor Code.

In case it becomes necessary for Contractor or any subcontractor to employ on the project under this Contract any person in a trade or occupation (except executives, supervisory, administrative, clerical, or other non-manual workers as such) for which no minimum wage rate is herein specified, Contractor shall immediately notify Owner who will promptly thereafter determine the prevailing rate for such additional trade or occupation and shall furnish Contractor with the minimum rate based thereon. The minimum rate thus furnished shall be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

14. Conflict of Interest

CONTRACTOR shall avoid all conflicts of interest, or appearance of conflict, in performing the services and agrees to immediately notify CITY of any facts that may give rise to a conflict of interest. CONTRACTOR is aware of the prohibition that no officer of CITY shall have any interest, direct or indirect, in this Agreement or

in the proceeds thereof. During the term of this Agreement CONTRACTOR shall not accept employment or an obligation which is inconsistent or incompatible with CONTRACTOR'S obligations under this Agreement.

15. Governing Law, Jurisdiction and Venue

This Agreement shall be governed by and construed in accordance with the laws of the State of California, without regard to conflict of law or choice of law principles. Proper venue for legal actions will be exclusively vested in a state court in the County of Santa Clara. The parties agree that subject matter and personal jurisdiction are proper in state court in the County of Santa Clara, and waive all venue objections.

16. Records, Reports and Documentation

CONTRACTOR shall maintain complete and accurate records of its operation, including any and all additional records required by CITY in writing. CONTRACTOR shall submit to CITY any and all reports concerning its performance under this Agreement that may be requested by CITY in writing. CONTRACTOR agrees to assist CITY in meeting CITY's reporting requirements to the state and other agencies with respect to CONTRACTOR's work hereunder. All records, reports and documentation relating to the work performed under this Agreement shall be made available to City during the term of this Agreement.

17. Termination of Agreement

A. If CONTRACTOR defaults in the performance of this Agreement, or materially breaches any of its provisions, CITY at its option may terminate this Agreement by giving written notice to CONTRACTOR. In the event of such termination, CONTRACTOR shall be compensated in proportion to the percentage of satisfactory services performed or materials furnished (in relation to the total which would have been performed or furnished) through the date of receipt of notification from CITY to terminate. CONTRACTOR shall present CITY with any work product completed at that point in time.

B. Without limitation to such rights or remedies as CITY shall otherwise have by law, CITY also shall have the right to terminate this Agreement for any reason upon forty-five (45) days' written notice to CONTRACTOR. In the event of such termination, CONTRACTOR shall be compensated in proportion to the percentage of services performed or materials furnished (in relation to the total which would have been performed or furnished) through the date of receipt of notification from CITY to terminate. CONTRACTOR shall present CITY with any work product completed at that point in time. The City may terminate the project at any time for its own convenience. If the City terminates the project, Contractor shall remove all equipment and restore the site within 45 days of notification in writing by the City.

C. If CITY fails to pay CONTRACTOR, CONTRACTOR at its option may terminate this Agreement if the failure is not remedied by CITY within (30) days after written notification of failure to pay.

18. Subcontracting

None of the services covered by this Agreement shall be subcontracted without the prior written consent of CITY. Such consent may be issued with notice to proceed if subcontract CONTRACTORs are listed in the project work plan.

19. Compliance with Laws

(a) CONTRACTOR shall not discriminate against, or engage in the harassment of, any City employee or volunteer or any employee of CONTRACTOR or applicant for employment because of an individual's race, religion, color, sex, gender identity, sexual orientation (including heterosexuality, homosexuality and bisexuality), ethnic or national origin, ancestry, citizenship

status, uniformed service member status, marital status, family relationship, pregnancy, age, cancer or HIV/AIDS-related medical condition, genetic characteristics, and physical or mental disability (whether perceived or actual). This prohibition shall apply to all of CONTRACTOR's employment practices and to all of CONTRACTOR's activities as a provider of services to the City.

(b) CONTRACTOR shall comply with all federal, state and city laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Agreement.

20. Changes

CITY or CONTRACTOR may, from time to time, request changes in the terms and conditions of this Agreement. Such changes, which are mutually agreed upon by CITY and CONTRACTOR, shall be incorporated in amendments to this Agreement.

21. Other Agreements

This Agreement shall not prevent either Party from entering into similar agreements with others.

22. Severability Clause

In case any one or more of the provisions contained herein shall, for any reason, be held invalid, illegal or unenforceable in any respect, it shall not affect the validity of the other provisions which shall remain in full force and effect.

23. Captions

The captions of the various sections, paragraphs and subparagraphs, of the contract are for convenience only and shall not be considered nor referred to for resolving questions of interpretation.

24. Entire Agreement; Amendment

This writing constitutes the entire agreement between the parties relating to the services to be performed or materials to be furnished hereunder. No modification of this Agreement shall be effective unless and until such modification is evidenced by writing signed by all parties.

25. Governing Law, Jurisdiction and Venue

This Agreement shall be governed by and construed in accordance with the laws of the State of California, excluding its conflict of law principles. Proper venue for legal actions will be exclusively vested in a state court in the County of Santa Clara. The parties agree that subject matter and personal jurisdiction are proper in state court in the County of Santa Clara, and waive all venue objections.

26. Miscellaneous

Time shall be of the essence in this Agreement. Failure on the part of either party to enforce any provision of this Agreement shall not be construed as a waiver of the right to compel enforcement of such provision or any other provision.

IN WITNESS WHEREOF, the parties have executed this Agreement.

ATTEST:

By_____
City Clerk

CITY OF SUNNYVALE ("CITY")

By_____
City Manager

SYNAGRO-WWT, INC. ("CONTRACTOR")

By_____

_____
Name/Title

APPROVED AS TO FORM:

_____
City Attorney

By_____

_____
Name/Title

Exhibit A

Detailed Scope of Work For Water Pollution Control Plant Biosolids Handling & Disposal and Digester Cleaning

I. General

The City of Sunnyvale is seeking qualified Contractors to provide services for the Water Pollution Control Plant (WPCP), including the following:

- Dredging, Dewatering, and Disposal of Solids from Oxidation Pond #2
- Dewatering and Disposal of Solids from Anaerobic Digesters (digested solids from primary treatment)
- Periodic Cleaning, Dewatering and Disposal of Solids from the Anaerobic Digesters.

The services will be performed under a five-year contract, with possible extensions of up to five additional years. The services will occur during the period preceding the construction and startup of new secondary treatment facilities based on the conventional activated sludge (CAS) process. This is referred to as the "pre-CAS" period. Pond solids dredging & dewatering will likely be terminated at the beginning of the pre-CAS period.

Startup of the CAS process is expected to occur during the second half of 2023. After start-up, there is expected to be a period (estimated 1-2 years) before permanent WPCP facilities for thickening waste activated sludge (WAS) and dewatering of anaerobically digested solids from the existing primary and new secondary treatment facilities are completed. This period is referred to herein as the "post-CAS" period. The City may seek to have the thickening and dewatering services during the post-CAS period performed by the Contractor provided that a mutually agreeable price for such services can be negotiated. Additional information regarding the post-CAS period are described in Section II.D "Proposer Capabilities for Post-CAS Period".

II. Project Information

A. Description

The project involves all work associated with the three "pre-CAS" period services listed in Section I above and described in greater detail in Section III, (Contractor Scope of Services).

B. Location

The WPCP is located at 1444 Borregas Avenue, Sunnyvale, Santa Clara County, California. The site lies near the South San Francisco Bay, in the northern part of the City of Sunnyvale. The main plant site includes approximately 16.5 acres of land, with approximately 440 acres of Oxidation Ponds, and several associated property rights. The City's SMaRT (Sunnyvale Materials Recovery and Transfer) Station lies to the east and the Sunnyvale East Channel forms the eastern boundary of the site. The City's municipal solid waste landfill borders the south and west of the site. The Sunnyvale West Channel forms the western boundary of the site. Several high technology businesses surround the site beyond the City-owned land and Caribbean Drive within Moffett Park. San Francisco Bay is directly north of the site. Oxidation Pond #2 is located north and west of the main treatment plant area.

C. Existing Conditions

The existing WPCP was originally built in 1956. With additions over the subsequent 15-20 years, it grew to a tertiary treatment facility with an average dry weather flow of approximately 12 million gallons per day (MGD) and a permitted average dry weather flow of 29.5 MGD.

Primary sludge (and scum) collected in the Primary Sedimentation Basins is pumped to the anaerobic digesters, where anaerobic bacteria convert the sludge to CO_2, methane, and cell mass. The digesters are mixed and heated to approximately 100 °F. Typically, if three or four digesters are in service, one digester is used as a secondary digester (acting essentially a settling basin) to thicken the digested sludge prior to dewatering. The unthickened fraction (decant) from the secondary digester is returned to the plant headworks. Over the period of 2009-2017, the WPCP's four anaerobic digesters underwent a complete rehabilitation that included replacement of most mechanical and electrical equipment and conversion from floating to fixed covers.

Sludge lagoons located on the east side of the treatment plant site were utilized prior to 1995 to dewater and store digested primary sludge, although in later years, a significant portion of the digested sludge passed through the lagoons and was returned to the ponds. The lagoons were cleaned out, and in 1994-95, a sludge dewatering and drying system was constructed at that location. That system was operated through 2016, when it was removed to create room for new plant headworks and primary treatment facilities currently under construction. Dried solids from that system were hauled off-site for beneficial reuse.

Secondary solids are generated in the 440 acre Oxidation Pond system. These solids, consisting of algae and bacteria, are removed in the Tertiary Plant's Air Flotation Tanks (AFTs), and to a lesser degree, in the Dual Media Filters (DMFs). Some solids are also generated by Fixed Growth Reactors (FGRs), which are used to nitrify the pond effluent prior to entering the AFTs. Solids removed in the AFTs (referred to as "float") and in the DMF backwash stream are returned to the oxidation ponds. This has been the case since operation of the Tertiary Plant commenced in the late 1970s.

In 2004, a pilot study was conducted to evaluate feasibility and operating parameters for a project to remove, dewater, and dispose of solids from the Oxidation Ponds. In late 2009, the City awarded a contract for a full-scale dredging and dewatering project, designed to remove a portion of the accumulated solids in Oxidation Pond #2. Actual dredging operations did not commence until December 2011. Because of likely impacts of the project on the pond effluent ammonia concentrations during the summer months when very stringent NPDES effluent limits apply, dredging operations were subsequently limited to the period of September 15 – April 15 (this period may be extended through the end of May at the City's sole discretion if conditions are favorable).

Dewatering equipment for pond solids used by Synagro were initially located on the easternmost end of the WPCP site. When the digester dewatering system was demolished in 2016 to make room for new primary treatment facilities, the Contractor's equipment was moved the present location north of Primary Sedimentation Basin #10., as shown in Figure 2. In February 2016, Synagro also initiated dewatering of digester biosolids under the same contract.

The net volumes of pond and digester solids removed and dewatered over the past three years under the current project were as follows. In addition to the quantities listed, solids accumulated from digester cleaning operations were also removed and disposed of during this period.

Year	Digester Solids, dry tons/yr	Pond Solids, dry tons/yr
2015	219	2,748
2016	411	1,792
2017	425	2,104

The City prepares an Annual Biosolids Reports for submission to the USEPA and Regional Water Board.

D. Proposer Capabilities to be Evaluated for Post-CAS Period

Upon startup of the CAS system, the Contractor may be asked to provide a cost estimate for thickening of WAS and dewatering of the combined primary plus secondary digester solids. The City anticipates that WAS thickening by the Contractor will be required for a period of one to two years until the WPCP thickening facilities are completed.

WAS Thickening

The WAS thickening operation will most likely be located in the same area currently used for pond and digester solids dewatering. As noted above, pond dredging and dewatering will likely be phased out upon commencement of WAS thickening, in order to provide space for thickening equipment.

Expected WAS flows and characteristics are as follows:

WAS dry lb/day	14,500
WAS flow, gal/day*	225,600
WAS flow, gpm*	157

* Based on WAS at 0.77% TS. Actual %TS may vary from 0.5% to 0.9%. Flows will vary accordingly.

WAS production will be continuous, so that thickening will need to operate on a continuous or near-continuous basis. The required thickener hydraulic capacity will be at least 200 gpm for duty unit(s), with 100% standby (additional 200 gpm) available, so that thickening operations can be maintained at full capacity during an equipment failure or periods of maintenance. The thickening system must have sufficient turn-down capability so as to operate continuously during periods of low WAS production, or provide for storage during such periods. The Contractor may be required to also provide temporary piping to transport WAS to the thickening area, in addition to pumping and piping needed to convey the thickened WAS (TWAS) back to the digester area. During the start-up and testing phase of the CAS system, WAS quantities may vary widely from the estimates provided above.

Typical Performance Requirement for WAS Thickening

- Solids capture efficiency > 95%, 5-day running average
- Thickened solids % TS: > 5.5% TS, 5-day running average

The City does not guarantee that services for WAS thickening will be incorporated into the contract. However, Contractors' capabilities for providing these services will be considered in the decision to incorporate these services into the contract.

Dewatering of Digested Primary + Secondary Biosolids

Upon startup of the CAS system, pond solids dredging will likely be discontinued. However, digester solids production will increase significantly with the addition of the TWAS to the digesters, so that the total volume to be dewatered will be comparable to that during the period of pond cleaning. There will be a corresponding increase in the %TS values in the primary digesters (and, if used, the secondary

digester), which will likely eliminate the current practice of pre-thickening digested sludge in the secondary digester prior to dewatering. The expected annual average rate of digested sludge production after startup of the CAS system is 20,400 lb/day, equivalent to 126,600 gal/day at 1.9% TS. The expected maximum monthly rate is 23,000 lb/day, or 147,100 gal/day. For dewatering facilities operating at 92% capture efficiency, the estimated net digester biosolids production will be approximately 3,400 dry tons/yr. These quantities are expected to increase by approximately 0.5% annually.

The City does not guarantee that services for WAS thickening will be incorporated into the contract. However, Contractors' capabilities for providing these services will be considered in the decision to incorporate these services into the contract.

III. Contractor Scope of Services

A. *Pond Solids Dredging and Dewatering and Disposal*

This element of the project will continue the process of removing a limited quantity of accumulated sediments (biosolids) from Oxidation Pond #2 by dredging, and for dewatering and disposal of those solids. Facilities for dewatering shall be located at a designated area in the main plant north of Primary Sedimentation Basin #10 in the Main Treatment Plant Area. Therefore, dredged solids must be transported from the dredge to the dewatering area, through a pipeline provided by the City.

The 2004 pilot project and 2010-2018 full scale project verified that pond solids meet all regulatory requirements for Class "B" biosolids. Analytical data from the full-scale project are contained in Annual Biosolids Reports.

Removal of Pond Solids

It is the City's intent that the Contractor remove, process, and dispose of solids from Oxidation Pond #2 at a rate not to exceed 50 dry tons on any single day, with a total removal of 2,000 dry tons per year, or up to 10,000 dry tons over the course of the contract. This daily limit has been selected to minimize impacts of the project on the oxidation pond effluent quality and on day-to-day WPCP operations.

The City may accelerate the schedule (i.e., allow processing of greater than 2000 ton's year) at its sole discretion. Conversely, the City may require processing at a lower daily rate, require dredging operations to be moved to a different area of the pond, or order a complete halt to dredging and processing if the project results in or threatens to result in unacceptable impacts on wastewater quality or plant operations, or for any other reason determined by the City to be in its best interests.

The City has identified that past dredging operations during the summer months (June-September) had adverse impacts on the WPCP's ability to consistently meet the seasonal ammonia limit specified in its NPDES permit. **For this reason, pond dredging operations are limited to the period of September 15 – April 15** with the understanding that this period may be extended through the end of May at the City's sole discretion if conditions are favorable.

Solids shall be removed from specific locations within Oxidation Pond #2 as specified by the City. The specified locations may include any area within 100-750 feet of the pond levees as shown in Figure 3. Dredging shall not be conducted within 100 feet of the levees. The Contractor is required to dredge by leveling out ("mowing") an area rather than potholing, so as to achieve a uniform depth within the working area, since the overall goal is to restore water column depth and uniformity.

The Contractor is required to utilize a GPS-based system to continuously monitor and record the dredging location (minimum recording interval 5 minutes). Dredge cutterhead depth shall also be monitored and recorded continuously. The Contractor shall provide the City with a weekly summary report that, at a minimum, delineates on an aerial map the specific area dredged and maximum cutterhead depth for each day of operation. All data shall be summarized and provided in an electronic format acceptable to the City by the beginning of the following week.

Refer to Section III.F for instructions regarding requirements and pricing for a pipeline to convey dredged pond solids to the solids processing area, and to Section III.E for project mobilization and demobilization pricing.

Pond Solids Dewatering and Disposal

Processing (dewatering) of the removed pond solids in preparation for transportation shall be done within an area identified on Figure 2. Electrical power at 480 volts is available in that area, sourced from the plant's 5 kV switchgear via breaker 52-2 and 500 kVA step-down transformer. The Contractor may utilize this power at no cost, but is responsible for providing its own Motor Control Center. The City will provide a source of recycled water (No. 3 water) at this location for use as washdown water. Filtrate and/or centrate may be discharged to a nearby primary effluent junction box (Junction Box #10) or to the plant drainage system. All connections to these utilities and drains, and all other necessary equipment, materials, supplies, storage facilities and labor shall be supplied by the Contractor. Solids shall be dewatered to a level determined by the Contractor for efficiency of operations and disposal.

Pond Solids: Estimated Quantity

For solids from Oxidation Pond #2, the net quantity of dewatered solids (dry tons) hauled from the WPCP for disposal or reuse will be the sole basis of payment under the contract. Payment will be on a dry ton basis. Proposals shall specify a unit price per dry ton that includes removal of material from Oxidation Pond #2, dewatering, transportation, disposal, and all related costs. Proposers shall assume that the material will continue to meet all requirements for Class "B" biosolids.

B. Digester Solids Dewatering (Pre-CAS Period) and Disposal

The Contractor shall provide services for dewatering and disposal of digested solids produced from the WPCPs anaerobic digesters. Currently, dewatered digester biosolids are generated at a rate of approximately 425 dry tons/year.[1] This rate is expected to continue at approximately this level until the CAS facilities come on line.

Current practice is for WPCP Operations staff to deliver digested biosolids at an average total solids content of ~2% through an existing pipeline that terminates near the wall of Primary Sedimentation Basin #10. From there, the Contractor conveys the material to its holding/mixing tank and dewatering equipment. Dewatered solids are stockpiled in the same area and removed at frequent intervals. By mutual agreement, the Contractor's digester solids dewatering system is operated once per week, with the WPCP delivering 80,000 to 100,000 gallons/day (this flow may be discontinuous, and is coordinated with Contractor operations to the extent practicable). This schedule has proven be

[1] This value reflects current operational practices (partial thickening in the secondary digester, with only thickened biosolids directed to the dewatering process) and is significantly below the total quantity of digested sludge potentially available if all digested sludge were processed through dewatering (i.e., no wasting of secondary digester decant).

efficient for both Contractor and WPCP Operations staff, although the WPCP remains open to other mutually satisfactory schedules.

The Contractor's digester dewatering and stockpiling operations shall be conducted in the same area that is used for pond solids dewatering, currently just north of Primary Sedimentation Basin #10.

Performance Requirements for Digester Solids Dewatering

Performance requirements for the Contractor's digester dewatering operations are as follows:

- Solids capture efficiency > 90%, 5-day running average
- Dewatered solids % TS: > 21%, 5-day running average (pre-CAS)
- Equipment availability ((Uptime)/(Uptime + Downtime)) > 90%

All dewatering and associated equipment shall be maintained in good condition to provide a high reliability and availability. Recognizing that space for Contractor operations is limited, the Contractor is not required to have standby dewatering capacity available on site.

C. Digester Cleaning and Disposal

Contractor shall provide digester cleaning, solids dewatering, solids transportation and disposal services. The WPCP's current cleaning schedule, which is expected (but not guaranteed) to continue through the contract period, is roughly one digester cleaning per year.

The procedure for digester cleaning calls for WPCP Operations to stop feeding the digester, secure the digester after gas production has ceased (approximately 10 days), and to remove digested biosolids to just below the level of the entry hatches (approximately grade level). At this level, the volume of material remaining is ~50,000 cubic feet in digesters #1, #2, #3 and ~78,000 cubic feet in digester #4. The solids removed by WPCP Operations staff are routed to the dewatering system and considered part of the routine digester solids dewatering stream for payment purposes. After this preliminary solids removal step, the digester is then turned over to the Contractor to complete the cleaning process.

All remaining material in the digester shall be removed by the Contractor, including any rags or fibrous material attached to piping or supports. The WPCP will provide electrical power and washwater. The Contractor shall utilize its own pump(s) and temporary piping to convey the material to its dewatering and transport facilities. Since very little area is available for dewatered solids storage, material must be removed in a timely manner (e.g., within one week). If necessary, the WPCP will coordinate with the Contractor to reduce the volume delivered for routine digester dewatering, or adjust delivery schedules. However, if WAS thickening is in progress (post-CAS period), that operation must continue on the normal schedule.

D. Summary of Estimated Quantities

The estimated quantities of solids generated are listed in Table 1. Estimates for pond solids, digester solids, and digester cleaning solids represent the net quantities transported for final disposal. The estimate for WAS thickening represents the quantity to be processed (thickener feed). These values represent the City's current best estimates based on current flow projections and other factors, and should not be interpreted as guaranteed amounts. Actual quantities may vary.

Table 1. Estimated Quantities of Solids

Shaded quantities are used for Unit Cost Evaluation

Year	Pond Solids dry tons/yr	Digester Solids Dewatering dry tons/yr	Digester Cleaning	WAS Thickening dry tons/day	WAS Thickening dry tons/yr
2019-20[1]	2000	425	Digester #4	--	--
2020-21	2000	425	Digester #1	--	--
2021-22	2000	425	Digester #2	--	--
2022-23	2000	425	Digester #3	--	--
2023-24[2]	2000	425 - 1400	Digester #4	0 - 7.25	0 - 882
2024-25[3]	0	3400	Digester #1	7.25	2650

1. Assumes contract start date of 7/1/19.
2. Range for digester solids reflects uncertainties associated with start-up date for CAS system. For purposes of evaluating cost proposals, the shaded value (425 dry tons) will be used.
3. 2024-25 values are for informational purposes only, to illustrate how expected quantities will change upon when CAS system is fully operational.

E. Other Requirements Applicable to Successful Proposer (Contractor)

Disposal Options

The Contractor may employ any legal method for disposed of biosolids generated under this contract. However, the City is putting greater emphasis on disposal method the involve beneficial reuse of the material (e.g., land application, composting), and those that identify multiple disposal options or sites.

During the course of this contract, alternative disposal options may arise that could reduce the City's costs for disposal of some or all of the solids generated from the pond cleaning operation or from digesters, such as reuse for marsh/habitat restoration. Alternatively, requirements for diversion of organics from landfill (driven by legislation and/or City policy) may result in the City placing limits on the quantity of biosolids that can be disposed via landfilling. In such cases, the City provide the necessary details and direct the Contractor to provide an adjusted price for the affected quantities. If a mutually satisfactory price cannot be negotiated, the City reserves the right to terminate some or all of the work under this contract in accordance with the Termination of Agreement section of the Services Agreement.

Equipment Requirements

Contractor shall provide adequate equipment to perform the Work. Only equipment in good working condition as judged by the City is acceptable. The Contractor shall furnish only experienced and skilled personnel to operate the equipment. The City may reject the use of equipment found to be in unsatisfactory condition. In the event of any rejection by the City, Contractor shall remove the unsatisfactory equipment and replace it with acceptable equipment.

The Contractor shall conspicuously mark each tractor/trailer unit used in performing work under this contract with the maximum legal weight of the unit when loaded and a corresponding "full load" indicator inside the trailer to guide loading.

The City shall not be responsible for damage to or theft of any property of Contractor or Contractor's agents on or off the City's property.

Loading, Possession, Transportation and Unloading

The Contractor shall be responsible for all loading, transportation and unloading, using the Contractor's own equipment. Contractor shall transport the biosolids to the disposal or reuse site(s), where they shall be utilized in accordance with site-specific permits (or equivalent) and in accordance with applicable local, State, and federal regulations.

Contractor is responsible for meeting all local, State, and federal regulatory requirements for the lawful transport and unloading of the wastewater biosolids. The Contractor shall verify that each load does not exceed the legal weight limit for the respective equipment being loaded prior to removing the trailer from the site. The Contractor shall not exceed the gross highway weight allowance in pounds when loaded based on the length of the truck (bridge law) or 80,000 lbs, whichever is lower.

The Contractor shall be responsible for controlling and abating any odor, dust, spillage, insect, vermin, or any other nuisance arising from the operation. The City will provide water and a washdown area for use by Contractor to keep the loading site and trailers clean and free of spillage.

Any spillage or discharge of material at the WPCP or on public roads shall be promptly cleaned up by Contractor. If the City is required to clean up the spillage, all costs incurred will be deducted from monies owed to the Contractor.

Contractor shall prepare a Contingency Plan for responding to accidents or spills and submit this plan to the City for approval within twenty (20) calendar days from the date of issuance of Notice of Award to Contractor.

Hauling operations shall be performed in a manner that minimizes the impact on existing WPCP operations. Proposed haul routes and hours of operation shall be provided to the City prior to start of work. Such routes and hours of operation shall comply with all governmental agency requirements in the jurisdictions associated with this operation.

Cleanup and Restoration of Job Site

The Contractor shall be responsible for the cleanup and restoration of the job site, haul routes and disposal site involved in the work subject to final inspection and acceptance by the City prior to final payment under the contract.

The Contractor shall be responsible for the care and preservation of City property and adjacent or coterminous property. Any parts of such property injured, damaged or disturbed as a result of the work shall be restored in a manner acceptable to the City at Contractor's expense.

Responsibility for all Cost Associated with Disposal or Reuse

The Contractor shall be responsible for transporting the biosolids to the Contractor-specified reuse site(s) or landfill disposal in a safe clean manner and in accordance with all laws, regulations, and requirements of the Regional Water Quality Control Board, the State Water Resources Control Board, the State Department of Public Health, the State Solid Waste Management Board, the Bay Area Air Quality Management District, and any other applicable local, State and federal agency requirements. Any permits, permit fees, other fees, or taxes shall be the responsibility of Contractor and included in the Contractor's unit price.

Permits

Before commencing work, Contractor shall submit to the City copies of all permits required by other governmental agencies for performing the work of loading, transporting and disposing of or beneficially reusing the biosolids.

For beneficial reuse, the permits shall include the permit or approval issued to the specified beneficial reuse site by the Regional Water Quality Control Board and other governmental agencies concerned (including, where applicable, County agencies), as necessary to specifically authorize the proposed beneficial use at the designated site(s).

For landfilling or use as landfill cover, Contractor shall provide documentation indicating that the specified landfill meets the design criteria specified in 40 CFR 258, Subtitle D and indicating that the biosolids material meets the Waste Acceptance Criteria (WAC), as defined by the Regional Water Quality Control Board, for the specified landfill. Such documentation shall be provided before commencing the Work. Any additional sampling and analyses required to demonstrate that the material meets the WAC for the specified landfill shall be Contractor's responsibility.

Any permitting associated with expansion of the City's treatment facilities or increase production of biosolids resulting therefrom will be the City's responsibility.

Documentation

Contractor shall prepare a monthly report to the City containing data on the monthly and cumulative annual quantities, with bills of lading and other relevant information. The Contractor shall also prepare an annual report with all documentation necessary for 40 CFR 503 regulatory reporting requirements, including, but not limited to, total quantities, map(s) of the reuse site(s) showing the sections where City biosolids were applied during the prior year and documentation of the biosolids application rates, etc.. The annual report shall be submitted to the City by February 1 of the following year. Additional documentation and reporting requirements related to the pond dredging process are described in that section of the Scope of Work.

Sampling

The City will be responsible for ongoing sampling and analysis needed to characterize the pond and digester biosolids for disposal or reuse in accordance with the requirements of 40 CFR Part 503, and will provide the necessary information to the Contractor. Any additional verification testing required by the disposal or reuse site shall conducted by the Contractor at the Contractor's own expense. The City will also collect daily composite samples of dewatered biosolids for analysis of total solids (%TS) and periodically for volatile solids (%VS). The Contractor will be responsible for determining the net wet weight for each truckload hauled, using the scale at the adjacent Sunnyvale Materials Recovery and Transfer Station, or a public scale located in reasonable proximity to the WPCP. For payment purposes, the truckload wet weight values will be converted to dry weight basis, using a representative %TS value from the City's daily samples. If a direct match between a given truckload and its corresponding %TS value is not practicable, the %TS value used may be a running average value from multiple samples collected during the period that the dewatered material was generated.

Responsibility of Contractor

The City assumes no responsibility whatsoever for loss or damage of equipment owned or operated by the Contractor, its agents, or employees.

All safety orders, rules, and recommendations of the Division of Industrial Safety of the Department of Industrial Relations of the State of California applicable to the work specified in this Request for Proposals shall be obeyed and enforced by Contractor. Contractor shall comply with all applicable federal, state, and local laws, ordinances, codes, and regulations, and compliance with WPCP SOPs.

Work and Safety Plan

The Contractor shall submit a Work Plan for approval by the City a minimum of twenty (20) calendar days prior to the start of work. The Work Plan shall address in detail the following items, and any other items that Contractor or City deems appropriate:

- Description of proposed equipment
- Description of removal and loading operation
- Hauling Plan (include routes, hours of operation and emergency spill plan.)
- Description of disposal or reuse site(s).
- Description of project safety requirements. Note: In addition to the Contractors own safety procedures and requirements, the Contractor is subject to all WPCP safety requirement when on-site.

Project Management

The Contractor shall provide on-site supervision and overall project management as necessary to perform the work in a safe and efficient manner. The Contractor shall coordinate with designated WPCP Operations and Maintenance staff to minimize the impact of Contractor operations on treatment plant operations, and attend periodic progress meetings.

Exhibit B
WPCP's SOPs

CITY OF SUNNYVALE

Environmental Services Department
Water Pollution Control Plant
STANDARD OPERATING PROCEDURE

ENTRY TO WPCP
DURING BUSINESS HOURS & NON-BUSINESS HOURS

INTRODUCTION:

It is critical to identify every person onsite during a WPCP emergency evacuation and is vital to safety and personal security.

The WPCP business hours are: **Monday – Friday**
7 am – 4 pm
Excluding Holidays

PURPOSE:

To establish policy and procedures to inform administrative staff of the presence of all employees, contractors, vendors, visitors and anyone under escort at the WPCP. There are four distinct groups that must comply with the following procedures.

PROCEDURE:

1. City of Sunnyvale Employees: Those whose names appear on the WPCP In/Out dot board must "slide their dot" in the front lobby of the Administrative building to indicate their presence or absence on site during normal business hours. Business
2. City of Sunnyvale Employees: Those whose names do not appear on the WPCP In/Out board must sign in on the visitor log clip board at the front desk, entry is then permitted. These employees must sign out when leaving the premises.
3. Contractors/Vendors: Those who are expected on site to work at the WPCP or those who have made arrangements with a City of Sunnyvale employee prior to coming on site must sign In/Out on the visitors log to indicate their presence or absence on site during normal business hours.
4. Visitors: Those who have made prior arrangements with a City of Sunnyvale WPCP employee must sign In/Out on the visitors log to indicate their presence or absence on site during normal business hours AND be escorted by Plant Safety Trained staff.
5. Visitors: Those who are part of a large group, for a plant tour or have business with WPCP staff, must have made prior arrangements. These groups are considered under escort; in order to indicate their presence, the group leader must sign the group In/Out and must provide the groups' total headcount, during normal business hours.

6. Entry during non-business hours requires the consent of a WPCP Manager by a signed WPCP Entry Permit. The support services staff is responsible for creating the entry permit. A copy of the completed Entry Authorization Form (see attachment 1) will be distributed to all Senior Operators and Maintenance Senior with the original going to the requesting person. A log book of all current Entry Authorization Forms is maintained in the Administration Building lobby. During non-business hours, the Senior Operator shall ensure the validity of the WPCP Entry Permit form prior to allowing entry, and ensure that the visitors sign in as required.
7. Anyone that is not a WPCP employee requesting access to the WPCP and will not have an escort will need to take the Plant Safety training prior to any self-guided visit and sign in/out at the front desk. Please plan and schedule this training prior to arrival. The video plus any questions and answers will take no more than about ½ hour, however staff to provide the training require lead time to prepare.
8. WPCP staff entry to the plant during non-business hours, a WPCP employee must notify the Senior Operator immediately upon entering the facility. In addition, the employee must indicate their presence or absence on site by "sliding their dot" on the In/Out board during non-business hours.
9. Sunnyvale Public Safety and authorized WPCP operations staff are the only groups allowed entry to the plant without prior authorization during emergency situations.

CAUTION:

Failure to comply with this SOP could result in permit non-compliance, affect staff safety and could result in disciplinary actions up to and including termination.

SIGNATURES:

Approved Required ☒	*Water Pollution Control Plant Division Manager*	***Date***	11/14/14
Approved Required ☒	*Water Pollution Control Operations Manager*	***Date***	11/13/14
Approved Required ☒	*Water Pollution Control Maintenance and Facilities Manager*	***Date***	
Approved Required ☒	*Regulatory Programs Division Manager*	***Date***	2/10/15
Approved Required ☒	*Laboratory Manager*	***Date***	2/12/15

ATTACHMENTS

1 – City of Sunnyvale WPCP Entry Authorization Form

WPCP ENTRY PERMIT

This is to authorize _____
(Name)

representing _____ Entry into the WPCP
(Company Name)

for the purpose of _____
(Describe Project)

at _____
(Location)

Authorization is approved for the date(s) of _____ , during the
(Date)

hours of _____
(Time)

Questions pertaining to this entry form should be directed to _____
(Name)

_____
Approval Signature

_____
Date of Issue

The 24 hr. emergency phone number & contact person for _____
(Company)

is _____ @ _____
(contact person) **(phone number)**

The assigned Public Works construction inspector is _____
(Name)

@ _____
(24 hour phone number)

City of Sunnyvale

Confined Space Procedures

September 2014

DU-ALL SAFETY

45950 Hotchkiss St. • Fremont, CA 94539 • Tel: (510) 651-8289 • Fax: (510) 651-8937
http://www.du-all.com • E-mail: safety@du-all.com

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Appendices

REVISION HISTORY LOG

Date	Section	By	Correction Made
3-2013	All	Du-All Safety	Revised program with up to date requirements and procedures
6-30-2014	All	J. Moulton	Copied document into new Word file because original would not open for client.
6-30-2014		D. Hammons	Update draft comments from Sr. review
9-5-14	All	R. DeBusk	Revised based on comments from Staff

1.0 SCOPE AND APPLICATION

City of Sunnyvale is committed to employee safety in the work place and has adopted this Confined Space Program.

This Confined Space Program shall apply to all City of Sunnyvale employees, contracted employees, and any persons under the direct supervision of the Cities authorized personnel.

As such no employee is allowed to enter a confined space in which a hazardous atmosphere is deemed to exist unless doing so in an Emergency Rescue response with appropriate respiratory protection, communications following all safety protocol.

Confined spaces exist within the City of Sunnyvale station locations that could expose employees to hazardous condition. (Inventory- Appendix F).

This document has been prepared to ensure that employees who may enter or work near confined spaces are able to:

- Recognize, evaluate and control confined space hazards
- Save lives and protect employees from injuries and illnesses
- Promote safe and effective work practices
- Comply with pertinent confined space laws and regulations

Employees who work in or in connection with confined spaces are required to follow the procedures described in this program and to take all appropriate precautions to ensure that the work is performed safely. At no time should an employee enter a confined space or perform work or rescue in the space unless it can be done safely.

2.0 REFERENCES

a. California Code of Regulations, Title 8, (8CCR), Sections 5156 to 5158

b. Code of Federal Regulations, Title 29, (29CFR), Section 1910.146

c. California Code of Regulations, Title 8, (8CCR), Section 5143

d. California Code of Regulations, Title 8, (8CCR), Section 5155

3.0 DEFINITIONS

"Attendant" is an individual stationed outside a permit-required confined space that monitors entrants and performs special duties described in this procedure.

"Authorized entrant" is an employee who is fully trained and authorized by the City of Sunnyvale to enter a confined space.

"Authorized person" is someone who is approved or assigned by the employer to perform specific types of duties or to be at a specific location or locations on the job site.

"City of Sunnyvale Supervisor" is a person in the classification of manager, supervisor or lead worker.

"Competent Person" is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous or dangerous to employees and has authorization to take prompt corrective measures to eliminate or protect against those hazards.

"Confined Space" is a space that:

1) is large enough that an employee can enter and perform assigned work; and
2) has limited or restricted means for entry or exit; and
3) is not designed for continuous occupancy.

"Engulfment" means the surrounding and effective capture of a person by a liquid or finely divided solid material that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

"Entry" starts when any part of the first worker's body crosses the plane of entry into the confined space and continues until all workers have crossed the plane of entry to outside the confined space.

"Entry supervisor" is the person responsible for determining if acceptable entry conditions are present at a permit-required confined space where entry is planned and performed. The entry supervisor authorizes, oversees, and terminates work in confined spaces as required. The entry supervisor may perform the duties of the attendant or may delegate the attendant duties and perform the functions of an authorized entrant.

"Hazardous atmosphere" is an atmosphere that may expose employees to the risk of death, injury, or acute illness from one or more of the following causes:

- Oxygen deficiency where the oxygen concentration is less than 19.5% or oxygen enrichment where the oxygen concentration is greater than 23.5%;
- Flammable gas or vapor in excess of 10% of its lower flammable limit concentration;
- Toxic gas concentration in excess of the Cal-OSHA permissible exposure limits.

"Lead Entrant" is the entry team leader in a permit-required or non-permit-required confined space entry. This may be the entry supervisor, or the most experienced entry worker. Lead entrants will be responsible for continuous atmospheric monitoring while alone or while leading an entry team in the confined space.

"Non-Permit-Required Confined Space" is a confined space that does not contain, or with respect to atmosphere, have the potential to contain, any hazard capable of causing death or serious injury {5157 (b)}. Atmosphere testing equipment and a Confined space evaluation checklist (Appendix A) must be used to make the determination prior to each planned entry. Atmosphere monitoring equipment and mechanical ventilation must be used to ensure that the atmosphere remains healthful for the duration of the work in the space.

"Permit-Required Confined Space" is a space that meets the definition of a confined space and has any one or more of the following characteristics:

- contains or has the potential to contain a hazardous atmosphere; or
- contains a material that has the potential for engulfing an entrant; or
- has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section; and/or
- contains any other recognized serious safety or health hazards.

"Permit or Confined Space Entry Permit" is a document that authorizes work in confined spaces. The Entry Supervisor signs the permit and issues it to the assigned attendant who keeps it at the entry point during the entry procedure. The permit form is attached to this document as Appendix B.

"Personal Protective Equipment (PPE)" is safety equipment worn by one individual worker, to protect that worker from a hazard. It may include, but not be limited to protection for the head, eyes, hearing, respiratory system, hands, body, or feet.

"Qualified Person" is a person designated by the employer; and by reason of training, experience, or instruction has demonstrated the ability to perform safely all assigned duties; and when required is properly licensed in accordance with federal, state, or local laws and regulations.

"Responding Rescue Assistance Emergency Service" Sunnyvale Public Safety (408) 730-7180 and/or 911 have the capability and will provide all additional technical rescue service response for City of Sunnyvale confined space entry victims if needed to assist in extraction and transport to Medical Services Provider.

"Retrieval System" means the harness, lifeline, body hoist, and other equipment used for non-entry rescue of persons from confined spaces.

"Self-Contained Breathing Apparatus (SCBA)" means a full-face respirator connected via hose to a portable cylinder containing compressed breathing air.

"Standby Rescue Entrant" is a member of the confined space entry team or contracted service who meets the requirements of 8 CCR 5157(k)(1).

"Water Pollution Control Plant" - WPCP

4.0 RESPONSIBILITIES

4.1 PROGRAM ADMINISTRATOR

The Confined Space Program Administrator for City of Sunnyvale is the: **Risk Manager**
Responsibilities include:

4.1.1. Maintain log of confined space entries and classifications, reclassify confined spaces, if necessary.

4.1.2. Maintain log of entry permits.

4.1.3. Maintain and ensure all confined space entry equipment and all other safety equipment as required is inspected and in good safe operating condition.

4.1.4. Maintain inspection records and training records.

4.1.5. Arrange for annual refresher training & proficiency non-entry rescue entry.

4.1.6. Maintain Safety Data Sheets (SDSs) for specific confined spaces and make them available for use in entries.

4.1.7. Ensure appropriate equipment recommended in SDSs is available.

4.1.8. Review hazards to ensure appropriate protective measures.

4.1.9. Review incidents, injuries and near-miss incidents to determine appropriate safety measures are taken.

4.1.10. Review all canceled permits within the previous 12 months to ensure compliance of the program.

4.1.11. Ensure annually evaluation checklist, entry permits, and written program are annually reviewed and updated as needed.

4.2 MANAGERS AND SUPERVISORS

It is the responsibility of the Division Manager, Maintenance Manager and the Maintenance Supervisor to ensure that the requirements of this section are fully implemented throughout the departments. The Confined Space Administrator is available to assist with the completion of these tasks.

4.2.1. Ensure all equipment pre-use, regulatory and manufacture specified inspections are completed as required and forwarded to the Program Administrator.

4.2.2. Annually provide the Entry Permit Log to the Program Administrator for review by January 31st each year.

4.2.3. Ensure all safety training records are forwarded to the Program Administrator.

4.2.4. Maintain SDS's for specific confined spaces and makes them available for entries.

4.2.5. Ensure appropriate equipment recommended in SDSs is available.

4.2.6. Maintain assigned confined space and fall equipment inspection records and forward to the Program Administrator.

4.2.7. Review hazards to ensure appropriate protective measures are in place and all needed equipment has been identified and maintained in accordance with manufacturer instruction and specifications.

4.2.8. Review all injury incidents and near-miss incidents to determine appropriate safety measures that need to be taken and reported to the Program Administrator.

4.2.9. Obtain all required forms and documentation to include but not limited to the assessments, evaluation checklist and cancelled permit(s) immediately following the end of the job.

4.3 WORKING WITH CONTRACTORS

NOTE: When hired contractors perform confined space work in or on a City facility they are required to comply with all Cal-OSHA safety requirements and City staff will not be involved with their work.

When, in the unlikely event the City of Sunnyvale (Host employer) arranges to have employees work with another employer (Contractor) and perform work that involves a confined space entry covered by this standard, the host employer shall:

4.3.1. Inform contactor that the workplace contains a confined space and that confined space entry is allowed only through compliance with a confined space program meeting the requirements of this section, section 5157 or section 8355, depending which section applies to the contractor;

4.3.2. Apprise the contractor of the elements, including the hazards identified and that the City of Sunnyvale has experience with in the confined space, that make the space in question a confined space;

4.3.3. Apprise the contractor of any precautions or procedures that the City of Sunnyvale has implemented for the protection of employees in or near the confined space where the contactors personnel will be working;

4.3.4. Coordinate entry operations with the contractor, when both City of Sunnyvale personnel and contractor personnel will be working in or near the confined space.

4.3.5. Debrief the contractor at the conclusion of the conclusion of the confined space operation regarding the confined space program followed and any hazards confronted or created in the confined space during entry operations so that the City of Sunnyvale can incorporate the information into their program during the annual review.

NOTE: In addition to complying with the confined space requirements that apply to the City of Sunnyvale, each contractor who is retained to perform confined space entry operations shall:

4.3.6. Obtain any available information regarding confined space hazards and entry operations from the City of Sunnyvale.

4.3.7. Coordinate entry operations with the City of Sunnyvale, when both personnel will be working in or near a confined space.

4.3.8. Inform the City of Sunnyvale of the confined space program that the contractor will follow and of any hazards confronted or created in the confined space, either through debriefing or during the entry operation.

4.4 ENTRY TEAM

All hazards or potential hazards within a confined space will be evaluated by the entry supervisor before an entry is permitted. Only the person designated as the entry supervisor has the authority to authorize an entry permit. A permit-required confined space entry team for routine entries includes the entry supervisor, authorized entrant(s), at least one attendant and standby rescue

entrant if determined in the hazard assessment for the entry and/or coordination with Fire Department (if required). An entry team must be comprised of at least three persons. Before any employee enters a permit-required confined space, written authorization must be obtained from an entry supervisor.

4.4.1 Authorized Entrants

4.4.1.1. Must maintain active communication with the attendant so that the attendant can monitor the mental and physical status of the entrant(s).

4.4.1.2. Must notify the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a hazardous atmosphere or other unsafe condition.

4.4.1.3. Is required to exit as fast and safely as possible from the space if an evacuation order is given by the attendant or entry supervisor or if any prohibited condition arises, or if the alarm is activated.

4.4.1.4. Must adhere to the procedures and precautions indicated on the permit and provided in training.

4.4.1.5. Must know the hazards that may be faced during entry, including information on the mode, signs or symptoms and consequences of the exposure to hazardous atmospheres.

4.4.1.6. Will be trained in First Aid/CPR/AED.

4.4.2 Attendant

4.4.2.1. Primary duty is to monitor space atmosphere and protect the authorized entrant(s). No additional duties will be assigned or permitted which may interfere with the attendant's primary duties.

4.4.2.2. In the event that an entrant is incapacitated by exposure to hazardous atmosphere or engulfment the attendant will perform the non-entry rescue procedure outlined in (Section 5.7) of this document.

4.4.2.3. Will be trained in First Aid/CPR/AED.

4.4.2.4. Must know the hazards that may be faced during entry, including information on the mode, signs or symptoms and consequences of the exposure to hazardous atmospheres.

4.4.2.5. Keeps the entry permit and any other documentation needed (SDS, hot-work permit, etc) and the rescue procedure on-hand at the entry location.

4.4.2.6. Continuously maintains an accurate count of authorized entrants in the permit space.

4.4.2.7. Remains outside the permit space during entry operations until relieved by another attendant.

4.4.2.8. Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space in an emergency.

4.4.2.9. Reads the gas detection meter every 15 minutes and records the values on the permit form.

4.4.2.10. Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the entrants to evacuate the space immediately under any hazardous situations.

4.4.2.11. Prevents unauthorized persons from entering the space.

4.4.3 Entry Supervisor

4.4.3.1. Responsible for the overall permit space entry and must coordinate all entry procedures, tests, permits, equipment and other relevant activities.

4.4.3.2. Knows the hazards that may be faced during the entry, including information on the mode, signs or symptoms and consequences of the exposure.

4.4.3.3. Knows the duties of authorized entrants, attendant, and standby rescue entrant.

4.4.3.4. Carries a 2-way radio with fresh batteries to communicate with Operations Seniors who carry a cellular phone for emergency communication with Public Safety.

4.4.3.5. Prevents unauthorized persons from entering the space.

4.4.3.6. Will be trained in First Aid/CPR/AED.

4.4.3.7. Must summon rescue assistance and other emergency services as soon as it has been determined that entrants may need assistance to escape from permit space hazards.

4.4.3.8. Verifies, by checking the evaluation and permit, that all tests specified by the permit are conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry.

4.4.3.9. Terminates the entry and cancels the permits when conditions dictate.

4.4.3.10. Determines that entry operations remain consistent with the terms of the entry permit and that acceptable entry conditions are maintained.

4.4.3.11. Signs the permit to authorize entry.

4.4.3.12. Provides and reviews SDS's for all materials used in the confined space with entrants.

4.4.3.13. For entry into confined spaces, the entry supervisor must notify Sunnyvale Public Safety Dispatch that a confined space entry is being made at a specific location and for a specified period of time. When entry into

confined spaces at the WPCP, the entry supervisor must notify the Sr. Operator on duty and Sunnyvale Public Safety Dispatch that a confined space entry is being made at a specific location and for a specified period of time.

4.4.3.14. At the conclusion of any confined space operation, the entry supervisor must notify Sunnyvale Public Safety Dispatch /Sr. Operator on duty if at WPCP, that the space has been vacated and secured.

4.4.3.15. Cancels the permit once the job has been completed and submits all completed entry forms and documentation to the Program Administrator for the safety files.

4.4.4 Standby Rescue Entrant

4.4.4.1. Knows the duties of authorized entrants, attendant & entry supervisor.

4.4.4.2. Knows the hazards that may be faced during the entry, including mode, sign or symptoms and consequences of exposure to hazardous atmospheres.

4.4.4.3. Be at the ready for standby rescue entry in the event non-entry rescue retrieval in a hazardous atmosphere is impeded by entanglement of lifeline cable or in the operating lifeline cable system in a permit required confined space entry.

4.4.4.4. Be at the immediate ready and equipped with the appropriate PPE, harness and lifeline attached to enter the space and aid/assist entrant.

4.4.4.5. Be attached to the mechanical hoist retrieval system to protect from falls while entering and exiting and to ensure removal if unable to self-rescue by attendant.

4.4.4.6. Trained in First Aid/CPR/AED.

4.4.4.7. Be at the ready to enter with respiratory protection equipment to correct the problem (e.g. untangle the retrieval line; attach the retrieval line, etc.).

4.4.4.8. The standby rescuer(s) must meet the requirements of Cal/OSHA 5157 (k).

NOTE: If City of Sunnyvale doesn't have an immediate ready Standby Rescue Entrant trained in accordance with Cal/OSHA 5157 (k) for all permit required entries with the potential for a toxic or hazardous atmosphere to develop then a contract Standby Rescue Entrant service team shall be obtained. Sunnyvale's Water Pollution Control Plant has Rescue trained personnel.

5.0 PROCEDURES

5.1 PROHIBITION OF ENTRY

No worker will enter a confined space when the following conditions are present, and all workers will evacuate a confined space if the following conditions develop during entry:

- The oxygen level is less than 19.5% or greater than 23.5%
- The flammable gas concentration is greater than 10% of the Lower Flammable Limit
- The carbon monoxide concentration is greater than 25 ppm
- The hydrogen sulfide concentration is greater than 10 ppm
- Any other toxic in excess of the Permissible Exposure Level (PEL)
- The workers are not trained and authorized as specified in (Section 7) of this document

5.2 PREVENTION OF UNAUTHORIZED ENTRY

5.2.1. Permit Required Confined Spaces shall be identified by posting danger signs or by any other equally effective means, of the existence, and location of the danger posed by the permit space. A sign reading: DANGER: CONFINED SPACE or PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER or KEEP OUT or using other similar language would satisfy the requirement for a sign.

5.2.2. Only authorized personnel are permitted to enter the space. A perimeter with tape, barriers or other means will be established so that a working zone (controlled access zone) is created where only authorized personnel are permitted and this zone is maintained from unauthorized entry by the entry supervisor and attendant.

5.2.3. During an emergency, a safe zone and specific rescue plan procedure will be established for the command post and support personnel, ensuring adequate, distance from the site based on the concentration of any contaminant. The area will be isolated and unauthorized personnel will be denied access.

5.3 PERMIT-REQUIRED CONFINED SPACES

All confined spaces are considered Permit-Required Confined Spaces until the Assessment or Evaluation Procedures demonstrate otherwise. (See Appendix A)

The areas at City of Sunnyvale where conditions requiring a confined space permit may exist include:

- Sewer/ Water pump/lift stations
- wet wells
- manholes
- pools
- Water Pollution Control Plant areas with potential to have a hazardous atmosphere.

Potential hazards that may be associated with these spaces include engulfment, toxic gases; explosive or flammable gases, oxygen deficiency, electrical and mechanical hazards, and may under certain circumstances include heat stress.

Other spaces may be determined to be permit-required after completion of the evaluation check list. The type of work to be performed in the space could introduce hazards to an otherwise safe space. Working with flammable or toxic substances, welding or other hot work, or drifting vapors from outside sources would make a space hazardous or potentially hazardous and therefore require a permit to enter. An entry into a confined space is made whenever any part of the body breaks the plane of the opening of the space.

Pump/Lift Stations & Wet Wells

Wet wells have been evaluated and identified as permit-required confined spaces and dry pits will be evaluated prior to entry to determine the appropriate entry procedures.

Manholes

Sanitary sewer manholes are permit-required confined spaces. All other manholes/vaults will be evaluated prior to entry to determine the appropriate entry procedures.

All manholes, regardless of depth, must have an attendant if an entry is made and must have the evaluation checklist completed and a confined space entry permit signed prior to any entry.

5.4 NON-PERMIT REQUIRED CONFINED SPACE-ALTERNATE ENTRY

5.4.1. A non-permit-required confined space is a space that has been determined to be free from hazardous atmosphere and other hazards of entrapment, engulfment, electrocution, or other hazards that could cause serious physical injury.

5.4.2. Atmosphere testing equipment and a confined space assessment (Appendix A) must be used to make the determination prior to each planned entry.

5.4.2.1. Employees must follow all City of Sunnyvale safety policies and procedures including fall protection, personal protective equipment and lockout tagout-hazardous energy control program, etc.

5.5 ALTERNATE ENTRY/RE-CLASSIFICATION OF SPACE

This procedure may be used to enter a permit space when the only hazard in the permit space is an **actual or potential atmospheric hazard and the hazard can be controlled by continuous ventilation and atmosphere monitoring** and is verified and documented using the evaluation checklist.

All confined spaces are considered **permit-required confined spaces** until physical and atmospheric hazards have been controlled or eliminated. **All confined spaces are considered Permit-Required Confined Spaces until the Assessment or Evaluation Procedures demonstrate otherwise. (See Appendix A)**

5.5.1. All unsafe conditions are eliminated, tested and documented using the evaluation checklist prior to the confined space cover opening and removal.

5.5.2. If isolation of hazards requires entry into the space, then a confined space entry permit is required.

5.5.3. Continuous atmosphere monitoring equipment and mechanical ventilation must be used to ensure that the atmosphere remains healthful for the duration of the work in the space.

5.5.4. Employees must follow all City of Sunnyvale safety policies and procedures including fall protection, personal protective equipment and lockout tagout-hazardous energy control program, etc.

5.5.5. All monitoring, inspection data and certification information are to be made available to each employee entering the space.

5.5.6. The authorized entrant completes the initial air monitoring test of the cover and interior of the confined space for oxygen deficiency, flammable vapors, carbon monoxide, and hydrogen sulfide using a pre-use gas bumped tested and current in calibration direct read air monitoring instrument. The entrant documents all on the confined space evaluation checklist.

5.5.7. The entrance leading edge is guarded with a temporary railing or other type of barrier to prevent falls through the opening and to protect entrants in the space.

5.5.8. If initial monitoring alarm occurs, re-evaluate your ventilation set up and retest accordingly.

5.5.9. If ventilation renders the space to acceptable entry levels then continuous forced air ventilation is to be used ensuring the air supply is from a clean air source and will not create any additional hazards.

5.5.10. The air supply is to be directed to employees' work area.

5.5.11. The entrant determines that all conditions evaluated and documented on the confined space evaluation checklist have been met for safe entry. The entrant certifies on the evaluation checklist that all hazards have been eliminated prior to entry. (Note: If required to enter space to eliminate hazards then a permit-required entry must be completed).

5.5.12. The entrant monitors conditions in the space continuously. If conditions become unsafe, and the gas monitor alarms, the entrant evacuates the space promptly and safely.

5.5.13. If the job task has not been completed due to unsafe conditions then it will be required that the entrant try to determine why the gas monitor alarmed and work to control the hazard.

NOTE: If a hazardous atmosphere develops in the space, or other hazards arise, alternate procedures can no longer be used and the space must be reclassified as a fully permitted space.

5.5.13. If the hazard condition still exist and the work task has not been completed, the entrant must determine if a permit required entry team will be necessary or, for public safety, the Local Emergency Service (9-1-1).should be notified.

5.5.14. The completed evaluation checklist is kept by the entrant during the duration of the job.

5.5.15. When the job is completed, the entrant submits the evaluation checklist and all other documentation to the Program Administrator for the safety files.

5.6 ENTRY OF A PERMIT-REQUIRED SPACE

5.6.1 Confined Space Entry Permit

Confined space entry permit (Appendix E) are issued for a specific location, a specific work crew, and for a specified period of time. The entry permit is a written authorization of the location and type of work to be done. It also authorizes the personnel assigned to the job, verifies that potential hazards have been evaluated using the evaluation checklist and the entry permit, documents that all potential hazards identified have either been controlled or eliminated, and that proper safety precautions have been taken, and that it is safe for workers to enter to perform assigned work tasks.

Completion of a Confined Space Entry Permit (Appendix C) is mandatory before the entry supervisor gives approval to enter a permit-required confined space. These permits must be kept at the job site for the duration of the job.

Completion of the Confined Space Permit form shall document the following:

i. The surrounding area is surveyed to assess hazards such as drifting vapors, unsecured equipment, water pressure or flow, and unauthorized personnel.

ii. The gas detector is current in calibration and zeroed and received the logged daily pre-use/pre-entry gas bump tests prior to zeroing out to ensure all sensors are operating.

iii. The atmosphere of the confined space is surveyed with the gas detector to determine if there is oxygen deficiency or excess levels of flammable vapor, carbon monoxide, hydrogen sulfide or other toxics and logged on the Entry Permit.

iv. Ventilation is provided to the space by making additional openings to the atmosphere or placement of portable ventilation blowers and ducts to augment natural air circulation. After a suitable ventilation period, the atmosphere testing is repeated.

v. Entry may not begin until testing demonstrates that the hazardous atmosphere is eliminated and all required Lockout/Tagout procedures have been completed.

vi. The entry supervisor has reviewed the conditions described in the evaluation checklist and permit, given assignments to the attendant and authorized entrant(s), and authorized the entry team to proceed with entry operations.

vii. Upon completion of the entry procedures, the entry supervisor submits all completed entry forms and documentation to the Program Administrator for the safety files.

viii. The duration of retention of confined space records is at the discretion of the Program Administrator but no less than one year as the regulations require. These records will be made available to authorized personnel upon request.

5.6.2 Pre-Entry Procedures

5.6.2.1. Determine (by entry supervisor or other competent trained person) what hazards or potential hazards are within the confined space.

5.6.2.2. Check that all safety equipment is available and in good safe working condition and all pre-use inspections have been completed in accordance with manufacturer specification and instruction.

5.6.2.3. Check that all atmospheric monitoring equipment has had the pre-day use documented gas bump test and is current in calibration in accordance with manufacturer specifications and instructions and documented on forms.

5.6.2.4. Without entering the space complete the evaluation checklist.

5.6.2.5. Check that ventilation system(s) are operating properly.

5.6.2.6. Set up controlled access zone of project work area and ensure only authorized personnel are allowed in it.

5.6.2.7. Set up barriers or other fall protection around entrance to prevent accidental falls or falling objects into the space.

5.6.2.8. Check for physical hazards such as poor footing, structures and equipment that hinder movement, and extreme temperatures or humidity that could affect worker safety.

5.6.2.9. Secure and lock out tag out or lock out block out (LOTO/LOBO) all energy sources (electrical, mechanical, hydraulic, pneumatic, and chemical) that are potentially hazardous to entrants.

Follow all City of Sunnyvale Lockout Tagout- Hazardous Energy Control Programs and Procedures.

5.6.2.10. Disconnect, blind, or block lines to prevent development of hazardous conditions.

5.6.2.11. Use continuous forced air ventilation if hazardous conditions exists or could potentially develop. Ensure that there is no recirculation of exhausted air from blowers or the introduction of contaminants from the outside sources, such as traffic exhaust, vapors, and toxic substances from other areas. Place blower(s) intake at least 10 feet away from opening of space.

5.6.2.12. Entry supervisor or competent trained person verify by review of and evaluation checklist, entry permit and authorizes entry by signing the permit ONLY if the space is safe to enter and all preparatory steps required for safe entry have been completed.

5.6.2.13. Ensure rescue plan/procedure is in place and specific to the space and location.

5.6.3 Entry Procedures

When atmospheric hazards cannot be controlled by continuous forced air ventilation and entry is required to eliminate physical hazards, permit-required entry procedures must be followed.

All hot work (cutting, grinding & welding) shall be permit required entries only and shall follow City of Sunnyvale Hot Work program and permit procedures in conjunction with confined space entry procedures.

5.6.3.1. Only authorized, competent and qualified employees who have been trained on the City of Sunnyvale confined space entry and work procedures are allowed to work in or around confined spaces.

5.6.3.2. The entry supervisor contacts Sunnyvale Public Safety Dispatch /Sr. Operator on duty if at WPCP, to inform them of the entry location and time.

5.6.3.3. As needed or required, on site staff (Sr. Operator)will assist with directing Emergency Response Personnel (Fire Department) through access gates, and shall direct emergency response personnel to the entry location.

5.6.3.4. The entry attendant shall be at the exterior of the entrance to the confined space at all times and shall be prepared to initiate non-entry rescue retrieval in the event of emergency evacuation, injury or entrapment of an entrant.

5.6.3.5. The Standby Rescue Entrant shall provide immediate victim assistance (other than non-entry rescue retrieval using entry equipment devices) from confined space if needed and entry may not start until the Fire Department emergency response assistance coordination is in place and confirmed.

5.6.3.6. The attendant shall keep the permit, and a copy of this procedure and the rescue procedures at the entry site for ready reference.

5.6.3.7. The attendant must maintain continuous communication with the entrant(s).

5.6.3.8. Every entrant must wear a safety harness. The harness must be inspected according to the manufacturer specifications prior to each use and designed for connection to a lifeline and hoist so that an unconscious entrant would be suspended in the upright position during non-entry rescue.

5.6.3.9. The harness of each entrant will be attached to a lifeline. The first entrant is hooked to the hoist cable, all subsequent entrants will have lifelines attached to their harness and secured outside the confined space. When the entry must be through a top opening, the line must be secured to a hoist that is located outside the entry opening. The hoist must be mounted securely and be rated and maintained to lift at least 500 pounds.

5.6.3.10. The attendant will monitor entrance gas detector and record acceptable entry conditions are being maintained every 15 minutes on the monitoring log.

5.6.3.11. All entrant(s) will have personal current in calibration gas detectors on when working in the space. The detector must be operating continuously and set to alarm at the warning levels listed in section 5.1.

5.6.3.12. The attendant will also record every 15 minutes the entrant monitor readings of acceptable entry conditions on the monitoring log.

5.6.3.13. The attendant maintains communication with the entrant(s). If there is no response from an entrant, or the entrant becomes entrapped or disabled the entry supervisor/attendant will initiate non-entry rescue retrieval and call and initiate the Fire Department emergency response assistance procedures.

5.6.4 Post-Entry Procedures

Entry Supervisor:

5.6.4.1. Ensures entrants/tools/safety equipment is out of the confined space.

5.6.4.2. Notifies Sunnyvale Public Safety Dispatch /Sr. Operator on duty if at WPCP, that entry is complete.

5.6.4.3. Cancels the permit by entering date and time of cancellation with signature.

5.6.4.4. In comments section or reverse side of permit, makes note of any problems the entry team encountered during the entry operations.

5.6.4.5. Submits cancelled entry permit to the Program Administrator for the safety files.

5.6.4.6. Notifies the Program Administrator immediately if any equipment, safety gear or tools need to be repaired or replaced.

5.7 RESCUE PROCEDURES

NOTE: Emergency Rescue must be coordinated prior to any entry into a confined space and documented on the project work evaluation checklist and entry permit.

5.7.1 Rescue and Emergency Services

5.7.1.1. Members of a permit space entry team must be knowledgeable of the hazards or potential hazards, able to recognize the signs/symptoms of exposure, be trained in the selection and use of personal protective equipment, and be certified in first-aid/CPR/AED. It is City of Sunnyvale's policy prior to each entry; the team will plan and prepare for self/non-entry rescue.

5.7.1.2. Rescue services other than non-entry rescue will be performed by the , WPCP Confined Space Rescue Team, City of Sunnyvale Standby Rescue Entrant or contracted company who must be immediately available in the event an entrant is overcome by a toxic hazardous atmosphere during entry work.

5.7.1.3. All personnel will be able to inform the City of Sunnyvale Standby Rescue Entrant of the hazards they may encounter when required perform rescue at the entry site.

5.7.1.4. Non-entry rescue shall be performed by utilizing the retrieval system in permit space entries where the retrieval system has been used for entry. Retrieval systems will comply with this program.

5.7.1.5. Standby Rescue Entrant must be trained in First Aid/CPR, Respiratory Protection(SCBA, SAR or other supplied air system) and in accordance with the minimum qualifications required by 8 CCR 5157(k)(1) .

5.7.2 Levels of Rescue for Routine Entry

5.7.2.1. Self-Rescue

Entrants immediately leave the confined space:

- When an alarm sounds
- At the first sign of any exposure symptoms.
- When ordered to evacuate by attendant or entry supervisor.

5.7.2.2. Non-Entry Rescue

Entrants cannot immediately evacuate (self rescue) the space at the first sign of trouble, the attendant shall initiate non-entry rescue by retrieving the entrant using the rescue retrieval hoist/lifeline system equipment.

The attendant must not enter the space.

Retrieval systems must be used in vertical permit spaces more than five feet deep.

5.7.2.3. Standby Rescue Entrant

The standby rescue entrant will be staged and at the immediate ready to perform confined space rescue should any of the following conditions exist:

- Atmospheric hazards cannot be eliminated or fully controlled through LOTO/LOBO or site specific ventilation from the PRCS or,
- If authorized entrant(s) must disconnect from their non-entry rescue retrieval systems, or
- If the authorized entrant(s) are out of sight and/or communication during the entry, or
- If the space configuration is convoluted and will inhibit the extrication of the entrant using the not-entry rescue retrieval system.

The standby rescue entrant must meet the following minimum qualifications and the training shall establish employee proficiency in the duties required:

i. Have current training including an understanding of the duties of an Authorized Entrant, Attendant and Entry Supervisor and properly trained in the regulatory requirements and written confined space entry program.

ii. Have current training in the proper use of PPE and Confined Space rescue equipment.

iii. Have current Respiratory Protection training and medically cleared and FIT tested for its use.

iv. Be current in certification to perform First Aid/CPR/AED.

v. Have documented experience/proficiency confined space rescue at that location within the past 12 months.

vi. Understand how to write a rescue pre-plan for each specific confined space located onsite.

vii. Conduct pre-entry briefing with all responsible parties (Entry Team).

viii. Be able to perform atmospheric air monitoring and pre-use bump test prior to and during the course of the rescue entry.

Should the employer choose to contract out a rescue team to perform confined space rescue, in addition to the above qualifications, the employer must ensure the following equipment is available:

i. Host employer to provide all ventilation and lighting equipment. Rescue ventilation and lighting will be provided by contractor.

ii. Host employer is to inform the contracted rescue service of the known hazards of the space prior to arrival at the host employer's facility.

iii. Provide contracted rescue service with all MSDS' of materials used and/or may be present in the confined space.

iv. Provide contracted rescue service with access to all permit spaces from which rescue may be necessary so the rescue service can develop appropriate rescue plans and practice rescue operations.

v. Host employer shall grant to contractor the authorization to evacuate all employees in the confined space when deemed necessary.

vi. Contractor will provide a written rescue pre-plan, conduct per-entry safety briefing with all responsible parties, and perform back-up air monitoring prior to, and during the course of the entry.

5.7.2.4.Fire Department Assisted Technical Entry Rescue

NOTE: Additional Emergency Entry Rescue operations shall be done by the local Fire Department, the WPCP Confined Space Rescue Team in coordination with the local Fire Department.

- Authorized Entrant Rescuers - Sunnyvale Public Safety (408) 730-7180 and/or 911
- At no time is an employee allowed to enter the confined space to assist in rescue unless they hold a current Technical Rescue Training Certification.
- Rescuers must meet all the training requirements and have the necessary knowledge and skills to be authorized to perform the duties of a rescuer in Confined Spaces.
- Only those employees who have been authorized by the City of Sunnyvale & Fire Department are permitted to perform the duties of a rescuer on a confined space entry team.
- Rescuers are to assume that a IDLH, hazardous atmosphere exists if an entrant has slurred speech, appears dizzy, disorientated, confused, unconscious, or displays any unusual behavior, or if communication with entrant is lost.
- A supplied air breathing apparatus must be worn for entry rescues.
- The local Fire Department shall be called to rescue entrants who have had traumatic injuries.

6.0 EQUIPMENT

City of Sunnyvale maintains all required Confined Space Entry Equipment and the equipment inventory can be found in **Appendix G**. All employees shall complete a pre-use inspection as outlined by the manufacturer's instruction and specification for each piece of equipment and as identified in their respective equipment user manuals.

An automated external defibrillator (AED) is required on-site equipment when City of Sunnyvale employees are engaged in confined space entries.

Air monitoring equipment shall be bump tested prior to use, authorized entrants are required to wear personal air monitors for self-monitoring.

The attendant shall monitor space atmosphere with a separate air monitor and pump system for official atmospheric readings at all access/egress location(s).

If the use of respiratory protective equipment is required there shall be at least one person trained in First Aid/CPR and shall be immediately available and also an effective means of communication shall be provided and used whenever employees inside a confined space are out of sight of the standby rescue employee(s).

All affected employees shall be trained in the use of such communication system and the system tested before each use to confirm its effective operation.

7.0 TRAINING

Training will be provided by a qualified trainer.

All City of Sunnyvale employees who will participate in confined space (general industry/routine) entry, alternant or permit-required entry will receive 8 hours of annual training to qualify them to perform work as an ***authorized entrant, attendant and entry supervisor.***

Standby rescue entrants shall be trained in accordance with the requirements as identified in 8 CCR 5157(k) and perform annually a simulated proficiency entry rescue with immediate follow up on entry policy, procedures, equipment or issues that arose during the annual proficiency entry. Training for the Standby Rescue Entrant will be provided in conjunction with the 8-hour entrant training.

Training will be provided in the following circumstances to ensure safety and compliance with the regulations:

i. Before the employee are first assigned duties under the program;

ii. Whenever there is a change in the assigned duties;

iii. Whenever a new or revised procedure is introduced;

iv. Whenever there is a change in the procedures that presents a hazard for which an employee has not previously been trained;

v. Whenever a review of the program reveals that procedures are not being strictly adhered to;

vi. Whenever a review of the program reveals inadequacies in the program; and

vii. Whenever procedures are changed.

viii. Employees whose work requires the use of any of the air monitors/detectors shall be trained in accordance with manufacturer's instructions and specifications prior to being assigned its use and as necessary thereafter to ensure knowledge/skills/ability in its proper use when needed.

Training shall include instruction on each procedure, a demonstration of the procedure and an opportunity for each employee to demonstrate proficiency confined space non-entry rescue and/or entry rescue annually for each assigned responsibility and procedure.

Employees will be trained in CPR, AED, Automated External Defibrillation and First Aid.

8.0 RECORDKEEPING

The Program Administrator shall maintain:

i. Training records.

ii. Written training Certification Record containing the name of the employee trained the name of the person who conducted the training, and the date of the training for confined space.

iii. All assessments, evaluation checklists, entry permits and other associated documentation in the safety file and will review annually in conjunction with the written program.

Appendices

DU-ALL SAFETY

Confined Space Assessment Flow Chart

Definition:

Any space that is large enough and configured such that an employee can bodily enter and performed work.
Has limited openings for entry & exit.
Is not designed for continuous employee occupancy

1. **Does the workplace contain PRCS (Permit Required Confined Space) as defined by 5157 (b)?**
   The space meets the Confined Space definition and one or more of the following:
   1. Has a hazardous atmosphere – or has the potential for a hazardous atmosphere – including too little or too much oxygen, and/or the presence of toxic or explosive gases or vapors (such as hydrogen sulfide or methane.
   2. Has a material that can – or potentially will – engulf an employee, such as grain, sand, water or sludge.
   3. Has an internal configuration (such as floors that slope downwards) that can – or potentially will – trap or asphyxiate employees.
   4. Has any other recognized serious safety or health hazard, such as machinery with moving parts, sources of electrical shocks, steam (burn hazard), or liquids (drowning and fire hazards).

   NO → Consult other applicable Cal/OSHA standard i.e. Construction, agriculture, marine terminals, or telecommunications consult Title 8, Section 5158.

   YES ↓

2. **Inform employees as required by 5157 (c) (2) – i.e. Post "Danger Signs" or "Permit Required Confined Space".** → DANGER — CONFINED SPACE PERMIT REQUIRED

3. **Will permit space be entered?**
   NO → Prevent employee entry as required by 5157 (c) (3). Do task from outside of space.
   YES ↓

4. **Will contractor enter?**
   YES → Task will be done by contractors' employees. Inform contractor as required by 5157 (c) (8) (A) (B) & (C). Contractor obtains information required by 5157 (c) (9) (A) (B) & (C). (See code references on next page)
   NO ↓

5. **Will host employees enter to perform entry tasks?**
   NO → Prevent unauthorized entry.
   YES → Will both contractors and host employees enter the space?
   NO → 6. **Does space have known or potential hazards?**
   YES → Coordinate entry operations as required by 5157 (c) (8) (D) & (d) (11). Prevent unauthorized entry.

6. **Does space have known or potential hazards?**
   NO → Not a PRCS. 5157 does not apply. Consult other Cal/OSHA standards.
   YES → 7. **Can the hazards be eliminated?**
   NO → 8. **Can the space be maintained in a condition safe to enter by <u>continuous forced air ventilation only</u>?**
   YES → Employer may choose to <u>reclassify space to non-permit required confined</u> space using 5157 (c) (7).

8. **Can the space be maintained in a condition safe to enter by <u>continuous forced air ventilation only</u>?**
   NO → Prepare for entry via Permit procedures.
   YES → Space may be entered under 5157 (c) (5).

Verify acceptable entry conditions (test results recorded, space isolated if needed, stand by rescuers/means to summon available, entrants properly equipped, etc… **(CONTINUE TO PAGE 2 CHECKLIST)**
NO → Permit not valid until conditions meet permit specifications.
YES ↓

Permit issued by authorizing signature. Acceptable entry conditions maintained throughout entry.
NO → Emergency exist (prohibited condition).
Entrants evacuated, entry is aborted.
(Call rescuers if needed) Permit is Void.
Re-evaluate program to correct/prevent prohibited condition.
Occurrence of emergency (usually) is proof of deficient program.
No re-entry until program and permit is amended.
YES ↓

Entry task completed. Permit returned, canceled & filed. Audit permit program and permit based on evaluation of entry by entrants, attendants, testers and preparers, etc.

CONFINED SPACE HAZARD ASSESSMENT

1. Confined Space Hazard Assessment for: _____
2. Confined Space Location/Name: _____
3. Assessor's Name: _____ 4. Date Assessment: _____

Confined Space must meet all the below criteria		**Permit Required Confined Space must be a confined space and meet any one of the below criteria**	
☐	5. Is large enough or so configured that an employee can bodily enter and perform work, **AND**	☐	10 Contains or has a potential to contain a hazardous atmosphere... OR
☐	6. Has limited or restricted means for entry or exit, **AND**	☐	11. Contains a material that has the potential for engulfing an entrant... OR
☐	7. Is not designed for continuous employee occupancy.	☐	12. As an internal configuration such that an entrant could be trapped or asphyxiated by inwardly covering walls or by a floor that slopes downward and tapers to a smaller cross-section... OR
☐	8. This is **NOT** a Permit-Required Confined Space	☐	13. Contains any other recognized serious safety or health hazard

☐ **9. THIS IS NOT DEFINED AS A CONFINED SPACE**

Authorized Entry Points

14. Entry Points ☐ **Top** (ventilation only) ☐ **Side** (entry point) ☐ **Bottom**

Hazards	Source/Type (enter description or n/a)	Quantity and/or Quality	Severity (Rate 1 to 5)	Hazard Abatement Method
15. Explosive Atmosphere		_____ LEL		
16. Combustible Material				
17. Electrical Circuits				
18. Toxic Gases		_____ PEL		
19. Toxic Materials (solid)				
20. Thermal Hazards		_____ °F		
21. Machinery		29. Photograph - applicable for space description		
22. Gravity Hazard				
23. Biological Hazard				
24. Slip / Fall Hazard				
25. Engulfment Hazard				
26. Entrapment Hazard				
27. Other				
28. Other				

30. Personal Protective Equipment Recommended

☐ Tripod/Davit Arm	☐ Retrieval System	☐ Winch/Lifeline	☐ Full-body Harness	☐ Evaluation/Permit
☐ Gloves/Hardhat	☐ Hearing Protection	☐ 4-6 Gas Monitor	☐ LOTO Procedures	☐ Leading edge fall protection
☐ Body Protection	☐ Safety Glasses/Goggles	☐ SRL	☐ LOBO Procedures	☐ Standby Rescue

☐ Air Supplied Respiratory	☐ Air Purifying Respirator	Acid Gas	OV	DMF	N95	R95	P95
☐ SCBA ☐ Air Line	☐ Powered Air Purifying Respirator						

31. Ventilation Requirements

☐ Space Volume in Cubic Feet:

☐ **Natural Circulation** - no atmospheric hazards in the space, additional ventilation may be required for worker comfort, hot work, grinding or other operations that would produce airborne fumes, mist or dust that can be controlled. Entry Supervisor must assess additional ventilation requirements based on tasks to be performed in the space prior to time of entry and during entry.

☐ **Mechanical Ventilation** - required for venting hazardous atmospheric contaminants

Supply		Exhaust		Local	
Volume	_____cu/ft/m	Volume	_____cu/ft/m	Volume	_____cu/ft/m
Point		Point		Point	

CONFINED SPACE HAZARD ASSESSMENT

Introduction:

The following instructions should be used when completing the Confined Space Hazard Assessment form. Each section (as numbers on the Confined Space Hazard Assessment form) are described below to assist in the completion of the form.

Section and descriptions:

1. **Confined Space Hazard Assessment for:**
   a. Enter the name of the entity the Confined Space Hazard Assessment is being completed for.
2. **Confined Space Location/Name:**
   a. Enter the location of the confined space and a descriptive name. Example: CS-041; Confined Space #41; City Hall Fountain Pump Vault; etc.
3. **Assessor's Name:**
   a. List the name of the person completing the Confined Space Hazard Assessment form.
4. **Date Assessment Last Modified:**
   a. Enter the date the Confined Space Hazard Assessment form was last completed.

The next sections define the status of the confined space. The status will either be a Non-Permit Required Confined Space, a Permit-Required Confined Space, or NOT a Confined Space. The definitions and descriptors is sections 5 through 13 will determine this status.

5. **Is large enough or so configured that an employee can bodily enter and perform work, AND**
   a. Place a check mark in the check box if a worker can bodily enter the confined space and perform the assigned work.
6. **Has limited or restricted means for entry or exit, AND**
   a. Place a check mark in the check box if it is hard to get into and out of the confined space being assessed. Example: Do you need to climb a ladder; be lowered into; raised up to; climb through a very small entryway; install a straight or extension ladder to enter the space. If the entryway is a 7'0" by 3'0" standard door, this check box cannot be checked and the space is not a confined space.
7. **Is not designed for continuous employee occupancy.**
   a. Place a check mark in the check box if employees do not occupy the space on a regular basis. Example: There is no desk, chair, or telephone in the space.
8. **This is NOT a Permit-Required Confined Space**
   a. Place a check mark in the check box if all of the check box(s), 5 through 7 are checked. If all of these check boxes are checked, the space may be a confined space but may not be a Permit-Required Confined Space.
9. **THIS IS NOT DEFINED AS A CONFINED SPACE**
   a. Place a check mark in the check box if one or more of the check boxes 5 through 7 are not checked. If one or more of these check boxes are not checked this space is not a Confined Space.

If the last section determined the space is a Confined Space (or Non-Permit Required Confined Space), the next section will determine if the Confined Space is a Permit-Required Confined Space. If any one of the check boxes in sections 10 through 13 are checked, the Confined Space will then be defined as a Permit-Required Confined Space.

10. **Contains or has a potential to contain a hazardous atmosphere... OR**
    a. A hazardous Atmosphere is defined as a space that has or has the potential to contain the following: Less than 19.5% oxygen by volume, greater than 23.5% oxygen by volume, Lower Explosive Level (LEL) greater than 10% of the LEL of the sampled atmosphere, any toxic vapors or mists above the allowable limit (PEL or TLV).
11. **Contains a material that has the potential for engulfing an entrant... OR**
    a. The space contains a material that could engulf the entrant. Example: Water, dirt, dust, grain,
12. **As an internal configuration such that an entrant could be trapped or asphyxiated by inwardly covering walls or by a floor that slopes downward and tapers to a smaller cross-section... OR**

a. The space with an internal configuration that could trap an entrant or asphyxiate the entrant by an inwardly converging wall or a narrow cross-section the could trap the entrant from continuing further forward or being able to back out of the space. Example: Grain silos, bag houses, water processing plants, water distribution systems, interior of a boiler and steam piping.

13. **Contains any other recognized serious safety or health hazard**
    a. This section would include any other recognized or potential serious safety or health hazard that could affect the entrant. Example: (include but are not limited to:) Electrical, mechanical, hydraulic, pneumatic, gravity, static pressure, residual pressure, energy under tension, hazards taken into the space to perform work (welding, cutting, brazing, soldering, hot work sweating, grinding), pressure operated tools, adhesives, primers, caulking, painting, epoxy, anything that could compromise the health and safety of the entrant.

14. **Entry Points**
    a. Indicate if entry into the Permit-Required Confined Space is through the Top, a side entry, or from the bottom of the space.

15. **Explosive Atmosphere**
    a. Indicate whether the Permit-Required Confined Space has or has the potential to contain an explosive atmosphere. Example: Natural gas is piped or plumbed to the space to be entered such as in a boiler. Some water treatment processes may have chlorine or ozone plumbed into the system and may affect the entrant upon entry or while working in the space. These connections must be locked out and tagged out with locks and tags and tested to make sure exposure will not occur before the entrant enters the Permit-Required Confined Space. Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

16. **Combustible Material**
    a. All combustible materials must be removed from the Permit-Required Confined Space or controlled to prevent a fire. Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

17. **Electrical Circuits**
    a. Indicate if there is or there is a potential for the entrant to come in contact with electrical energy while inside the Permit-Required Confined Space. Example: Equipment in the Permit-Required Confined Space is connected to electrical energy, the entrant will be taking electrical equipment and/or tools into the Permit-Required Confined Space to perform work, etc. Electrical equipment connections must be locked out and tagged out with locks and tags and tested to make sure exposure will not occur before the entrant enters the Permit-Required Confined Space. Electrical equipment and/or tools the entrant takes into the space must be connected through a ground fault interrupter (GFI). Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

18. **Toxic Gases**
    a. Indicate the toxic gases will be encountered by the entrant. Also, indicate the toxic gases the entrant will be taking into the Permit-Required Confined Space. Example: toxic gases, vapors, mists created by gases, primers, paints, epoxy, caulking, welding gases, etc. Toxic gas connections must be locked out and tagged out with locks and tags and tested to make sure exposure will not occur before the entrant enters the Permit-Required Confined Space. Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

19. **Toxic Materials (solid)**
    a. Indicate toxic materials the entrant will encounter within the Permit-Required Confined Space. Example: Sanitary sludge (bloodborne pathogens), heavy metals, exotic metals (that may be welded, cut, brazed, soldered), etc. Also indicate the Source/Type (enter description or n/a),

Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

20. **Thermal Hazards**
    a. Indicate whether the Permit-Required Confined Space has the potential to have a hot (greater than 70°F) or cold (uncomfortable for the entrant and/or the attendant on the outside of the space) temperature environment.

21. **Machinery**
    a. Indicate mechanical hazards that the entrant will be exposed to while in the Permit-Required Confined Space. Example: Electrical connections and circuits, unguarded rotating shafts, unguarded pulleys and belts, reciprocating shafts, hydraulic rams, rotating blades, augers, etc. Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

22. **Gravity Hazard**
    a. Indicate gravity hazards that will be encountered by the entrant while in the Permit-Required Confined Space. Example: Lifted objects, lowered objects, blocked equipment. Equipment that poses a gravity (falling) hazard must be locked out and tagged out with locks and tags and tested to make sure exposure will not occur before the entrant enters the Permit-Required Confined Space. Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

23. **Biological Hazard**
    a. Indicate biological hazards that will be encountered while the entrant is in the Permit-Required Confined Space. Example: Bloodborne pathogens (sanitary systems). Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

24. **Slip / Fall Hazard**
    a. Indicate the slip, trip, and fall hazards the entrant will encounter while in the Permit-Required Confined Space. Example: Fall to a lower level, fall from one level to another, no ladder available and must be lowered by a winch and cable, falling objects, slippery floor conditions, etc.

25. **Engulfment Hazard**
    a. Indicate the engulfment hazard the entrant will encounter while in the Permit-Required Confined Space. Example: Water, dust, dirt, grain, sawdust, etc. External or internal feed lines that pose an engulfment hazard must be locked out and tagged out with locks and tags and tested to make sure exposure to the entrant will not occur. Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

26. **Entrapment Hazard**
    a. Indicate the entrapment hazard the entrant will encounter while in the Permit-Required Confined Space. Example: Sloping floor, inwardly converging walls, an exit route that requires special knowledge or equipment to enter and exit the Permit-Required Confined Space. Also indicate the Source/Type (enter description or n/a), Quantity and/or Quality, Severity (Rate 1 to 5), and Hazard Abatement Method (Lockout/Blockout/Tagout, disconnection, off set connections, etc.).

27. **Other**
    a. Indicate in the Other section any safety and health hazards the entrant will encounter while in the Permit-Required Confined Space that has not been covered by other sections.

28. **Other**
    a. Indicate in the Other section any safety and health hazards the entrant will encounter while in the Permit-Required Confined Space that has not been covered by other sections.

29. **Photograph - applicable for space description**
    a. Use this space to place a photograph of the space or the location of the Permit-Required Confined Space.

30. **Personal Protective Equipment Recommended**
    a. Using the check boxes in this section, check the appropriate boxes indicating the Personal Protective Equipment that must be used by the entrant while in the Permit-Required Confined Space. Examples: Tripod, retrieval system, winch, full-body harness, gloves (compatible with the materials the entrant is using), hearing protection, hardhat, lifeline, body protection (Tyvek suit, coveralls, encapsulating suit), safety glasses, goggles, faceshield, 4-gas monitor, Air supplying respirator, air purifying respiratory (APR), self-contained breathing apparatus (SCBA), air-line respirator, powered air purifying respirator (PAPR), etc.

31. **Ventilation Requirements**
    a. Indicate the size of the Permit-Required Confined Space in cubic feet (if applicable), Natural Circulation/Ventilation (no atmospheric hazards in the space, additional ventilation may be required for worker comfort, hot work, grinding or other operations that would produce airborne fumes, mist or dust that can be controlled. Entry Supervisor must assess additional ventilation requirements based on tasks to be performed in the space prior to time of entry and during entry.), Mechanical Ventilation (required for venting hazardous atmospheric contaminants. Indicate the Supply, Exhaust and Location.).

DU-ALL SAFETY

Confined Space Checklist

Work Location:	Date and Time Issued:	Date and Time Expires:
Checklist Completed By: Approved By:	Purpose of Entry or Equipment to be Worked on:	

1. Minimum Conditions for Entry

If conditions are <u>not</u> met, entry is prohibited. If occupied, the space must be immediately evacuated

Oxygen	Minimum 19.5% and Maximum 23.5%	Flammable dust	Must not reduce visibility to <5'
Flammable gases	No greater than 10% of LFL	Engulfment hazards	No engulfment hazard may be present
Hydrogen sulfide (H2S)	No greater than 10 ppm	Hazardous flows	Must be secured and locked/tagged out
Carbon monoxide (CO)	No greater than 25 ppm	Hazardous energies	Must be secured and locked/tagged out
Other toxic substances	No greater than PEL for substance	External hazards	External hazards must be controlled

2. Non-Permit Required Confined Space Checklist

Potential Hazards	Yes, this is a potential hazard that cannot be eliminated, controlled or secured. Why?	No, this potential hazard has been eliminated, lines been blinded, disconnected, or block/bleed, LO/TO, controlled or secured and if applicable monitoring is being performed. How?
Atmospheric – (i.e. drifting vapors from tanks, piping, or sewers, fuels, solvents, chemical residue, lack of oxygen)		
Mechanical – (i.e. rotating equipment, pulleys, missing guards)		
Electrical – (i.e. energized electrical cables, exposed electrical wiring)		
Thermal – (i.e. extreme hot or cold)		
Noise – (i.e. excessive noise level which could interfere with communication with an attendant)		
Vibration – (i.e. heavy equipment activity near confined space entry and work area)		
Fire or Explosion – (i.e. welding, cutting, brazing, flammable/combustible substances)		
Engulfment/Entrapment – (i.e. pumps, pipes bring in chemicals, materials can trap, engulf, or drown entrant, converging walls, slope or tapered floors to small cross		
Other – (i.e. vision obscured by <5', poor illumination, slip/fall hazard, <u>entrant or rescue line can get stuck/trapped during emergency retrieval</u>, lines under pressure, poor natural ventilation, entry into a vertical space >5', substances with acute hazards, hydraulic, pneumatic, detached from life-line)		

If any of the initial identified potential hazards are active hazards as indicated by a "YES" answer above, then this space shall be reclassified as a "PERMIT REQUIRED CONFINED SPACE". A NON-PERMIT required confined space might also require reclassification based on the type of work to be performed in the space, for example welding.

If an atmospheric hazard is indicated as a potential hazard in section 2 above, a direct reading gas monitor shall be used to check the atmosphere and the result shall be recorded and listed on section 3. If conditions are not acceptable the space shall be reclassified as a "PERMIT REQUIRED CONFINED SPACE".

3. Initial Atmospheric Hazard Evaluation Monitoring
Collect and document pre-entry readings in the specified order when potential atmospheric hazard exists:

Are you knowledgeable in the operation of the gas detector to be used? Y/N If "NO" – review manufacturer manual prior use.	Instrument Name/Serial Number: Enter last calibration date: Gas bump test date: Logged: Y/N	Tester Name: Signature: Date: Time:

Acceptable Conditions	Test prior lifting/opening cover and prior entry	At surface after cover is removed	3 feet down from the surface	Between the surface & the bottom	3 feet up from the bottom	Repeat all tests after ventilation
>19.5% & <23.5% O_2 (Oxygen)	%O_2	%O_2	%O_2	%O_2	%O_2	%O_2
<10% LFL (Explosive)	%LFL	%LFL	%LFL	%LFL	%LFL	%LFL
<25 ppm CO (Toxic)	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO
<10 ppm H_2S (Toxic)	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S

Consult MSDS for TWA and Short – Term Exposure Work Limits.
Test time samples based on gas monitor recommendations.

Is a Hot Work Permit needed? Y/N, if NO proceed to do continuous atmospheric hazard evaluation monitoring item 4, complete item 5, item 6, set-up non-entry rescue equipment, review rescue/emergency procedures, verify employee confined space training, PPE, means for communication with entrant and post this checklist at the jobsite.
If PRCS is required – then complete items 1, 2, 3, 4, & Confined Space Entry Permit.

4. Continuous Atmospheric Hazard Evaluation Monitoring – record every 15 minutes

Acceptable Conditions	Time:	Time:	Time:	Time:	Time:	Time:
>19.5% & <23.5% O_2 (Oxygen)	%O_2	%O_2	%O_2	%O_2	%O_2	%O_2
<10% LFL (Explosive)	%LFL	%LFL	%LFL	%LFL	%LFL	%LFL
<25 ppm CO (Toxic)	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO
<10 ppm H_2S (Toxic)	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S

5. Emergency Phone Numbers

Local Fire Department: 911 or Direct Number_____ (state specific type of emergency)
Contact Name: _____ Date & Time of Call_____
Emergency Medical Services: 911 or Direct Number_____
Manager/Supervisor/Employee: _____ Date & Time of Call_____

6. Confined Space Entrant Log

Reviewed by (Confined Space Attendant, Entrants, Supervisor)		Signature	
1._____	5._____	1._____	5._____
2._____	6._____	2._____	6._____
3._____	7._____	3._____	7._____
4._____	8._____	4._____	8._____

KEEP THIS CHECKLIST AT THE WORK LOCATION
FILED WHEN WORK IS COMPLETE

CONFINED SPACE
EVALUATION CHECKLIST

Definition of a Confined Space - A Confined Space has limited or restricted means of entry or exit, is large enough for an employee to enter and perform assigned work, and is not designed for continuous occupancy by the employee.

This checklist must be filled out whenever the job site meets the above criteria or whenever opening a Confined Space, such as a manhole, vault, or pit.

Work Authorization: Supervisor_____ Date:_____

Project Description:_____

Location:_____

	YES	NO	N/A	Examples:
Did you survey the surrounding area & is it free of hazards such as drifting vapors?				Smells (fuels, rottenegg) Accidents, Fire, Home-less, Illegal activites, etc
Does your knowledge of industrial or other discharges indicate this area is likely to remain free of air contaminants while occupied?				Personal observation; News; History, if known OR N/A if un-known
Are you knowledgeable in the operation of the gas detector to be used?				
Has the gas detector been calibrated? Enter the date of last calibration:_____				
Has the gas detector been "bump gas tested" and logged according to the manufacturer instruction/ specification prior to zeroing it out?				
Did you test the atmosphere of the confined space prior to lifting/opening cover and prior to entry into the space? **NOTE:**Stand upwind crack hatch and test if no weep hole. Did the atmosphere check as acceptable?				

Monitor Reading:	Cover	Inside
H2s PPM		
Co PPM		
O2 %		
LEL%		

Did you lock out / tag out or lock out/block out?				Electrical, valves, pumps, vehices,etc.
Are all other hazards controlled?				High flow; Vehicle exhaust; fall hazards; etc.

If the above requires entry (breaking the plane) to eliminate the hazard A PERMIT ENTRY IS REQUIRED!
Notice: If any of the above questions are answered "NO": DO NOT ENTER! A PERMIT ENTRY IS REQUIRED!
May be hazardous! Contact your Supervisor for further Work Authorization !

If all answered Yes proceed with Fall Protection and continuous ventilation & air monitoring for entry work (trash cleaning, meter reading, pump deragging, site checks, etc.

Signature:_____ Agency:_____ Date:_____

DU-ALL SAFETY

Confined Space Entry Permit

Permit valid for 8 hours only. All copies of permit will remain at jobsite until job is completed. *11/2014*

Work Location/Description of Space & Job Number:	Purpose of Entry or Equipment to be Worked on:
Entry Supervisor in Charge of Team: use 701 phone: (408) 398-4843)	Date of Confined Space Entry:
Authorized Attendants (safety standby person) & Initials: 1._____ 2._____ 3._____ 4._____	**Authorized Entrants** & Initials: 1._____ 5._____ 2._____ 6._____ 3._____ 7._____ 4._____ 8._____

RESCUE

Non-entry Rescue Procedures ☐ YES ☐ NO, if NO then list Rescue Personnel below:

Employer Standby Rescue Names:	Phone Number:
Contractor Standby Rescue Names:	Phone Number:
Fire Department:	Phone Number:
Paramedics:	Phone Number:
Dispatch:	Phone Number: (408) 730-7180
Rescue Procedures Specific Instructions:	

PRE-ENTRY CHECKLIST (Complete before obtaining work authorization)

Administrative Tasks	✓	**Potential Hazards:**	✓	**Safety Equipment Onsite**	✓
Post PRCS Danger Sign		Oxygen deficiency		Gas detection equipment w/ spare	
Check that entry team training is current		Oxygen enrichment		Safety harness w/ D ring	
Notify other work groups		Toxic gases or vapors		Safety line	
Notify office personnel		Mechanical hazards		Wristlets	
Discussed potential hazards with team		Electrical hazards		Hoisting equipment	
Review entry procedures with team		Corrosives		SRL	
Reviewed emergency response procedures		Water		Oxygen bottle	
Obtain work authorization signatures		Engulfment/entrapment		Radio equipment w/batteries	
Check condition of all safety equipment		Biological		Cell phone	
Check gas detection equipment calibration		Pressurized system		Fire extinguisher	
Perform pre-entry atmosphere tests		Noise		Lighting (Explosion Proof)	
Se-up barrier at entrance to space		Heat/Cold		Respirator (Air Purifying)	
Check for physical hazards		Falls		Manhole hook	
Isolation/Control Methods		Falling objects		Defibrillator	
Lockout/De-energize/Tag-out		**Safety Equipment Onsite**		Portable blower and hose	
Blocked or disconnected lines		Non-sparking tools		Rubber boots	
Purge – Flush and Vent		Tool bucket & Line		Ladder	
Ventilation		SCBA		First Aid Kit	
Electrical equipment grounded		Hard hat		Gloves, face shield	

Work Authorization Signatures	Entry Authorization	Permit Cancellation
701: _____ Manager: _____	I certify that the confined space work authorized by this permit has been reviewed with the entry team and that acceptable entry conditions exist and the necessary equipment for safe entry has been provided. Entry Supervisor Signature:_____ Date: _____	Date:_____ Time:_____ Entry Supervisor Signature: _____

Continuous Monitor Data Tables

Continuous Atmospheric Hazard Evaluation Monitoring – record every 15 minutes

Acceptable Conditions	Time:	Time:	Time:	Time:	Time:	Time:
>19.5% & <23.5% O_2 (Oxygen)	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$
<10% LFL (Explosive)	%LFL	%LFL	%LFL	%LFL	%LFL	%LFL
<25 ppm CO (Toxic)	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO
<10 ppm H_2S (Toxic)	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S

Continuous Atmospheric Hazard Evaluation Monitoring – record every 15 minutes

Acceptable Conditions	Time:	Time:	Time:	Time:	Time:	Time:
>19.5% & <23.5% O_2 (Oxygen)	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$
<10% LFL (Explosive)	%LFL	%LFL	%LFL	%LFL	%LFL	%LFL
<25 ppm CO (Toxic)	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO
<10 ppm H_2S (Toxic)	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S

Continuous Atmospheric Hazard Evaluation Monitoring – record every 15 minutes

Acceptable Conditions	Time:	Time:	Time:	Time:	Time:	Time:
>19.5% & <23.5% O_2 (Oxygen)	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$
<10% LFL (Explosive)	%LFL	%LFL	%LFL	%LFL	%LFL	%LFL
<25 ppm CO (Toxic)	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO
<10 ppm H_2S (Toxic)	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S

Continuous Atmospheric Hazard Evaluation Monitoring – record every 15 minutes

Acceptable Conditions	Time:	Time:	Time:	Time:	Time:	Time:
>19.5% & <23.5% O_2 (Oxygen)	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$	$\%O_2$
<10% LFL (Explosive)	%LFL	%LFL	%LFL	%LFL	%LFL	%LFL
<25 ppm CO (Toxic)	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO	ppm CO
<10 ppm H_2S (Toxic)	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H_2S	ppm H-[illegible]

APPENDIX F
Confined Space Inventory

NOTE: All City of Sunnyvale Confined Spaces are considered Permit-Required until completion of the Pre-evaluation checklist and initial air monitoring determine otherwise.

Water Pollution Control Plant	
1. APS	27. FGR Distribution Structure
2. SS Manholes	28. Float Pumping Station Sump
3. Main Deck Pipe Chases	29. Float Pumping Station
4. Primary Bldg. Pump Room	30. Float Pumping Station Valve Vault
5. Main Primary Sump – Channel	31. AFT
6. Primary Effluent Channel	32. AFT Ejector Pit
7. Primary Influent Flow Meter Vault	33. AFT Center Well
8. Grit Basins	34. AFT Distribution Structure
9. Sed. Basins	35. AFT – DMF
10. Sed. Gallery – Pump Sump	36. AFT – FGR
11. Sed. Gallery – Pump Sump	37. DMF
12. Digester Drainage Station	38. DMF Influent Drain Channels
13. Digester Tank	39. DMF Pumping Station
14. Digester Tank – Floating Cover	40. DMF Gallery
15. Supernatant PS Sump	41. DMF Under-drain
16. Sludge Dewatering Drainage Sump	42. Filtered Water Sump
17. Sludge Dewatering Pumping Station	43. Filtered Water Sample Drainage Sump
18. Landfill Gas Piping Vault	44. Chlorine Contact Channels
19. PGF Pipe Chases	45. Influent-Effluent Channel
20. Effluent Box #10	46. Final Effluent
21. Secondary Effluent Flow Meter	47. Potable Water Sump
22. Tertiary Pumping Station	48. Sodium Bisulfite Tank
23. Electrical Vault	49. Potable Water Valve Vault
24. FGR Tank	50. Final Analyzer Sump
25. FGR Tank – Center Column	51. Polymer Storage Tank
26. FGR Tank Collection Box	
Public Works Streets and Sewer Departments	
Other Departments	

APPENDIX G
PROCEDURES FOR ATMOSPHERIC TESTING

1. Use only monitoring/detection instruments that have been properly calibrated and maintained and are intrinsically safe.
2. Only trained operators who are skilled and knowledgeable about the use and limitations of the instrument should do the testing.
3. Check the area around the confined space opening for any hazardous gas or vapor concentrations.
4. Extreme care must be exercised when opening any confined space that may contain an explosive atmosphere. Some may contain an atmosphere that is too rich to burn. But when the space is opened, entering air can quickly change the atmosphere, making it explosive. Sparks created by removing the hatch or cover could ignite the vapors in the space. Therefore, when possible, insert the test probe into a vent hole. If the manhole cover or hatch has no vent opening, open the cover just enough to insert the probe into the space. Spark-proof tools must be used. *All levels and remote areas of the space need to be tested.* An extension device should be used for this purpose. If a hazardous atmosphere is detected, purge and ventilate the space. Avoid having employees lean over the opening or breathe the air in the space.
5. Always test oxygen content first. Make sure sufficient oxygen (a minimum of 16 percent) is available to support the use of the combustible gas monitor. The sampling protocol requires that combustible gas levels in the confined space be checked next. Flammable gases or vapors must not exceed 10 percent of the lower flammability limit (LFL).
6. Toxic substances are measured next in parts per million (ppm). Again, the equipment used must be specific to the substance likely to be found in the space. Never use a standard flammable gas monitor sensor to test for a toxic substance. The results could be deadly.
7. Some toxic substances may not respond well to electrical gas sensors or detector tubes. If this is the case, more specialized test equipment or laboratory analysis may be necessary.
8. Depending on their densities, gases may be heavier, lighter, or nearly the same weight as air. As a result, gases will stratify within a given confined space. The only safe way to test the atmosphere of a confined space is to sample all levels (top, middle, and bottom) with properly calibrated equipment. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested at a distance of approximately four feet (1.22 meters) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

- from Is It Safe to Enter a Confined Space? – Confined Space Guide - Cal/OSHA

APPENDIX H
Equipment Inventory

WPCP Equipment Cart	
Equipment Make:	**Model/Serial**
DBI Sala Rope System	TBD
DBI Sala Rogless Rescue Kit	TBD
Miller Mighty Evac Retrieval Winch/SRL	Serial – 21985D Manufacture date – 8-2002 800-873-5242
Miller Manhandler	Not legible label so no numbers 800-873-5242
Unithoist	UCL-Model- 10001 Serial#- 9391 Manufacture Date-9-2002
Miller Tri-pod 2- caribiners 3- cable guides	
Miller Revolution Full Body Harness Universal Med/Large	Model- FDTFDSD-QC-S-NBK Inspection #- 435661
Miller Revolution Full Body Harness Universal Med/Large (Broken tag cover)	Model – RDTSL-QC-BDP-UBK Inspection #- 400230
Miller Revolution Full Body Harness Universal Med/Large (Broken tag cover)	No Tags
Miller Revolution Full Body Harness Universal Med/Large	Model-RDTFDSL-QC-BDP-S-NBK Inspection #- 435647
Miller 6ft Rope Lanyard	No tags
Miller 6ft. Fall Arrest Lanyard	Model-940B-6FTGN Serial #-602989
Miller 6ft. Fall Arrest Lanyard	Model-940B-6FTGN Serial #-602990
2- Allegro Ventilators	
Survive Air Yellow Cabinet	1-SCBA tank 1-Harness SCBA tank Respirator face mask 888-ARR-SCBA (12-12)
Misc. PPE and other equipment	
24 inch Orange Cones	Canvas Bucket
Rope	Extension Cord/GFI receptical
Fire Extinguisher 9 lb. 4 oz. bracketed to cart	Orange Box – 2- headlamps/ caution tape
2- Climbing Helmets-Red	2-First Aid Kit/Fire Blanket/Wire Stretcher
TVEX suits	PPE Box- rubber/leather gloves, face shield Safety glasses, etc.
Streets and Sewer Department	

CITY OF SUNNYVALE

Environmental Services Department
Water Pollution Control Plant
STANDARD OPERATING PROCEDURE

(MATERIAL) SAFETY DATA SHEETS ((M)SDS) TRACKING AND NOTIFICATIONS

I. Purpose

The purpose of this Standard Operating Procedure (SOP) is to provide a consistent and familiar procedure to process Material Safety Data Sheets (MSDS) received for products ordered and handled by staff at the Water Pollution Control Plant (Plant). The MSDS is a document typically developed by the manufacturer or formulator of a product, which provides pertinent safety information and a chemical profile or description of a specific product.

The MSDS is required by law to be made available to employees in order to inform them about the health hazards associated with the chemicals they work, and/or come into contact with, as well as specific safety precautions they must follow when handling and working around these chemicals.

NOTE: Currently, chemical manufacturers are transitioning from MSDS to Safety Data Sheets (SDS) in order to create a more standardized format for hazardous communication. Hence, this SOP will refer to MSDS as (M)SDS from this point forward since the transition process has already begun and the Plant has a mixture of MSDS and SDS on file. Refer to IV.4 for a more detailed explanation of the upcoming transition.

II. Responsibility

All Plant staff that order or receive chemical products are responsible for providing copies of any *new* or *revised* (M)SDS to Support Services.

NOTE: If a product is on the *EPA's* list of *Extremely Hazardous Substances* or the list of *Banned or Severely Restricted Pesticides* steps should be taken to select an alternative product. Refer to the *Hazardous Material Management SOP* for further guidance.

All Plant staff are responsible for reading, understanding, and following the (M)SDS for the products they use and/or those used near or around them.

Support Services has the responsibility for routing any (M)SDSs to the appropriate staff as they arrive at the Plant, and for maintaining the on-site (M)SDS database for products received.

The City of Sunnyvale (City) has a contract with the 3E Company (3E) to provide hazardous materials information management services. 3E maintains a comprehensive list of chemicals available nationwide, and as part of the contractual agreement will service the City 24 hours a day, 7 days a week with (M)SDS on-demand services (**Attachment B**).

NOTE: Any employee may request a copy of an (M)SDS at any time by calling 3E at (800) 451-8346.

III. Description

Typically, the Plant receives (M)SDSs in three ways: 1) the vendor, supplier, or manufacturer sends the (M)SDS via email, standard mail, or fax when a product is ordered; 2) the (M)SDS is included with the shipped product; or 3) the person who ordered the product requests that 3E fax or e-mail the (M)SDS at the time of purchase.

For all products used by Plant staff, there should be a corresponding (M)SDS readily available. For the convenience of Plant staff, binders with hard copies of (M)SDS are kept on-site in the Support Services office. In addition, Support Services manages a comprehensive database of all (M)SDS available to Plant staff, which is regularly updated. The (M)SDS Chemical Inventory can be found at J:\ESD\WPCP\WPCPData\ MSDS_Chemical Inventory.

IV. Procedures

1. Routing and Tracking (M)SDSs:

   Refer to the MSDS Routing and Tracking Flowchart included as **Attachment A** for an overview of the routing and tracking process steps discussed in this SOP.

   A. Whenever a product is ordered or purchased, request an (M)SDS to accompany the shipment.

   NOTE: Suppliers are not obligated by law to enclose (M)SDSs with their shipments. However, consumers **ARE** required by law to keep copies of (M)SDSs on-site and available. Therefore, it is the responsibility of WPCP Staff ordering products to request, review, and maintain (M)SDSs from the supplier. Refer to **Section B.3** for additional information on how to handle a shipment that does not contain an (M)SDS.

B. When the (M)SDS **IS** received, the person receiving and/or ordering the product shipment is responsible for the following actions:

1. Check the (M)SDS Chemical Inventory database located at J:\ESD\WPCP\WPCPData\MSDS_Chemical Inventory to see if a (M)SDS is already on file and current for the product ordered.

2. If there **IS** an (M)SDS listed, compare the revision date and manufacturer name on both sheets.

    a. If the manufacturer name and revision date between the two (M)SDS match each other, no additional action is needed and the (M)SDS received with the shipment can be recycled.

    a. If the (M)SDS received is an updated version of the current (M)SDS (e.g. new manufacturer and/or revision date) place a label on the product stating, "**DO NOT USE - WAITING FOR (M)SDS AND ROUTING APPROVAL**," until the (M)SDS has been received and approved for use by Support Services and follow the procedure in Step 4.

    NOTE: If the (M)SDS is revised, Support Services will be responsible for replacing the outdated (M)SDS on file with the current revision and follow the steps outlined in Section D.

3. If there is **NO** (M)SDS on file, there are two common causes: 1) The product is *new*; or 2) the product is *already in use* and the (M)SDS was either misplaced and initially logged inappropriately. In either case, proceed according to the following steps:

    b. Place a label on the product stating, "**DO NOT USE - WAITING FOR (M)SDS AND ROUTING APPROVAL**," until the (M)SDS has been received and approved for use by Support Services.

    c. Contact the manufacturer of the product or 3E and request a copy of the (M)SDS be faxed or emailed.

    d. Refer to Step 4 below for instructions on how to proceed once the (M)SDS is received.

4. Fill out the blue *(M)SDS Routing Info Slip* (**Attachment C**), located near the (M)SDS binder in Support Services and attach it to the

(M)SDS before turning it into Support Services.

NOTE: If **NO** (M)SDS accompanies the shipment, follow the steps outlined in Section B.3 after checking the (M)SDS Master Binder or Chemical Inventory Database to see if there is an existing copy of the (M)SDS.

C. Once the (M)SDS and (M)SDS Routing Info Slip are submitted to Support Services, the assigned person from Support Services is responsible for the following:

1. Updating the Plant (M)SDS Chemical Inventory Database and hard copy in the Master Binder.
2. Placing the old (M)SDS into the archived file located in the Support Services area (SS1TOP).
3. Routing a copy of the (M)SDS to the appropriate group(s) for review and initial if approved for use.
4. Providing a copy of the (M)SDS and (M)SDS Routing Info Slip to the original submitter and the Environmental Engineering Coordinator (EEC).

    a. Following receipt of the (M)SDS and Routing Info Slip from Support Services, the EEC is responsible for updating the Hazardous Material Business Plan (HMBP) Chemical Inventory via California Electronic Reporting System (CERS) if the product exceeds certain threshold quantities.

        NOTE: A more detailed procedure for reporting hazardous materials can be found in the *Hazardous Material Management SOP #2006.*

D. The original submitter and all members of the group(s) are then responsible to review the (M)SDS and initial the (M)SDS Routing Info Slip and return it to Support Services.

E. Support Services will then place an approval stamp on the (M)SDS Routing Info Slip and return it to the original submitter.

F. The Product is now ready for use and the submitter may remove the "**DO NOT USE - WAITING FOR (M)SDS AND ROUTING APPROVAL**" label.

NOTE: Plant staff **MAY NOT** use any product until the procedures outlined above have been completed and Support Services has returned a copy of the (M)SDS and (M)SDS Routing Info Slip to the submitter with an approval stamp.

2. Discontinued Products:

   A. After a product is no longer used at the Plant, according to the City's Record Retention Policy the (M)SDS must stay on file for at least ***thirty years***.

   B. Plant staff that are involved with the discontinuation of a product in use are responsible for the following actions:

      1. Notifying Support Services that a product will no longer be used at the Plant by submitting the *(M)SDS Product Discontinuation Form* (**Attachment D**) located in the Support Service office.

      2. Support Services shall:

         a. Remove the (M)SDS from the active product binder.
         b. Update the (M)SDS Chemical Inventory Database and Master Binder.
         c. Place the (M)SDS in the archive file (SS1TOP).
         d. Notify the EEC.

      3. The EEC will update the HMBP Chemical Inventory as needed.

3. Emergency Situations:

   If the (M)SDS is needed for an emergency situation, such as a spill, contact 3E at (800) 451-8346 and provide them with the following information:

   - Product name
   - Manufacturer name
   - Product number
   - UPC code (if available)

   Be as specific as possible to ensure the request is quickly processed. Be ready to provide 3E with contact phone and fax information, if requested.

4. Updates from MSDS to SDS:

In 2012, OSHA revised its Hazard Communication Standard (1910.1200) to align with the Globally Harmonized System of Classification and Labelling (GHS), resulting in the adoption of sweeping changes to the content and format of MSDSs.

As a result, Safety Data Sheets (SDS) will replace MSDS by June 1, 2015, though the intention of hazard communication and chemical profile disclosure remains unchanged between the two formats.

Unlike the MSDS, however, the SDSs will follow a consistent standardized format composed of 16 sections intended to provide reliable hazard communication to employees ordering, handling, and transporting hazardous compounds. By June 1, 2016, all employers are required to have completely updated their chemical inventory libraries to the new SDS standard (**Attachment E**).

CAUTION:

1. Failure to comply with this SOP could result in danger to workers by having products available without providing the important health, safety, and handling information found in the MSDS.

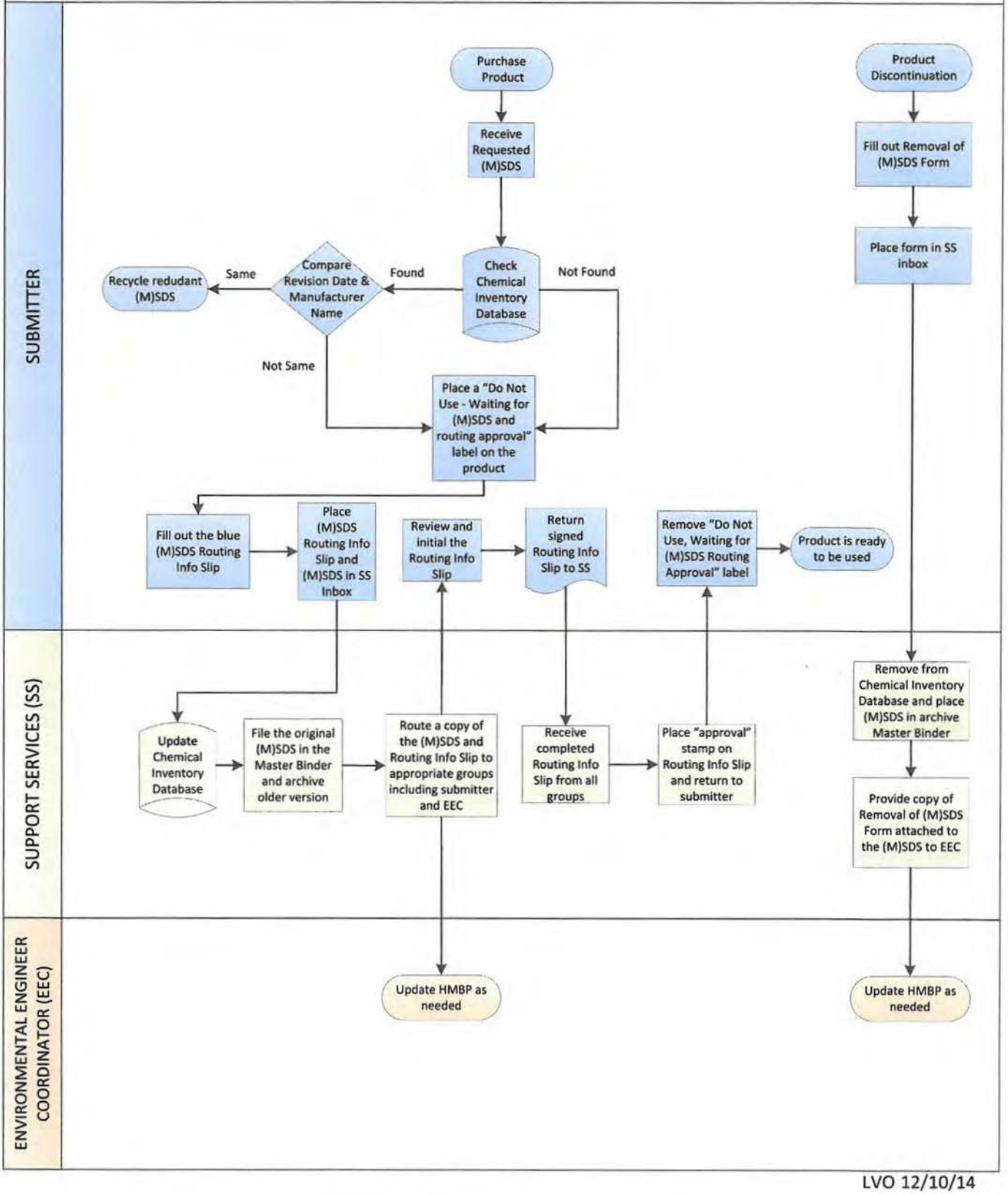
2. Failure to comply with this SOP could result in violation of the law by not providing all workers the valuable health and safety information found in MSDS.

SIGNATURES:

Approved		***Date***	06/22/15
Required ☒	*Water Pollution Control Plant Division Manager*		
Approved		***Date***	6/23/15
Required ☒	*Water Pollution Control Plant Operations Manager*		
Approved	Leonard Espinoza	***Date***	8/4/15
Required ☒	*Water Pollution Control Maintenance and Facilities Manager*		
Approved		***Date***	8/4/15
Required ☒	*Regulatory Programs Division Manager*		
Approved	Alo Kamavila	***Date***	8/4/15
Required ☒	*Laboratory Manager*		

Attachment A

(M)SDS Routing Procedure



ATTACHMENT B

Supplemental 3E Services Information

REV: E
DATE: 4/17/15

SOP # 2005

3E Services

SDS On Demand™

SDS On Demand offers round-the-clock access to SDSs and provides a single resource for the management of hazardous materials information and compliance requirements.

3E ONCALL

Overview

3E SDS On Demand provides 24-7-365 access to live professionals and the entire 3E database of millions of SDSs (safety data sheets), which are sent via email or fax directly to a customer, their employees or other related callers. In the event that a requested product is not available in the current 3E database, 3E acquires the SDS directly from the manufacturer and forwards it to the customer as soon as possible. Translation assistance is also available for non-English speaking requestors. Round-the-clock hotline access to the 3E EH&S Mission Control Call Center assists in compliance with global hazard communication requirements, offering a cost effective and efficient alternative to maintaining hard copy SDS binders. Access to the hotline is available within five days of contract start date and puts hazardous materials information and compliance just one call away. An assigned 3E Customer Integration Specialist ensures a smooth implementation of the program. In addition, 3E provides start-up compliance kits, which include instructions, posters, phone stickers and other literature displaying the toll free telephone number for employee use.

Features

24-7-365 SDS Access

Toll free, worldwide access to 3E's EH&S Mission Control Call Center and any SDS in the extensive 3E database. 3E sends a requested SDS to a fax located on a customer's site, to an ambulance, fire truck or healthcare facility as required.

SDS Obtainment

3E's EH&S Data Center Specialists maintain the 3E database through a regular review of all SDSs to ensure that the most current sheet is available to customers. And, based on 3E's extensive manufacturer relationships, SDSs are often supplied directly to 3E's library when an update is issued or a new product is released.

24-7-365 Chemical Spill Assistance

Immediate toll free access to 3E's EH&S Mission Control Call Center to spill specialists for information and guidance on hazard assessment, location, weather considerations, evaluation of employee competency, use of personal protective equipment, absorbents, choice of storage containers, labeling and agency reporting requirements. 3E has expertise with all types of hazardous materials including toxins, bloodborne pathogens, asbestos, lead, infection and radioactive materials.

24-7-365 Poison & Exposure Assistance

Immediate toll free access via 3E's EH&S Mission Control Call Center to poison control specialists, physicians, and toxicologists who provide medical advice related to chemical exposures, including skin/eye contact, inhalation and ingestion. Physicians are board certified in internal medicine, emergency medicine, occupation medicine, and medical toxicology. Veterinarians are board certified in internal medicine and veterinary toxicology.

Call Activity Documentation

3E tracks names, dates and all details related to the SDS request. This documentation is available upon request.

Access to Historical Records

Expired SDSs are archived at a secure storage facility in hardcopy or electronic format (DAT tape). Customers have access to archived SDSs upon request.

Each of 3E's services comes with a variety of options and enhancement modules that can be configured based on a customer's EH&S information management needs. Contact us for more information today.

3E COMPANY
A Verisk Analytics Company

Trusted Global Provider of Chemical, Regulatory & Compliance Information Services

REV: E
DATE: 4/17/15

SOP # 2005

Full Chemical Lifecycle Management

3E Company's comprehensive suite of data products and information services enables improved compliance with global Environmental Health & Safety (EH&S) requirements related to the safe manufacturing, distribution, transportation, usage and disposal of chemicals and hazardous products. Whether you are a manufacturer, distributor, transporter, retailer or corporate user of chemicals or hazardous products, 3E can deliver a program specific to the EH&S compliance information and management needs of your organization that provides benefits to the entire enterprise and throughout the supply chain. 3E Company's full product lifecycle and supply chain approach provides a single, integrated solution for managing EH&S capabilities, resulting in reduced cost, risk and liability while improving business and compliance processes.

EH&S Challenges

With the spotlight shining brightly on EH&S compliance, companies are challenged with finding effective ways to address the complexities and intricacies of EH&S compliance management. Not only do these challenges stem from a constantly-changing regulatory landscape, but also from a scarcity of newcomers to the EH&S field, and pressure on EH&S departments to manage increased responsibility with fewer resources. Addressing these issues requires broad and deep domain expertise—expertise that doesn't always exist within the company. And if it does, this expertise is probably best utilized by driving the company's overall compliance strategy, not bogged down with paperwork or the administrative burdens associated with maintaining compliance.

EH&S Solutions

At 3E Company, we understand the business and the burden of EH&S information and compliance management. 3E Company is a comprehensive, one-stop solution for content, tools and services for companies that want to take effective leadership and control of their product stewardship and EH&S compliance activities. 3E's products and services help companies make the transition from simply managing for compliance, to cutting-edge product stewardship practices that deliver tangible and sustainable business results.

Locations

CORPORATE HEADQUARTERS
3207 GREY HAWK COURT, SUITE 200
CARLSBAD, CA 92010 USA
TEL: +1 760.602.8700

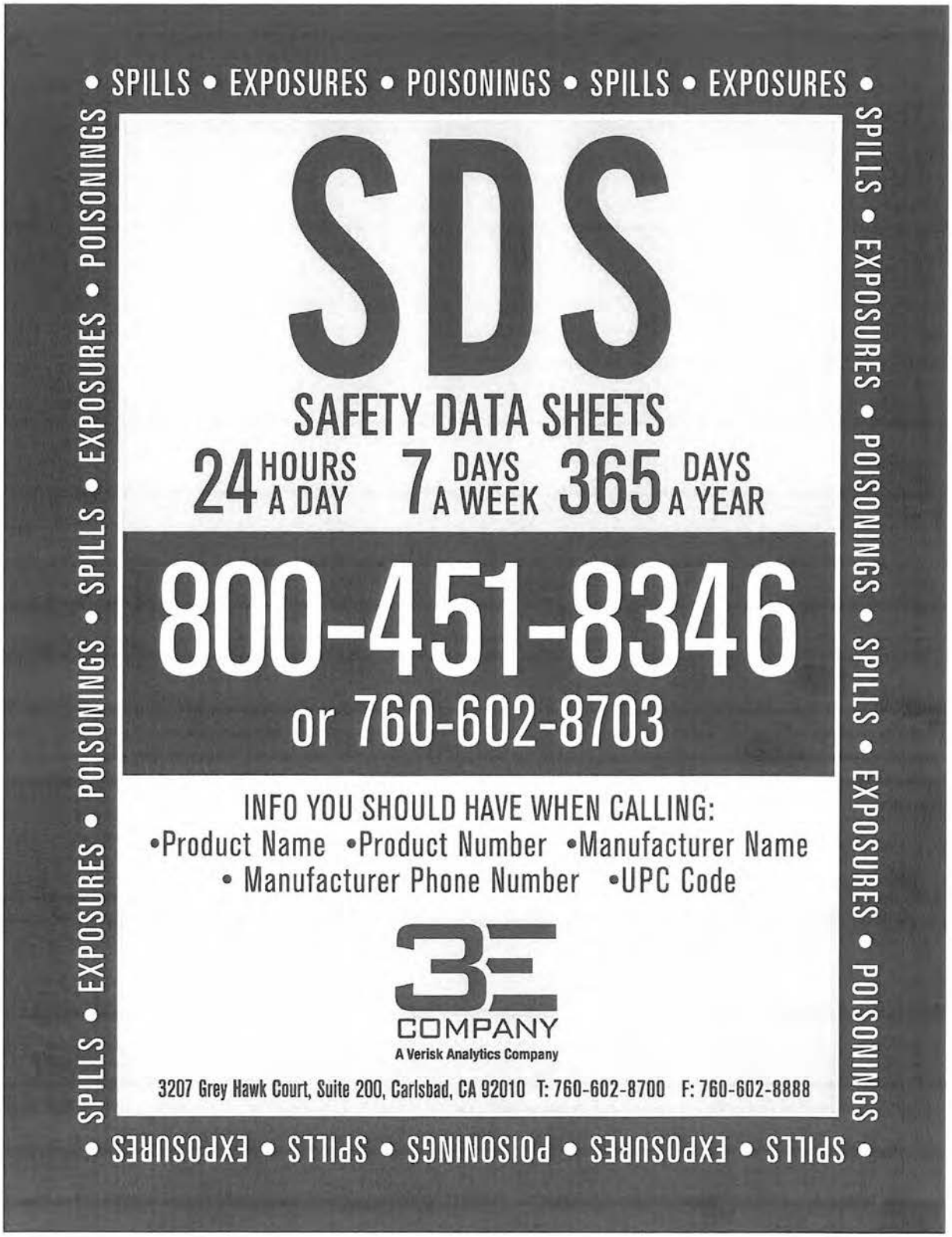
Visit WWW.3ECOMPANY.COM today to learn more. For more information contact us at 1-800-360-3220 or info@3ECompany.com.

3E COMPANY
A Verisk Analytics Company

Trusted Global Provider of Chemical, Regulatory & Compliance Information Services

REV: E
DATE: 4/17/15

SOP # 2005



ATTACHMENT C

(M)SDS Routing Info Slip

City of Sunnyvale WPCP
MSDS Routing Info Slip

Please fill out the required info below, attach MSDS and turn into Lisa for routing

Date Received:	_____	Storage Location:	_____
Name of product:	_____	Ordered By:	_____
Manufacturer:	_____	Used For:	_____
Unit/Quanity:	_____	Max Quanity:	_____
Route To:	☐ Lab ☐ CI ☐ OPS ☐ MT ☐ SS Check Which Division(s) MSDS Should Be Routed To	Revised MSDS:	☐ No ☐ Yes

ATTACHMENT D

(M)SDS Product Discontinuation Form

City of Sunnyvale WPCP
Removal of MSDS Form

CHEMICAL NO LONGER IN USE AT THE PLANT

Decommissioned Date: _____ **Storage Location:** _____

Name of product: _____

Manufacturer: _____ **Used For:** _____

ATTACHMENT E

Sample SDS – Acetone

Acetone

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 04/22/2013 Supersedes: 01/01/2000 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product Identifier

Product form: Substance

Substance name: Acetone

CAS No.: 67-64-1

Formula: C3H6O

Synonyms: Dimethyl ketone, Propan-2-one, Dimethyl ketone, β-Ketopropane, Propanone, 2-Propanone, Dimethyl formaldehyde, Pyroacetic spirit (archaic)

Intended Use Of The Product

Use of the substance/mixture: Solvent

Name, Address, And Telephone Of The Responsible Party

Glendale Industries, Inc.
1234 Anywhere Way
Anytown, US 12345
1.888.362.2007

Emergency telephone number

Emergency number : 1.888.362.2007
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call GLENTREC– Day or Night

SECTION 2: Hazards identification

Classification of the substance or mixture

GHS-US classification

Flam. Liq. 2 H225
Eye Irrit. 2A H319
STOT SE 3 H336

Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapour
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) : P210 - Keep away from heat, open flames, sparks. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P261 - Avoid breathing mist, spray, vapours.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear eye protection, protective clothing, protective gloves.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a POISON CENTER or doctor if you feel unwell.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use appropriate media for extinction.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P235 - Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container according to local, regional, national, and international regulations.

Other hazards
No additional information available
Unknown acute toxicity (GHS US)
No data available

SECTION 3: Composition/information on ingredients

Substances

Name	Product Identifier	%	GHS-US classification
Acetone	(CAS No.) 67-64-1	100	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336

Full text of H-phrases: see section 16

SECTION 4: First aid measures

Description of first aid measures
First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation: When symptoms occur: go into open air and ventilate suspected area. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.
First-aid measures after skin contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed
Symptoms/injuries: Eye irritation.
Symptoms/injuries after inhalation: May cause drowsiness or dizziness.
Symptoms/injuries after eye contact: Causes serious eye irritation.
Symptoms/injuries after ingestion: Ingestion may cause nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed
If medical advice is needed, have product container or label at hand.

SECTION 5: Firefighting measures

Extinguishing media
Suitable extinguishing media: Dry chemical, alcohol foam, carbon dioxide.
Unsuitable extinguishing media: Do not use a heavy water stream. A heavy water stream may spread burning liquid.

Special hazards arising from the substance or mixture
Fire hazard: Highly flammable liquid and vapour.
Explosion hazard: May form flammable/explosive vapour-air mixture.
Reactivity: Reacts with chloroform and bromoform under basic conditions, causing fire and explosion hazard. Ignites on contact with the chloride.

Advice for firefighters
Firefighting instructions: Exercise caution when fighting any chemical fire.
Protection during firefighting: Firefighters should wear full protective gear. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures: Use special care to avoid static electric charges. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Avoid breathing (vapor, mist). Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice.

For non-emergency personnel

Protective equipment: Use appropriate personal protection equipment (PPE).

Emergency procedures: Evacuate unnecessary personnel.

For emergency responders

Protective equipment: Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE)

Emergency procedures: Ventilate area.

Environmental precautions

Prevent entry to sewers and public waters.

Methods and material for containment and cleaning up

For containment: Absorb and/or contain spill with inert material, then place in suitable container. Do not take up in combustible material such as: saw dust or cellulosic material.

Methods for cleaning up: Clear up spills immediately and dispose of waste safely.

Reference to other sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: Handling and storage

Precautions for safe handling

Additional hazards when processed: Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling: Use only non-sparking tools. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Avoid breathing mist, spray, vapours. Use only outdoors or in a well-ventilated area. Wear recommended personal protective equipment.

Hygiene measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for safe storage, including any incompatibilities

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting, ventilating equipment.

Storage conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible products: Strong acids. Strong bases. Strong oxidizers.

Incompatible materials: Heat sources.

Storage area: Keep in fireproof place.

Special rules on packaging: Attacks many plastics.

Specific end use(s)

Solvent.

SECTION 8: Exposure controls/personal protection

Control parameters

Acetone (67-64-1)		
USA ACGIH	ACGIH TWA (ppm)	500 ppm
USA ACGIH	ACGIH STEL (ppm)	750 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m3)	590 mg/m³
USA NIOSH	NIOSH REL (TWA) (ppm)	250 ppm
USA IDLH	US IDLH (ppm)	2500 ppm (10% LEL)
USA OSHA	OSHA PEL (TWA) (mg/m3)	2400 mg/m³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

Exposure controls

Appropriate engineering controls : Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases/vapours may be released. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment : Fireproof clothing. Insufficient ventilation: wear respiratory protection. Protective goggles. Gloves.

Hand protection : Wear chemically resistant protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear fireproof clothing.

Respiratory protection : If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Thermal hazard protection : Wear suitable protective clothing.

Other information : When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, volatile liquid.
Colour	: Colorless
Odour	: Characteristic. Sweet. Mint-like.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -94.7 °C (-138.46°F)
Freezing point	: No data available
Boiling point	: 56.05 °C (132.89°F) at 1013.25 hPa
Flash Point	: -20 °C (-4°F)
Auto-ignition temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 233 hPa (at 20 °C)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.7845 g/cm³ (at 25 °C)
Solubility	: Miscible.
Log Pow	: No data available
Log Kow	: -0.24
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 0.32 cP
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity Reacts with chloroform and bromoform under basic conditions, causing fire and explosion hazard. Ignites on contact with the chloride.

Chemical Stability Stable under recommended handling and storage conditions (see section 7). Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

Possibility Of Hazardous Reactions The substance can form explosive peroxides on contact with strong oxidants such as acetic acid, nitric acid, hydrogen peroxide. Acetone may form explosive mixtures with chromic anhydride, chromyl chloride,

hexachloromelamine, hydrogen peroxide, nitric acid and acetic acid, nitric acid and sulfuric acid, nitrosyl chloride, nitrosyl perchlorate, nitryl perchlorate, permonosulfuric acid, potassium tert-butoxide, thiodiglycol and hydrogen peroxide.

Conditions To Avoid Avoid ignition sources. Heat. Sparks. Open flame. Direct sunlight. Extremely high or low temperatures.

Incompatible Materials Attacks many plastics. Strong acids. Strong bases. Strong oxidizers.

Hazardous Decomposition Products Carbon oxides (CO, CO2). May release flammable gases.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity : Not classified

Acetone (\f)67-64-1	
LD50 oral rat	5800 mg/kg
LD50 dermal rabbit	15688 mg/kg
LC50 inhalation rat (mg/l)	76000 mg/m³

Skin corrosion/irritation: Not classified

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitisation: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: Not classified

Specific target organ toxicity (single exposure): May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified

Symptoms/injuries after inhalation: May cause drowsiness or dizziness.

Symptoms/injuries after eye contact: Causes serious eye irritation.

Symptoms/injuries after ingestion: Ingestion may cause nausea, vomiting and diarrhea.

SECTION 12: Ecological information

Toxicity

Acetone (67-64-1)	
LC50 fishes 1	4144.846 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	1679.66 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	6210 - 8120 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	12600 - 12700 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Persistence and degradability

Acetone (67-64-1)	
Persistence and degradability	Readily biodegradable in water. Not established.

Bioaccumulative potential

Acetone (67-64-1)	
BCF fish 1	0.69
Log Kow	-0.24
Bioaccumulative potential	Not established.

Mobility in soil

No additional information available

Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

Waste treatment methods

Regional legislation (waste): U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII. U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring. U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents. U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards. U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring. U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics.

Waste disposal recommendations: To be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
Additional information: Handle empty containers with care because residual vapours are flammable.

SECTION 14: Transport information

In accordance with ICAO/IATA/DOT/TDG

UN number

UN-No.(DOT) : 1090
DOT NA no. UN1090

UN proper shipping name

Department of Transportation (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard Classes ACETONE
Hazard labels (DOT) : 3 - Flammable liquid

Packing group (DOT) : II - Medium Danger
DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242

Additional information

Emergency Response Guide (ERG) Number : 127
Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
MFAG-No. : 127

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

SECTION 15: Regulatory information

US Federal regulations

Acetone (67-64-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

US State regulations

Acetone(67-64-1)	
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

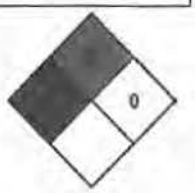
SECTION 16: Other information

Indication of changes : 04/23/2013
Other information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 3 Serious Hazard
Physical : 0 Minimal Hazard

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom) - US Only

CITY OF SUNNYVALE

Environmental Services Department
Water Pollution Control Plant

STANDARD OPERATING PROCEDURE

WELDING, BRAZING, SOLDERING, CUTTING & ANY RELATED HOT WORK

PURPOSE:

The Purpose of this SOP is to ensure the safety of all Plant Personnel. Only trained personnel shall perform this type of job.

RESPONSIBILITY:

Operations, Maintenance and Management (OMM) will be the groups responsible for implementing the provisions of this SOP.

PROCEDURE:

A. All Hot Work done outside of the welding shop must have a Hot Work Permit. (See Attachment 1) The permit must be signed by the Senior Operator, Senior Mechanic, or Supervisors and all procedures must be followed.
B. Notify all people in the immediate area of the hot work or welding activity.
C. Inspect all equipment, tools, and safety gear to ensure proper operating condition.
D. Be familiar with the type of materials that need to be welded, cut, soldered and heated.
E. Inspect surrounding area to be sure that the area is free from any combustible and flammable objects (i.e. rugs, paper, flammable liquids, etc.). Use fire resistive tarpaulins and metal covers as needed.
F. Provide a fire extinguisher in the area.
G. Have a fire watch person available.
H. Adequate ventilation must be provided. Use an exhaust fan, blower, or fume eliminator.
I. Send a copy of Part 1 of the Hot Work Permit to Support Services for placement in the Hot Work Permit file.
J. Post a copy of Part 2 of the Hot Work Permit outside of the area where the hot work is being done.

K. In a confined space or similar area, follow Confined Space Entry SOP #2000 procedures. Have the confined space entry permit signed by the Senior Operator, Senior Mechanic, or Supervisors.
L. Proceed doing the job and be aware of heat/fire in the surrounding areas.
M. Upon completion of the job (or during break time) turn off and secure all equipment, tools, and safety gear.
N. Clean up all surrounding areas (Hot Work Area) and monitor for at least sixty minutes to make sure the entire area is free from any possible fire or spontaneous combustion.

CAUTION:

Failure to comply with the SOP may result in injury or death, in some cases.

SIGNATURES:

Approved Required ☒	*Water Pollution Control Plant Division Manager*	***Date***	02/18/15
Approved Required ☒	*Water Pollution Control Operations Manager*	***Date***	2/12/15
Approved Required ☐	*Water Pollution Control Maintenance and Facilities Manager*	***Date***	
Approved Required ☐	*Regulatory Programs Division Manager*	***Date***	
Approved Required ☐	*Laboratory Manager*	***Date***	

HOT WORK PERMIT

**BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED?
IS THERE A SAFER WAY?**

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing, and Welding

Part 1

Instructions

1. Senior Operator, Senior Mechanic, or Supervisor:

A. Verify precautions listed at the right (or do not proceed with the work).

B. Complete Part 1 and submit copy to Support Services for placement in file.

C. Issue Part 2 to person doing the job.

HOT WORK BEING DONE BY:
EMPLOYEE
CONTRACTOR _____

DATE: _____
WORK ORDER No. _____
LOCATION / BUILDING & FLOOR
_____
_____
NATURE OF THE JOB
_____
_____
_____
NAME OF PERSON DOING HOT WORK
_____

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.

SIGNED: (Senior Operator, Senior Mechanic, or Supervisor)
_____

Permit Expires:
Date _____
Time _____**AM/PM**

Required Precautions Checklist

Available sprinklers, hose streams and extinguishers are in service/operable.

Hot work equipment in good repair.

Requirements within 35 ft of work:

Flammable liquids, dust, lint and oil deposits removed.

Explosive atmosphere in area eliminated.

Floors swept clean.

Combustible floors wet down, covered with damp sand or fire-resistive tarpaulins.

Remove other combustibles where possible. Otherwise protect with fire-resistive tarpaulins or metal shields.

All wall and floor openings covered.

Fire-resistive tarpaulins suspended beneath work.

Work on walls or ceilings:

Construction is noncombustible and without combustible covering or insulation.

Combustibles on other side of walls moved away.

Work on enclosed equipment:

Enclosed equipment cleaned of all combustibles.

Containers purged of flammable liquids/vapors.

Fire watch/Hot Work area monitoring:

Fire watch will be provided during and for 60 minutes after work, including any coffee or lunch breaks.

Fire watch is supplied with suitable extinguishers or charged small hose.

Fire watch is trained in using this equipment and in sounding alarm.

Fire watch may be required for adjoining areas, above and below.

Monitor Hot Work area for 4 hours after job is completed.

Other Precautions Taken:
_____

WARNING!

HOT WORK IN PROGRESS

WATCH FOR FIRE!

IN CASE OF EMERGENCY:

CALL: **SUNNYVALE PUBLIC SAFETY**

AT: **911**

WARNING!

CITY OF SUNNYVALE

Environmental Services Department
Water Pollution Control Plant

STANDARD OPERATING PROCEDURE

EMERGENCY EVACUATION OF THE SUNNYVALE WATER POLLUTION CONTROL PLANT

INTRODUCTION:

This SOP is intended for all Sunnyvale Water Pollution Control Plant SWPCP personnel, Recycling (SMaRT Station) personnel, and any persons (on-site contractors, visitors, other ESD employees) in the immediate and/or surrounding areas of the WPCP. If an "**Emergency**" condition exists and/or an emergency is announced over the intercom system where an evacuation of the SWPCP is required, the following procedure will go into effect for relocation to a safe area.

PROCEDURE:

1. Operations is responsible for coordinating the evacuation and ensuring that all persons are directed the proper evacuation area/s (refer to SOP # 3004).
2. Two maps (at least) are posted at key locations (typically at room and building exits) in every building. One map is an aerial view of the WPCP and surrounding area, and the other is a floor plan of the building. Each map has red arrows indicating the safest route to Plant evacuation areas (#1 or #2 relocation areas) should an emergency evacuation be required (See aerial map - Attachment A).
3. General Evacuation Guidelines (Once the alarm has been triggered):
   A. Listen carefully for radio and/or intercom announcements on what area/s are safe to evacuate to as this will directly depend on the nature of the emergency and conditions at the time.
   B. Leave your work area immediately in a safe and orderly manner continuing to listen for radio/intercom announcements for critical information.
   C. While you are evacuating notify others in your area of the condition of the emergency when leaving your work area (what the emergency is and where to evacuate).
   D. While evacuating, continue to check the windsocks/flagpole for indication/confirmation of which evacuation area to walk toward. (If conditions change you may need to relocate to a safer area.)

E. Relocate to evacuation area #1 (West of Tertiary public parking area on Carl Road) or area #2 (East of Dewatering area) based on direction of windsock and/or occurring event (i.e. chlorine leak and fire/s will require evacuees to go up wind and away from the event location, floods or spills require evacuees to go away from the spill and not to cross a possible flow path, etc.)

4. The only exceptions that may apply to these relocation areas would be:
   A. Conditions that make it unsafe to pass through an area to reach the relocation area (fire, explosion, ruptured piping, etc).
   B. You are directly involved with handling the emergency situation.

PLEASE NOTE:

1. While at a relocation area, it is important for everyone to monitor changing wind conditions so as not to be overcome by poisonous (toxic) gases, smoke, etc.
2. Full cooperation should be given to person(s) in charge. Any skills such as first aid or CPR could be of great value.
3. Proceed to the relocation areas in a safe, timely, orderly fashion. This will facilitate accounting of all persons. Relocation areas are marked with large signs, and these signs will be the meeting place. Employees will be accounted for at this time.
4. The lead Support Services representative (in relocation area #1) will communicate with relocation area #2 via two-way radios (Motorola) confirming names of people at area #2. (If the emergency dictates that an evacuation area is unsafe, Support Services staff and the Senior Operator on duty are to clearly communicate this to plant staff via the two-way radios and intercom system during the evacuation.)
5. The Senior Operator in charge will coordinate with the lead Support Services representative via the two-way radios (Motorola).
6. The lead Support Services representative will confirm with "701" that all employees and visitors on site have been accounted for or will list the names of people who have not been accounted for.
7. The Senior Operator will instruct specific operations staff to perform a plant search (if conditions allow) for people unaccounted for, and will respond back with results and confirm all areas evacuated. This information is to be available to Public Safety when and if they arrive on scene.
8. Do not re-enter the Plant or leave the relocation area until directed to do so by the Senior Operator or a Public Safety Officer.
9. When it is safe to return to plant, the Senior Operator will notify the Support Services representative that it is "All Clear / Condition Normal".
10. The lead Support Services rep will then relay the message to people in relocation areas #1 and #2 to inform them that it is safe to re-enter the plant.

CAUTION:

Failure to comply with this SOP could result in bodily injury or death, affect staff safety and could result in disciplinary actions up to and including termination.

SIGNATURES:

Approved _____ ***Date*** 04/12/13
WPCP Division Manager

Approved _____ ***Date*** 4/1/13
WPCP Operations Manager

Approved _____ ***Date*** 4-3-13
WPCP Maintenance Manager

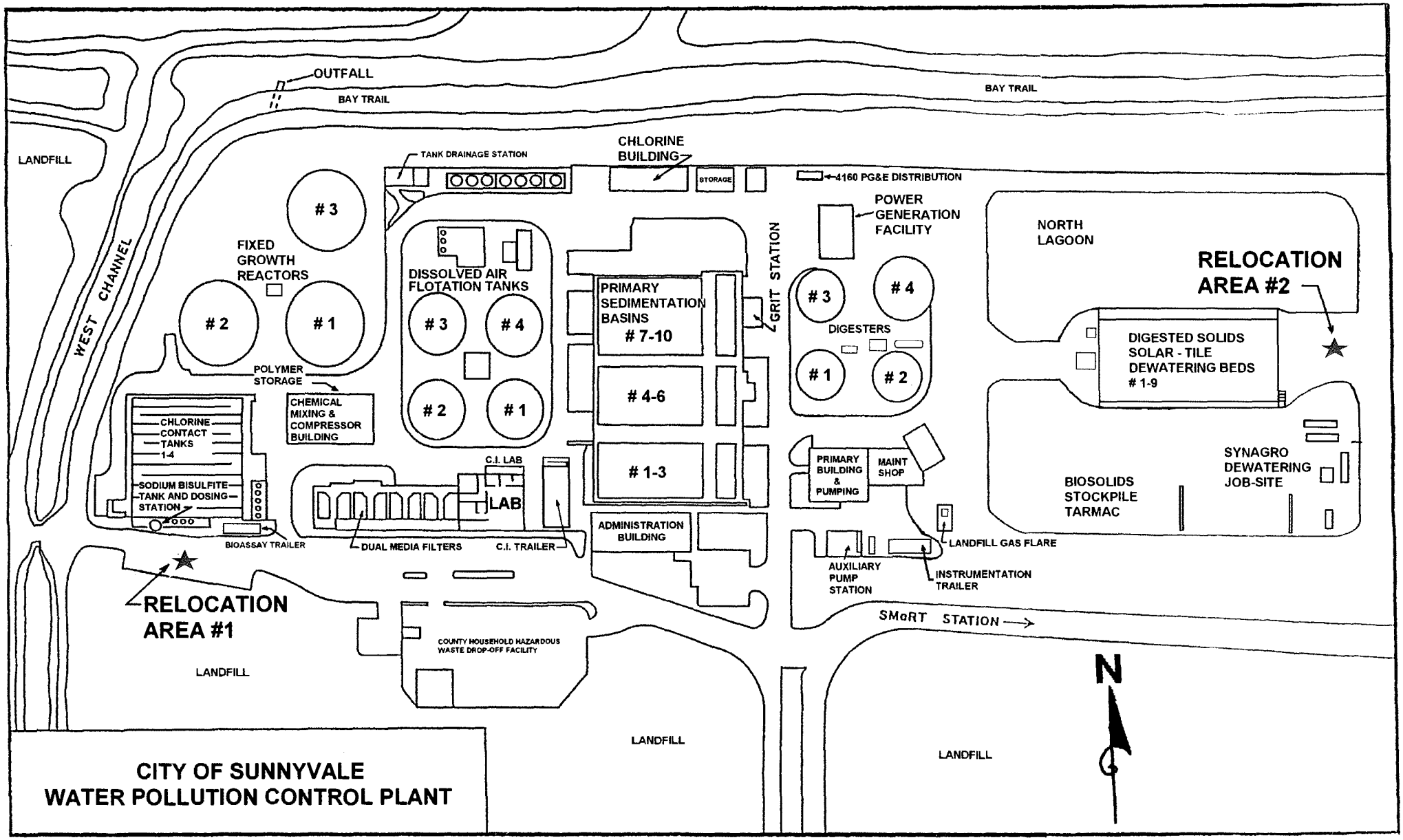
Approved _____ ***Date*** 4/12/13
Regulatory Programs Division Manager

ATTACHMENT – A

For internal use only, Support Services procedures are as follows:

- Notification of necessary locations as listed on the **Evacuation Drill Check List – Part 1**
- Post the Plant **EVACUATION IN PROGRESS** sign on outside of administration front door.
- Follow instructions on **Emergency Drill Announcement** sheet **for 30 seconds**.
- Using the **Emergency WPCP Evacuation List**, compare it against the WPCP In-Out Board for a count of all on-site personnel in the Plant.
- Take the Emergency WPCP Evacuation List, Visitor's Register clipboard, AED and the SV 10 Radios to Emergency Site Location #1.
- At Site #1, take a count of everyone using the **Emergency WPCP Evacuation List**.
- Via radio, call Emergency Site Location #2 to confirm who is there.
- After all are accounted for, radio Senior Operator (701) & relay/obtain any necessary information (i.e.: Is everyone accounted for? Is anyone missing? If yes, give name).
- Once completed & given the all clear from 701, all may return to work stations.
- Turn off the Emergency Alarm.

EMERGENCY EVACUATION MAP



CITY OF SUNNYVALE

Environmental Services Department ESD
Water Pollution Control Plant WPCP
STANDARD OPERATING PROCEDURE SOP

CHLORINE GAS SYSTEM STATUS DEFINITIONS

INTRODUCTION / PURPOSE:

The following terminology, definitions and their associated communication procedures shall be used by all Environmental Services Department (ESD) WPCP Employees.

The proper use of these code words will keep WPC personnel informed of the existing risk level of the Chlorine CL_2 Gas System. Each employee is responsible for understanding and the appropriate use of the terminology listed below. This will increase the level safety for ESD WPCP and other on-site personnel as well as the Emergency Response capabilities of WPCP personnel.

All condition announcements shall be repeated twice.

PROCEDURE:

1. "Chlorine System **NORMAL**"

   Shall be announced over the intercom system at the cessation of any of the situations described in Procedures #2 – 4.

2. "Chlorine System **CONDITION I**"

   Shall be announced over the intercom system by any WPCP operator or plant maintenance staff involved in routine work in the area other than normal readings and operational rounds. This shall include: receiving CL_2 deliveries, changing containers, putting a new container on line, performing any regular Preventative Operational Procedures(POP), Preventative Maintenance(PM), Corrective Maintenance(CM) and Housekeeping etc. The implication is that there is activity in the area and the risk factor has increased.

3. *"Chlorine System **CONDITION II**"*

   Shall be announced over the intercom. Condition II indicates that there is a leak in the system not including the 1-ton container itself. This type of leak can typically be solved by securing the one-ton container valve. Depending on conditions and concentration of chlorine inside the building, the Senior Operator will determine proper protection levels needed to enter into the facility to locate the leak during the operational response. A back-up person should be standing by per SOP 3005 Respiratory Protection Use in Chlorine Area.

The Condition II implication is that an actual leak exists, and a potential emergency situation may exist. All personnel are to be prepared to evacuate if the situation reaches EMERGENCY status. All personnel are to be aware of potential evacuation routes and procedures.

4. "Chlorine System **EMERGENCY"**

   Shall be announced over the intercom whether the CL_2 leak is contained and controlled by the toxic gas scrubbing system **or** an uncontrolled release outside of the chlorine feed and storage facility. **"EMERGENCY"** indicates that there is a leak in the 1-ton container system and/or an actual rupture in piping containing CL_2. If an operational response cannot secure / repair the leak it is imperative that the Public Safety Dispatch be contacted and informed of this type of event

   When EMERGENCY is announced, SOP 3004 CL_2 Emergency Response is in immediate effect. Evacuation procedures are implemented, Public Safety is called, and post initial operational response no one is to enter the area until the HAZMAT Team arrives and is prepared to provide assistance and back-up.

CAUTION:

⇒ Failure to comply with this SOP could result in unnecessary exposure to gaseous hazards.
⇒ Failure to comply with this SOP could result in bodily injury or death.
⇒ Failure to comply with this SOP could result in disciplinary action, up to and including termination.

SIGNATURES:

Approved _____ ***Date*** 04/12/13
WPCP Division Manager

Approved _____ ***Date*** 4/8/13
WPCP Operations Manager

Approved _____ ***Date*** 4-15-13
WPCP Maintenance Manager

Approved _____ ***Date*** 4/12/13
Regulatory Programs Division Manager

CITY OF SUNNYVALE

Environmental Services Department
Water Pollution Control Plant

STANDARD OPERATING PROCEDURE

LOCK OUT/TAG OUT PROCEDURE

INTRODUCTION:

The purpose of this SOP is to ensure the safety of Plant personnel while working on equipment, explain the term Lock Out/Tag Out, identify the types of hazards involved, describe the steps of Lock Out/Tag Out procedures at the Water Pollution Control Plant and explain the use of Caution tags. All portions of this SOP shall be followed explicitly and no exceptions will be made.

General:

1. Lock Out/Tag Out is the effective means of isolating and blocking all actual and potential hazards and energy sources that may be involved in a machine or system to be worked on. It is designed to prevent accidents, inadvertent start-up of equipment, or contact with a hazardous energy source.
2. Equipment or systems at the WPCP that require Lock Out/Tag Out include but are not limited to:
    a) All energized electrical circuits.
    b) Tanks, pipes or valves capable of releasing pressurized fluid, gas or air.
    c) Pumps, motors, hydraulic units, gear drives, collector drives, engines, rotating machinery.
    d) Any piece of equipment or system capable of releasing mechanical, thermal, electrical or hydraulic energy.
    e) PGF switchgear when work involves gensets.
3. Padlocks/Tags
    a) Each Maintenance Mechanic will have four lockouts, four padlocks and four warning tags assigned to them.
    b) Each Senior Operator will have three padlocks, lockouts and warning tags assigned to them. Padlocks and tags assigned to Operations are for performing POPs only!

    Important Note: All assigned padlocks (Senior Operators and Maintenance Mechanics) will have their keys kept by the individual that they are assigned to.

Procedure:

1. The basic steps for locking out/tagging out a piece of equipment are as follows:
    a) Check the equipment/system being worked on and identify all energy sources involved.
    b) Block (turn off, close valve, etc.) the energy source or sources.
    c) Lock it out with a lockout, or locking device and padlock.
    d) Place proper warning tag/sign on equipment stating equipment O.O.S., date and name of person securing.
    e) Racking out switchgear when appropriate.
    f) After locking out the necessary equipment, physically verify that it cannot restart, reopen or re-energize by:
        i. Pressing the start/test button at the stop-start station.
        ii. Turning the valve handle or wheel.
        iii. Checking for other sources of power/activation.
    g) If more than one person is working on equipment, multiple locks will be secured and properly noted on tags.
    h) If working in an electrical cubicle, the two man electrical procedure, SOP 4001, will apply until the bucket is pulled out of the stabs, locked (with a lockout) in the locked position and has been verified with a VOM that there is **no** power in the bucket. At this time **ONLY** one person is authorized to work on that bucket.
2. If the Maintenance Mechanic has all of his/her lockouts in use, lockouts, padlocks and tags will be signed out from one of the two lockout boards located in the Plant.
3. When POPs are to be performed by Operations, the Senior Operator will assign one (or more) of his/her padlocks to the operator(s) along with a lockout device and tag.
    a) After the POPs are completed, all assigned lockouts, padlocks and tags will be returned to the appropriate Senior Operator.
    b) If during the course of doing POPs, an Operator determines that a piece of equipment is in need of repair, the Senior Operator's lock, tag and lockout will remain on the equipment until Maintenance can install their lockout if determined to be a hazard. Otherwise the Operator's lock, tag and lockout will be removed from the equipment and returned to the appropriate Senior and the following procedure will be used to secure the equipment or system:
        1. The breaker will be opened at the bucket.
        2. Other energy sources will be secured.
        3. A magnetic "DO NOT OPERATE" sign will be placed on the bucket door, tags/signs placed to identify other secured energy sources.
        4. A work order will be generated on the piece of equipment.
        5. A notation will be made in the appropriate Operations log book that

the equipment was secured. This notation will be made by the person who actually secured the equipment.

6. After an assessment has been made as to the status of the equipment by a Maintenance Mechanic, that mechanic will perform the lock out/tag out of the equipment.

4. Removal of Lock Outs and Padlocks:
   a) Lockouts will **NOT** be removed by any person other than the individual who originally placed them, except in exceptional circumstances as noted below.
   b) Lockouts and/or padlocks will **NOT** be removed with bolt cutters or any other cutting device.
   c) If a Maintenance Mechanic is on vacation/sick or in training, and the removal of a lockout cannot wait until their return, the Operations Manager, Maintenance Manager or the Senior Mechanic is authorized to remove the appropriate lockout using the spare set of keys for all lockouts in the Plant.
      1. The removed lockout and padlock will remain in the custody of the Supervisor who removed it.
      2. On the day that the Maintenance Mechanic returns to work, the Supervisor that removed the lockout will , at his/her earliest convenience, physically return the lockout and padlock to the appropriate individual **AND** inform them that they removed the lockout (as per OSHA 1910.147).
      3. The lockout and padlock can only be returned to the individual that it is signed out too.
   d) Proper procedures for returning equipment to service:
      1. Locks removed.
      2. Signs and tags removed.
      3. Energize systems to test.
      4. Notify Senior Operator that equipment is ready for service and lockout/tagouts are removed.
      5. Log in appropriate log book that equipment is ready for service.
5. Use of Caution tags – This SOP rescinds the use of Caution tags.

CAUTION: Failure to follow this SOP will can result in bodily injury or death and can result in disciplinary action

SIGNATURES:

Approved Required ☒	*Water Pollution Control Plant Division Manager*	***Date*** 11/14/14
Approved Required ☒	*Water Pollution Control Operations Manager*	***Date*** 11/13/14
Approved Required ☒	*Water Pollution Control Maintenance and Facilities Manager*	***Date***
Approved Required ☐	*Regulatory Programs Division Manager*	***Date***
Approved Required ☐	*Laboratory Manager*	***Date***

CITY OF SUNNYVALE

Environmental Services Department
Water Pollution Control Plant
STANDARD OPERATING PROCEDURE

HAZMAT STORAGE OF MISCELLANEOUS ITEMS

INTRODUCTION:
To comply with the City's Hazardous Materials Management Ordinance, all hazardous materials must be properly stored. This SOP applies to all WPCP O&M personnel.

PROCEDURE:
1. Hazardous materials storage cabinets have been located in the Main Building Maintenance Wing, Main Building outside operations office, and in the Tertiary Chemical Building blower room. The cabinets are labeled as to the types of materials stored there, with applicable warning labels.
2. It is the responsibility of all Operations and Maintenance personnel to store all small quantities of lubricants, spray paints, etc. not already stored in the paint locker or oil storage areas in these storage cabinets.
3. Materials used during any shift must be returned to the storage cabinets at the end use and no later than the end of the day.
4. All materials stored in designated HAZMAT areas MUST be properly LABELED.
5. Pay special attention to storage compatibility. **NO INCOMPATABLE HAZMAT TO BE STORED TOGETHER.**

CAUTION: Failure to comply with this SOP violates the City's HHMP Ordinance and could lead to injury or death.

SIGNATURES:

Approved Required ☒	*Water Pollution Control Plant Division Manager*	***Date***	11/14/14
Approved Required ☒	*Water Pollution Control Operations Manager*	***Date***	11/13/14
Approved Required ☒	*Water Pollution Control Maintenance and Facilities Manager*	***Date***	
Approved Required ☐	*Regulatory Programs Division Manager*	***Date***	
Approved Required ☐	*Laboratory Manager*	***Date***	

CITY OF SUNNYVALE

Environmental Services Department
Water Pollution Control Plant

STANDARD OPERATING PROCEDURE

CHLORINE GAS LEAK EMERGENCY RESPONSE

PURPOSE

This SOP is designed to minimize exposure to WPCP personnel, visitors and the surrounding environment. A caustic gas scrubber, more commonly known as "Toxic Gas Ordinance (TGO) Scrubber", has primary responsibility to minimize exposure levels by collecting high level gas concentrations within the chlorine facility and scrubbing the gas, neutralization with caustic to reduce / eliminate elemental chlorine gas concentrations to a manageable level before it is potentially released to the environment. This procedure is designed to provide operation staff with the required knowledge and information about required training to proceed with a safe and orderly operational response in the event of TGO system failure and / or there is a leak in the one ton cylinder/s or any part of its supporting systems.

RESPONSIBILITY

Operations staff are the first responders on-site to handle emergencies and are responsible for implementing all provisions of this SOP. WPCP management and Senior Operators are responsible for ensuring that provisions of this SOP are followed. Public Safety is to provide back up support to operations when the Operations Response has demonstrated that the leak is uncontained and or Operations is unable to repair and/or mitigate the issue.

TRAINING

New personnel shall receive all training within six months of date of hire. All personnel shall receive training consisting of and not limited to:

1. 40 hour HAZWOPER training and annual 8 hour refresher training
2. Complete knowledge and understanding of SOPs; 2020, 3002, 3003, 3004 3005, 3008, 3031 and 3032
3. Training and show proficiency in use of a self-contained breathing apparatus (SCBA), level "A" encapsulated suit, and CL_2 B-Kit.

PROCEDURE

A. In alarm conditions, all SOPs shall be followed to ensure personnel safety.

B. Explanation of "tier one" and "tier two" alarm levels:

1. CHLORINE – Any of four CL_2 sensors sense gas

   ⇒ TIER ONE (warning) – Gas concentration ≥ 0.5 ppm

   ⇒ TIER TWO (shutdown) – Gas concentration ≥ 4.0 ppm

2. When a tier two alarm condition exist in the chlorine system supply of liquid is shut off downstream of tank and TGO system starts to minimize exposure levels. The following happens:

   ⇒ Alarm sounds for CL_2

   ⇒ TGO caustic scrubber pumps start

   ⇒ Shutdown valves close

   ⇒ All louvers open

   ⇒ CL_2 duct valve closes

   ⇒ Exhaust fans shutdown

   ⇒ Alarm(s) and gas concentrations indicate status of system on Tertiary Control Panel (TCP)

   ⇒ Gases are evacuated from facility scrubbed to < 5.0 ppm prior to being exhausted from scrubber stack.

C. Chlorine System Status (Refer to SOP 3002 for complete definitions)

1. Condition One: Shall be announced over intercom system whenever:

   ⇒ Receiving CL_2 deliveries

   ⇒ Changing containers

   ⇒ Putting a new container in service

   ⇒ Performing regular POP/PM etc.

2. Condition Two: Shall be announced over intercom system and acknowledgement from tertiary operator of condition existing whenever:

   ⇒ There is a leak in either system (except one-ton cylinder)

   ⇒ It is necessary to look for leaks (this requires SCBA and standby person)

   ⇒ A potential emergency exists

3. Condition Emergency: Shall be announced over intercom system and acknowledgement returned from tertiary operator of condition existing whenever:

   ⇒ There is a leak in a one-ton cylinder

⇒ There is a rupture in piping containing pressurized liquid CL_2

D. Should a CL_2 leak develop:

1. Determine severity of initial leak by checking for gas concentration levels and for "warning" or "shutdown" status on tertiary control panel
2. Notify senior operator by radio/intercom
3. Secure tank if safe and possible
4. Tertiary operator to announce Condition Two over intercom system immediately.
5. If leak is so severe and Tier Two shutdown is activated, check system status for proper operation.
6. Note wind direction
7. Tertiary operator to announce "Condition Emergency" over plant intercom system to commence evacuation
8. Senior operator will initiate all emergency procedures
9. Continue to monitor TGO system status and gas concentration levels in facility for proper operation and reduction to exposure levels
10. In the event of TGO failure or is out of operation, the following emergency response responsibilities of operational personnel shall commence immediately.

OUTLINE OF OPERATOR RESPONSIBILITIES

A. Senior Operator: Directly in charge of response

1. Determine severity of leak, if an emergency proceed as follows:
2. Contact "Public Safety" by radio or dial "911" for hazmat dispatch, acknowledge dispatch
3. Contact all radio bearing personnel and receive acknowledgement from each, use of intercom or phone may be necessary if no radio contact can be made
4. Don nearest SCBA
5. Put on personal protective equipment
6. Direct securing team (inside, outside operators) to meet at a safe location for securing strategy and set up of decontamination area.
7. Positioned in a safe location, monitoring securing team and individuals entering and leaving area
8. Keep in continual communication with tertiary operator, providing instructions and status of leak

If leak cannot be immediately secured and piping evacuated, securing team will leave leak area immediately, decontaminate and wait with senior operator at a safe location for hazmat assistance

Note: The Senior operator should only enter the leak area:
-If needed to determine securing procedures
-When absolutely necessary
-When working one person short

B. Inside Operator: When aware of CL_2 leak

1. Inform senior operator, receive acknowledgement of contact
2. Provide any requested information
3. Don nearest SCBA and report to designated emergency equipment storage structure
4. Put on personal protective equipment
5. Meet with senior operator as instructed to determine securing procedures
6. Be prepared to secure leak
7. Provide assistance and be aware of outside operator's responsibilities

If unable to secure to secure any leak, leave area immediately and wait for HAZMAT response crew to arrive.

C. Outside Operator: Should a CL_2 leak develop

1. Inform senior operator, receive acknowledgement of contact
2. Provide any requested information
3. Don nearest SCBA & report to designated emergency equipment storage structure
4. Put on personal protective equipment
5. Meet with senior operator as instructed to determine securing procedures
6. Secure feed tank, if leak is in downstream piping if possible, and evacuate piping as quickly as possible
7. If leak is on tank, secure leak as quickly as possible
8. If unable to secure any leak, leave area immediately and wait for hazmat arrival with senior operator

D. Tertiary Operator: When informed of CL_2 emergency

1. Stay in continual radio contact with senior
2. Call 911 and confirm that hazmat has been dispatched. Be prepared to give information such as:
   a. Your name and location
   b. Call back phone number
   c. What has happened
   d. Name of chemical(s) and/or substances involved
   e. Nature of threatened environment
   f. Prevailing wind direction

g. Let them hang up first

3. If emergency occurs during normal business hours, Monday through Friday between the hours of 0700 – 1600 hours
   a. Contact administration building front desk by phone at extension 7260 or by radio call "Sunnyvale 10"
   b. Inform them of emergency and to initiate a plant wide emergency evacuation
4. During all other hours announce on intercom "Attention, this is an emergency. There is a CL_2 leak and all personnel are required evacuate the plant immediately". Repeat message at least twice.

NOTE: If a drill is being conducted, your message will state "this is a drill".
NOTE: Stay firm, but calm when on the intercom.

5. Don SCBA
6. Turn off secondary effluent pumps
7. Close applied water channel gates
8. Open DMF drain gates
9. Shutdown lab/tertiary control building HVAC via "red" panic button at entrance of building
10. Assist with evacuation by going through lab and administration building
11. Open and lock front entry gate
12. Wait at a safe location for hazmat to arrive at intersection of Caribbean and Borregas

NOTE: It is very important that the tertiary operator meet with hazmat in order for communication between senior operator and hazmat commander to commence.

OTHER ITEMS OF IMPORTANCE

A. No matter how large or small of CL_2 leak, the Senior Operator will be notified as soon as possible. The senior operator will put in affect appropriate procedures.
B. This procedure may not have to be completely initiated if a leak can be secured without the use of a SCBA (i.e., there is a union in CL_2 piping that poses no immediate danger to an individual closing feed tank and evacuating piping.
C. Operations should be aware of any visitors/contractors in the plant and their location. Assume they know little or nothing of the dangers involved in an emergency.
D. After emergency situation is over and you leave the contaminated area, decontaminate yourself by immediately washing down with emergency shower and return to staging area

E. The CL_2 storage and feed areas are an enclosed structure. Gas concentrations may possibly be very high and visibility may be poor. Under no circumstances Do Not Open doors to facility during a leak. This will allow more gas to escape and create more of hazard to surrounding areas and personnel.

F. The 60 minute SCBA and level "A" encapsulated suit(s) have been selected to provide the utmost in protection for use during high level exposure with CL_2 liquid and gas.

If at any time your SCBA begins to alarm while involved in securing a leak, any and all personnel will leave immediately, decontaminate and return to staging area. Never leave anyone in the leak area alone.

Enter leak area during emergency response only when another individual is ready.

RESCUE

Do not attempt to rescue an individual from a contaminated area.

1. Unless you are wearing personal protection equipment appropriate to the hazard.
2. If risk is too great.
3. Unless you have appropriate back up

NOTE: You will do no one any good if you are a casualty yourself.

FIRST AID FOR CL_2 VICTIMS

A. If victim can be moved, move them to fresh air. If not, put a SCBA mask on them for breathing.
B. Ensure medical care is in route.
C. If not breathing or if there is no pulse begin CPR if necessary.
D. If breathing is difficult give oxygen when available.
E. Remove contaminated clothing and shoes.
F. In case of contact with CL_2 immediately flush skin or eyes with running water for at least 15 minutes.
G. Keep victim quiet and maintain normal body temperature to reduce chance of shock.
H. Continue to monitor victim for changes in status until emergency medical help take over.

CAUTION:

⇒ Failure to comply with this SOP could result in unnecessary exposure to gaseous hazards.

⇒ Failure to comply with this SOP could result in bodily injury or death.

⇒ Failure to comply with this SOP could result in disciplinary action, up to and including termination.

SIGNATURES:

Approved _____ ***Date*** 04/17/13
WPCP Division Manager

Approved _____ ***Date*** 4/15/13
WPCP Operations Manager

Approved _____ ***Date*** 4-16-13
WPCP Maintenance Manager

Approved _____ ***Date*** 4/17/13
Regulatory Programs Division Manager

Exhibit "C"
Compensation Schedule

SOW Section #	Description	UOM	Unit Price
III.A	Pond Solids Dredging, Dewatering and Disposal	Dry tons	$710.00
III.B	Digester Solids Dewatering and Disposal	Dry Tons	$715.00
III.C	Digester Cleaning and Disposal		
	Digester #1, #2, or #3	Per event	$83,000.00
	Digester #4	Per event	$83,000.00

Annual Price Increase

- **Annual price adjustment consistent with the change in the San Francisco Bay Area consumer price index at 90% of the change in the index year over year.**

Fuel Surcharge:

- **Quarterly adjustment for changes in the price of fuel (fuel surcharge) as published by the United States Department of Energy at the following website:**

https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_nus_w.htm

The proposed base rate for diesel fuel is $3.75 per gallon, which approximates the index rate in force for California ultra-low sulphur diesel fuel (15 ppm or less) as of the proposal due date of February 14, 2019 ($3.714 for week 2 and $3.739 for week 3 of February 2019.). The fuel surcharge adjustment up or down will be $0.80 per dry ton for every $0.05 change in the fuel index.

Exhibit D
INSURANCE REQUIREMENTS FOR CONSULTANTS/CONTRACTORS

Consultant/Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work by the Consultant, his agents, representatives, or employees.

Minimum Scope and Limits of Insurance. Consultant shall maintain limits no less than:

1. **Commercial General Liability**: $3,000,000 per occurrence and $6,000,000 aggregate for bodily injury, personal injury and property damage. ISO Occurrence Form CG 0001 or equivalent is required.

2. **Automobile Liability**: $2,000,000 per accident for bodily injury and property damage. ISO Form CA 0001 or equivalent is required.

3. **Workers' Compensation** Statutory Limits and **Employer's Liability**: $1,000,000 per accident for bodily injury or disease.

Industry Specific Coverages. If checked below, the following insurance is also required:

- x☐ Professional Liability Insurance / Errors and Omissions Liability in the minimum amount of $2,000,000 per occurrence.
- ☐ If working directly with children, the Certificate of Insurance must include coverage for molestation and sexual abuse in the minimum amount of $1,000,000 per occurrence and $2,000,000 aggregate. In the event that Abuse & Molestation Liability coverage is provided via a Claims Made Policy, the coverage shall include a minimum of a five year extended reporting clause.
- x☐ Pollution Liability Insurance in the minimum amount of $2,000,000 per occurrence
- ☐ MCS-90 Endorsement to Business Automobile insurance for transportation of hazardous materials and pollutants
- ☐ Builder's Risk / Course of Construction Insurance in the minimum amount of $_____.

Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared and approved by the City of Sunnyvale. The consultant shall guarantee payment of any losses and related investigations, claim administration and defense expenses within the deductible or self-insured retention.

Other Insurance Provisions

The **general liability** and automobile liability policies (and if applicable, pollution liability, sexual abuse and molestation, and builder's risk policies) shall contain, or be endorsed to contain, the following provisions:

1. The City of Sunnyvale, its officials, employees, agents and volunteers are to be covered as additional insureds with respects to liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; or automobiles owned, leased, hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the City of Sunnyvale, its officers, employees, agents or volunteers.

2. For any claims related to this project, the Consultant's insurance shall be primary. Any insurance or self-insurance maintained by the City of Sunnyvale, its officers, officials, employees, agents and volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the City of Sunnyvale, its officers, officials, employees, agents or volunteers.

4. The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City of Sunnyvale.

6. The policy limits of coverage shall be made available to the full limits of the policy. The minimum limits stated above shall not serve to reduce the CONSULTANT'S policy limits of coverage. Therefore, the requirements for coverage and limits shall be (1) the minimum coverage and limits specified in this agreement, or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured, whichever is greater.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of not less than A:VII, unless otherwise acceptable to the City of Sunnyvale.

Verification of Coverage

Consultant shall furnish the City of Sunnyvale with original a Certificate of Insurance effecting the coverage required. The certificates are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates are to be received and approved by the City of Sunnyvale prior to commencement of work.

Subcontractors

CONSULTANT shall require all subcontractors to procure and maintain insurance policies subject to this insurance requirements of this Exhibit. Failure of CONSULTANT to verify existence of sub-contractor's insurance shall not relieve CONSULTANT from any claim arising from sub-contractors work on behalf of CONSULTANT.