LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

GAS SYSTEM IMPROVEMENT PLAN SPECIFICATIONS

Prepared For

Stanislaus County Environmental Resources
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TECHNICAL SPECIFICATIONS
LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION
GEER ROAD LANDFILL

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SECTION 2A
SUMMARY OF WORK

1.0 GENERAL

1.1 Work Included

The project consists of drilling twenty-eight (28) vertical landfill gas (LFG) extraction wells along with the wells respective above or below grade lateral piping to the extraction header, installation of well seals by welding to the landfill liner and clamping to the well casings, abandonment of nine (9) vertical extraction and seven (7) vadose zone wells, refurbishment of two (2) condensate sumps, replacement of twenty six (26) wellheads on existing vertical gas extraction well, installation of compressed air and condensate conveyance piping and providing and installing all other appurtenant equipment as shown in the Drawings and as specified herein.

The project will involve working on, and making penetrations through the existing approved landfill closure cover systems. The cover systems include a 1-foot thick clay barrier with an overlying 1-foot thick vegetative cover layer on the side slopes and 60-mil Linear Low Density Polyethylene (LLDPE) geomembrane installed between a 1-foot thick foundation layer and a 1-foot thick vegatitive layer on the top deck.

The Contractor shall exercise care when working over the existing cover systems. Any damage to the cover systems caused by the Contractor, shall be repaired by the Contractor at no additional cost to the County. Penetrations through the cover systems as required for this project shall be limited to the specific area necessary for the work and shall be repaired and/or reconstructed in accordance with the Plans, Specifications and the Approved Closure Plan.

1.02 LOCATION OF PROJECT

The Geer Road Landfill is located at:

750 Geer Road
Modesto, CA 95357

1.03 DISPOSAL OF REFUSE

Refuse excavated during well drilling and trenching shall be classified as non-hazardous waste for the purposes of handling and disposal. Refuse excavated shall be delivered for disposal to a Stanislaus County approved landfill or transfer station before the end of each working day (Fink Landfill or other County designated site). The Contractor will cover the transportation expenses; tipping fees, however, will be covered by the County. Refuse shall not be allowed to be exposed overnight except with the written permission of the Stanislaus County Department of Environmental Resources (SCDER). All construction debris is the responsibility of the Contractor.

1.04 ABBREVIATIONS AND REFERENCES

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AQMD	Air Quality Management District – South Coast
AFBMA	Anti-Friction Bearings Manufacturer's Association
AGA	American Gas Association
AISC	American Institute of Steel Constructors
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWS	American Welding Society
AWWA	American Water Works Association
BTU	British Thermal Unit
CGA	Compressed Gas Association
CI	Cast Iron
CPM	Critical Path Method
CSA	Canadian Standards Association
CSP	Corrugated Steel Pipe
DOTSS	Dept. of Transportation (Cal Trans) Standard Specifications, 1999 Edition
FM	Factory Mutual Research Corporation
FRP	Fiberglass Reinforced Plastic
HDPE	High Density Polyethylene
IEEE	Institute of Electrical and Electronics Engineers
IPS	Iron Pipe Size
LFG	Landfill Gas
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NFPA	National Fire Protection Association
NLGI	National Lubricating Grease Institute
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
P&ID	Piping and Instrumentation Diagram
PVC	Polyvinyl Chloride
ROW	Right of Way
SAE	Society of Automotive Engineers
SSPWC	Standard Specifications for Public Works Construction, 2003 Edition
SS, SST	Stainless Steel
SCDER	Stanislaus County Department of Environmental Resources
UL	Underwriters' Laboratories, Inc.
USASI	USA Standards Institute

1.05 WORK BY OTHERS

A. The Contractor is advised that work by others may be in progress adjacent to, or at the site, during the Contract period. Cooperation during mobilization, storage, access, and other construction activities between the parties, and access by the SCDER at all times, are required.

B. The Contractor shall coordinate and interface his work with all other work on or adjacent to the site.

C. The Contractor shall give the work the necessary constant attention to facilitate the progress thereof and shall cooperate with the disposal site Owner, and other Contractors.

1.06 COORDINATION

A. It is a declared and acknowledged intention and meaning, through coordination of the Contract Documents and Schedules, to provide and secure the contemplated system complete and ready for use, as called for in the Contract Documents. The Contractor shall coordinate the work of the various trades to avoid interference, duplication of work, or unfinished gaps between operations.

B. The Contractor shall cooperate with the Owner and other Contractors so that the Owner's work or work by other Contractors can be carried out smoothly without interfering or delaying the work.

1.07 WORK HOURS

Unless otherwise approved by the Owner, construction activities and material deliveries to the disposal site shall be limited to the hours of 7 a.m. to 5 p.m.

1.08 WORKING DAYS

The Contractor may perform work Monday through Friday, between the approved Work Hours. No working operations will be conducted beyond those periods unless otherwise approved in writing by the SCDER.

1.09 CONSTRUCTION SCHEDULE

Within 5 working days of the award of the Contract by the SCDER, the Contractor shall submit a proposed Construction Schedule to the SCDER. The schedule shall indicate the criticality of operations and the milestones established by the SCDER. The schedule shall also reflect anticipated submittal dates for shop drawings, procurement, fabrication and delivery schedules of major materials required for the project. The schedule shall be in format approved by the SCDER, and shall be submitted on a compact disc (CD) as well as hard copies.

1.10 DEFINITION OF TERMS

DIVISION:	Stanislaus County Department of Environmental Resources (SCDER).
ENGINEER:	All references to Engineer shall mean SCDER acting either directly or through properly authorized representatives acting within the scope of the particular duties delegated to them. For this project Engineering/Design support will be performed by Tetra Tech BAS 1360 Valley Vista Drive, Diamond Bar, CA 91765, telephone (909) 860-7777.
CONTRACTOR:	The person, persons, firm, partnership, corporation or combination thereof, who have entered into a contract with SCDER to perform work pursuant to the Contract requirements.
CONSTRUCTION MANAGER (CM):	The firm under contract to perform Construction Management for the Project.
CONSTRUCTION QUALITY ASSURANCE (CQA):	The firm under contract to perform Construction Quality Assurance monitoring and reporting for the Project.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

PART 4 – PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Bid Schedule and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 2B
BASIS OF PAYMENT

1.0 GENERAL

1.1 Work Included

This section includes the items of work and the basis of payment for these tasks. The Contractor shall bid Items 1 through 18 below separately and provide a total sum for all work items. The Contractor is responsible for supplying all materials, equipment and labor necessary for the complete construction and installation of all work as described in these specifications and as shown on the Construction Drawings. Payment for each work item will be made on either a unit price (EA), lump sum (LS), vertical foot (VF), hourly (HR), or lineal foot (LF) basis, and only after that portion of the project has been completed.

1. Mobilization and demobilization. This task includes any and all temporary facilities and utilities, safety plans, and construction equipment required for this project. Payment for this work will be made on a lump sum (LS) basis. Twenty-five (25) percent of the lump sum price bid will be paid with the first payment request following satisfactory evidence of mobilization of sufficient labor, equipment and material to adequately progress the work of this contract. Twenty-five (25) percent of the lump sum price bid will be paid with the payment request subsequent to the payment request in which the initial payment for this item is made. Fifty (50) percent of the lump sum price bid will be paid with the Final Payment request. The price bid in the proposal for this item shall not exceed six (6) percent of the total project amount.

2. Supply all material, equipment and labor necessary for the drilling of twenty-eight (28) well borings, twenty-four inches in diameter, approximately 1,395 vertical feet of drilling, as shown on the Construction Drawings. This item shall include all resources necessary to prepare access roads and drill rig pads, drilling the well borings. This item does not include the installation of the well casing, backfill material or finishing. Payment for this item will be on a vertical foot (VF) basis.

3. Supply all materials, equipment and labor for the construction of twenty-eight (28) landfill gas extraction well casings (approximately 1,451 vertical feet (VF) of 4” HDPE SDR 11 piping, associated fittings, backfill material, bentonite seals, and finishing, as shown on the Construction Drawings, Detail 1/9. This item does not include costs associated with the well boring. Payment for this item is on a vertical foot (VF) basis.

4. Supply all materials, equipment and labor for the construction and installation of twenty-eight (28) landfill gas extraction wellheads as shown on the Construction Drawings, Detail 1/10. This item includes installing a wellhead, I.D. tags, fittings,

flex connectors and appurtenances as shown on the Construction Drawings. Payment for this item will be on a unit price (EA) basis.

5. Supply all materials, equipment and labor for the construction and installation of approximately 6,100 LF of 4-inch diameter SDR 17 above grade HDPE pipe and fittings as shown on the Construction Drawings. Include all labor and materials necessary for the HDPE pipe, fittings and joining. Payment for this item will be made on a lineal foot (LF) basis.

6. Supply all materials, equipment and labor necessary for repair of the flexible geomembrane cover at each of the twenty-eight (28) new well locations. The nine (9) vadose zone wells being abandoned will also require liner repair as shown on the Construction Drawings, Detail 3/10. Payment for this item will be made on a unit price (EA) basis.

7. Supply all materials, equipment and labor for installation of the pipe support racks, concrete pad and appurtenances as shown on the Construction Drawings, Detail 2/10. Support racks will be installed every 5 feet on center where necessary to obtain proper slope. Payment for this item will be made on a unit price (EA) basis.

8. Supply all materials, equipment and labor for installation of 6” CSP at road crossings where sufficient cover is available to install below grade as shown on the Construction Drawings, Detail 4/10. Payment for this item will be made on a lineal foot (LF) basis.

9. Supply all materials, equipment and labor for installation of above grade 6” CSP at road crossings where sufficient cover is not available as shown on the Construction Drawings, Detail 5/10. Payment for this item will be made on a lineal foot (LF) basis.

10. Supply all materials, equipment and labor for the construction and installation of 3-inch diameter SDR 17 HDPE fittings as shown on the Construction Drawings. Include all labor and materials necessary for the HDPE pipe, fittings and joining. Payment for this item will be made on a lump sum (LS) basis.

11. Supply all materials, equipment and labor for abandonment of nine (9) vadose zone wells as shown on the Construction Drawings, Detail 3/10. Liner repair costs at these locations should in included in line item 10. Payment for this item will be made on a unit price (EA) basis.

12. Allocation for potential loss of borehole for vertical landfill gas extraction wells due to refusal. Drilling will be performed for a minimum of 1 hour before determination is made by the Engineer as to the inclusion of drilling refusal (VF).

13. Allocation for stand by time by the driller if caused by either the Engineer or the Owner. Payment for this item will be made on an hourly basis (HR).

14. Supply all materials, equipment and labor for hauling of the refuse excavated during the drilling process. The waste will be taken to an approved landfill and tipping fees will be covered by the County. Payment for this item will be made on a lump sum (LS) basis.

15. Supply all materials, equipment and labor for the replacement and installation of twenty-six (26) landfill gas extraction wellheads as shown on the Construction Drawings, Detail 1/10. This item includes installing a wellhead, I.D. tags, fittings, flex connectors and appurtenances as shown on the Construction Drawings. Payment for this item will be on a unit price (EA) basis.

Option 1

- Supply all materials, equipment and labor for demolishing and removing existing concrete Sump 1-N vault, lid and appurtenances as shown on the Construction Drawings, Detail 1/6. Salvage existing pneumatic submersible pump, hose, piping and compressed air control panels as noted in the details. Payment for this item will be made on a unit price (EA) basis.

- Supply all materials, equipment and labor for installation of dual contained Sump 1-N vault, lid and appurtenances as shown on the Construction Drawings, Detail 1/7. Payment for this item will be made on a unit price (EA) basis.

Option 2

- Supply all materials, equipment and labor for demolishing and removing existing concrete Sump 2-N vault, lid and appurtenances as shown on the Construction Drawings, Detail 2/6. Salvage existing pneumatic submersible pump, hose, piping and compressed air control panels as noted in the details. Payment for this item will be made on a unit price (EA) basis.

- Supply all materials, equipment and labor for installation of dual contained Sump 2-N vault, lid and appurtenances as shown on the Construction Drawings, Detail 1/8. Payment for this item will be made on a unit price (EA) basis.

SECTION 2C
SPECIAL INSTRUCTIONS

1.0 GENERAL

1.1 Work Included

The Contractor shall comply with, but not be limited to; all Special Instructions listed in this Section.

1.2 Working Hours and Holidays

All work shall be performed during normal daylight hours (7a.m. to 5 p.m.) unless specifically authorized by the SCDER or otherwise stated in the Specifications. The Contractor shall advise the SCDER of the Contractor's intended regular work hours prior to construction. The Contractor shall not work on Stanislaus County holidays, unless specifically authorized by the SCDER. Note that County holidays may not match normal Contractor holidays.

1.3 Parking

Contractor's and subcontractor's personnel will only be allowed to park in areas as designated by SCDER. The parking area/areas will be designated by the SCDER prior to the start of the project. The Contractor will be responsible for any work necessary to prepare the designated area for parking. Any area disturbed by the Contractor will be restored to its original conditions as approved by the SCDER. The Contractor is responsible for any costs required to repair and/or restore the designated parking area/areas. The cost for shall be included in the Contractor's Bid Sheet unit costs. The SCDER will not authorize a separate unit cost.

1.4 Smoking Policy

Smoking is not allowed at the Geer Road Landfill. The smoking prohibition will be strictly enforced on this project due to the explosive nature of landfill gas and the extensive amount of vegetative cover on the site.

1.5 Designated Contractor Entrance

SCDER will determine entrance location(s) for use by the Contractor during the construction kick-off meeting. The Contractor will be limited to using only designated entrance location(s).

1.6 Contractor Key and Locks

The Contractor shall be responsible for securing and locking the construction entrance during non-working hours. The Contractor shall also ensure that entry to the site is controlled during working hours. The Contractor shall provide a lock that will be added to the chain/lock loop at the construction entrance for the duration of the project. The Contractor shall remove his lock at the completion of the project.

1.7 Special Clean-Up

Any trash generated on the project site by the Contractor, or his employees, will be cleaned up daily by the Contractor for disposal. It shall be the Contractors responsibility to make the arrangements necessary to provide trash disposal containers and service as required. Mud and dirt tracked off-site by the Contractor, his equipment, or his employees will be cleaned up daily and properly disposed of by the Contractor.

1.8 (BLANK)

1.9 (BLANK)

1.10 Superintendent & Foreman Cellular Phones

The Contractor's superintendent and Foreman shall be equipped with a personal cellular device through which the SCDER, Engineer or CM/CQA representative can reach the Superintendent and Foreman 24 hours a day.

1.11 Materials Delivery

The Contractor is to have all materials delivered to his work site and/or staging area. The SCDER, Engineer or CM/CQA representative will not accept delivery of materials.

1.12 Timeliness or Correction of Items Affecting the Operation of the Geer Road Landfill

The Contractor will not interfere with the continued proper operation of the Geer Road Landfill. The Contractor shall correct any interference with site operation immediately upon notification from the Engineer or SCDER.

1.13 Emergencies

The Contractor will provide the Engineer and the SCDER with the phone numbers of at least two individuals who may be contacted in an emergency on a 24-hour, 7-day per week basis, including holidays. To prepare for emergencies, the Contractor will ensure that his employees know the location of appropriate fire and first aid equipment and emergency phone numbers. In the event of an emergency, such as damage or rupture of an existing gas pipeline, the Contractor shall immediately notify the SCDER and the Engineer. Should such an emergency occur after hours, the Contractor shall notify the SCDER. This is in addition to the Contractor taking any appropriate immediate emergency response to correct the problem.

1.14 (BLANK)

1.15 Sanitary Facilities

The Contractor shall provide adequate chemical toilet facilities for personnel. The number of facilities shall be as required by Federal and State Safety and Occupational Standards. Chemical toilets shall be kept in a sanitary condition. The Contractor shall remove chemical toilets upon completion of the work and disinfect the premises.

1.16 Storm Damage

The Contractor shall be responsible for the repair of any storm damage to the work prior to the Final Inspection by the Engineer and SCDER. Storm damage of stockpiled materials is also the responsibility of the Contractor. Prompt repair of any storm damage shall be the responsibility of the Contractor, at no cost to the SCDER.

1.17 Equipment Fueling and Maintenance

The Contractor shall fuel and maintain equipment in designated areas of the site as directed by the SCDER. Any fuel spills will be immediately cleaned up, and the contaminated soil removed from the site by the Contractor at the Contractor's expense. Any temporary fuel storage tank necessary to fuel the Contractor's equipment will be placed within a secondary containment berm, structure' or secondary containment tank. The bermed area shall be lined with a material suitable to prevent contamination of the site and underlying soil. The Contractor shall be responsible to obtain any required permits for fuel storage/dispensing facilities that may be required.

1.18 Project Document Change Control

A structured process for controlling project Plan and Specification changes will be implemented by the Engineer. "Controlled" copies of the Plans and Specifications will be issued to the Contractor and SCDER. These "controlled" copies will be updated with any project changes, revisions, or addenda. The Engineer will not be responsible for providing changes, revisions, or addendum's to the Plans and Specifications, other than these "controlled" copies.

1.18.1 Reference Technical Specifications

The standard Technical Specifications shall be considered as the State of California Department of Transportation (Caltrans) "Standard Plans", 2006 Edition, and all subsequent amendments, supplements and additions.

1.19 Precedence of Contract Documents

In the event of conflict between the County Standard Specifications and these Special Provisions, the latter shall take precedence over and be used in lieu of such conflicting portions. The listing of certain sections from the County Standard Specifications and these Special Provisions shall not in any way relieve the Contractor of complying with each and every section of the County Standard Specifications.

Precedence of Contract Documents shall be as follows:

- Federal, State, or Local Regulations as may be required by law
- Permits from relevant agencies as may be required by law
- Change Orders and Supplemental Agreements
- Contract and Agreement
- Bid Proposal
- Addenda
- Special Provisions
- Contract Drawings
- General Requirements
- General Conditions
- Standard Drawings
- Standard Specifications
- Reference Specifications

1.20 Site Health and Safety Plan

The Contractor shall provide a site specific Health and Safety Plan (HSP) with the signed Contract documents that meets the minimum of all the requirements of Federal and State regulations through the construction activities. The HSP shall be submitted to the SCDER for review 10 working days prior to commencement of work and signed by Certified Industrial Hygienist. The Contractor shall determine the extent to which these requirements are applicable to his or her work and subcontractors work for this project. It is the responsibility of the Contractor to ensure compliance with all relevant health and safety regulations. The Contractor shall determine the level of protection to be utilized for his workers and for subcontractors during the project.

The Contractor shall be responsible for providing all items necessary for health and safety, including dust control, and personal protective equipment, in accordance with applicable Federal and State requirements. The SCDER reserves the right to instruct removal of any of the Contractor's employees or subcontractors that are not meeting the requirements of the law or the Site HSP. A copy of the HSP shall be maintained on-site by the Contractor at all times.

The Contractor shall be responsible for maintaining safety on the project site in accordance with the provisions of the contract and including OSHA and NFPA regulations. In addition, the Contractor shall supply all necessary safety equipment for his employees and any site visitors. Tail gate safety meetings shall be performed a minimum of once per week for all site personnel. The Contractor shall provide the CM with a summary of the items discussed at the weekly tailgate meetings and a sign-in sheet of those attending the weekly meetings.

All employees of the Contractor or Subcontractor working on the site shall be HAZWOPER trained and certificated. The Contractor shall provide copies of each employees initial and recurrent training certificates prior to mobilization to the site.

1.21 Safety Record

The Contractor shall provide a Safety Record with the Contract documents. The Safety Record shall be the OSHA 300 log for the past three calendar years (2010, 2011, and 2012) and for any incidents in 2013.

1.22 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section, The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

- Phone numbers of Contractor's Superintendent
- Emergency Contact List
- Site Health and Safety Plan
- HAZWOPER Certificates
- OSHA 300 Log

2.0 MATERIALS (NOT USED)

3.0 CONSTRUCTION METHODS (NOT USED)

4.0 MEASURMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 2E
LAYOUT OF WORK, SURVEYS AND AS-BUILTS

1.0 GENERAL

1.1 Summary

This Section includes general requirements for survey work to be performed by the Contractor including:

- Set offset stakes, slope stakes, and grade stakes for field layout of features of the work.

- Perform surveys for measurement of pay quantities.

- Perform surveys to record as-built conditions of the project.

1.2 Description

- Reference Points: Prior to construction, verify with the SCDER the locations of site reference points and survey control points as shown on the Construction Drawings. The reference points used are based on assumed coordinates, provided by others. The Contractor shall notify the SCDER if survey control points are damaged upon discovery. Also notify the Stanislaus County of any damage caused by Contractor, then repair or replace control points at no additional cost to the SCDER.

- The SCDER reserves the right to perform any desired checking and correction of the Contractor's surveys but this does not relieve the Contractor of the responsibility for adequate performance of the work.

- Equipment and Personnel: Provide instruments and other survey equipment that is accurate, suitable for the surveys required in accordance with recognized professional standards, and in proper condition and adjustment at all times. Perform work under the direct supervision of a licensed surveyor licensed in the state of California. Provide the SCDER with calibration certificates for all equipment utilized during construction.

- Field Notes and Records: Record surveys in field notebooks and provide copies of such records to the SCDER at intervals required by the SCDER. Furnish each field notebook to the SCDER when filled or completed. Electronic notes may be used if printouts are furnished to the SCDER and if the format of the printed information is approved by the SCDER.

- Use by SCDER: The SCDER may at any time use line and grade points and markers established by the Contractor. The Contractor's surveys are a part of the work and may be checked by the SCDER or representatives of the SCDER at any time. The Contractor is responsible for (1) any lines, grades, or measurements which do not comply with specified design criteria or proper tolerances, or which are otherwise defective, and (2) for any resultant defects in the work. The Contractor will be required to conduct re-surveys or check surveys to correct errors indicated by review of the field notebooks or otherwise detected at no extra cost.

1.3 Surveys for Layout and Performance of Work

Perform surveys for layout and performance of the work, reduce the field notes, make necessary calculations, and provide the data to the design engineers.

1.4 Surveying Accuracy and Tolerances in Setting of Survey Stakes

- The tolerances applicable in setting survey stakes are set forth below. Such tolerances do not supersede stricter tolerances required by the Drawings or Specifications, and do not otherwise relieve the Contractor of responsibility for measurements in compliance therewith.

Type of Mark	Horizontal Position	Elevation
Permanent reference points	1 in 10,000	±0.01 ft.
General excavation and earthwork	1 in 2,000	±0.10 ft.

1.5 Monitoring Device Protection

- Prior to beginning any site work, locate all monitoring wells, piezometers, utility boxes, valve boxes, landfill gas monitoring probes, or other utilities.

- Install markers identifying the location of these devices.

- The purpose of the work is to protect these items during construction.

- Any items damaged during construction by the Contractor will be replaced by the Contractor at no cost to the Owner.

1.6 Coordination with Stanislaus County

The Contractor shall keep the SCDER informed on progress of survey work to allow the SCDER sufficient time and ample opportunity to verify survey work without inconvenience or delay to Contractor.

1.7 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

- Field Notebooks

- The Contractor shall also prepare an AutoCAD File of the Approved Record Drawings and submit the files to the Engineer for review and approval prior to submittal to SCDER. These are a condition for final acceptance.

1.8 Qualifications of Surveyor

- Field layout shall be performed by or under the supervision of a Land Surveyor Registered in California, acceptable to the SCDER.

2.0 MATERIALS (NOT USED)

3.0 CONSTRUCTION METHODS (NOT USED)

3.1 Survey Reference Points

- Existing horizontal and vertical control points for the Project are shown on the Construction Drawings.

- The Contractor shall locate and protect control points prior to starting site work, and preserve all permanent reference points during construction.

- The Contractor shall make no changes or relocations to control points without prior written approval from the SCDER.

- The Contractor shall report to the Engineer when any control point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

- The Contractor shall replace Project control points which may be lost or destroyed at no additional cost to Stanislaus County. Replacements shall be re-established based on original survey control.

- Contractor shall establish and maintain a minimum of two permanent benchmarks at locations approved by the Engineer. Horizontal and vertical locations of the benchmarks shall be recorded on the As-Built Drawings.

3.2 Project Survey Requirements

- Establishment of lines and levels, located and lay-out, by instrumentation and similar appropriate means for all work indicated by the Drawings or Specifications.

- As construction proceeds, check every element for line, level, and plumb.

- Locations of existing sewers, culverts and other utilities shown on the Drawings are approximate and shall be field-verified by the Contractor prior to construction as required to complete the work. As-builts of discovered utilities shall be submitted to the Engineer.

- The Contractor shall maintain a complete, accurate log of all control and survey work as it progresses.

- At request of the Engineer, the Surveyor shall submit documentation to verify accuracy of field engineering work.

- Plan As-Built Drawings shall be at a scale used in the project Drawings, unless otherwise approved by the Engineer.

- Record Drawings shall be certified by the Surveyor and shall show dimensions, locations, angles and elevations of construction and site work.

3.3 As-Built Drawings

- The Contractor shall maintain two complete sets of red-lined As-Built Drawings. They shall be reserved for the purpose of showing complete details of the piping and valve work as actually installed. These Drawings shall be kept current with the construction. When any fabrication deviates from the Contract Documents, the Contractor shall prepare complete As-Built drawings of the actual fabrication. This will include detailed specifications, dimensions, material used, parts, devices and other accessories used in the fabrications. Two complete sets of As-Builts shall be included within the Operation and Maintenance Manual.

- The Contractor shall maintain a neat and accurately marked set of As-Built drawings showing the final locations and layout of all civil, mechanical, electrical, instrumentation equipment, piping and conduit, structures, PLC ladder logic diagrams, and other improvements. Drawings shall be updated daily, with all work instructions and change orders, accommodations and adjustments shown. As-built drawings shall be kept on site, or other location as approved by the Engineer, and shall be subject to inspection by the Engineer at all times. Progress payments, or portions thereof, may be withheld if as-built drawings are not accurate and current. As-built drawings shall be separate, clean blueprints reserved for the purpose of showing the complete picture of the components and assemblies actually installed.

- Upon completion of the work, these As-Built drawings shall be digitized as AutoCAD

file and transferred to the Engineer. Completed As-Built drawings will be signed by the Contractor, dated, and returned to the Engineer for approval. Hand drawn sketches will not be accepted as completed As-Built drawings.

- As-Built coordinates and elevations shall be provided by the Contractor for all significant system features, including extraction wells, extraction well control valves, extraction well tie-ins to the main header, header sample ports, flanges, valves, header and lateral fittings, angle points, etc. Top of pipe elevation for all buried piping, including header lines, compressed air lines and condensate lines shall be provided at intervals of 25 feet. Grade elevations are to be provided with all surveyed locations. As-Built coordinates shall be referenced to known benchmarks or survey monuments. All points shall be included in the final AutoCAD file that will be submitted to the County.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Payment will be established in the Contractor's Bid Sheet.

END OF SECTION

SECTION 2F
SHOP DRAWINGS AND PRODUCT DATA

1.0 GENERAL

1.1 Work Included

The Contractor shall submit to the Engineer electronic files for all submittals with the exception of any large files and any bound O&M Material for equipment installed or supplied as required by the Contract Documents. Three (3) copies of the aforementioned bounded O&M Materials shall be submitted for review. All submittals shall be submitted in ample time for each to serve its purpose and function, the Contractor shall submit to the Engineer such schedules, reports, drawings, lists, literature samples, instructions, directions, and guarantees as are specified or reasonably required for construction, operation, and maintenance of the work.

1.1 Schedule

The Contractor shall submit a schedule of items to be submitted for review to the Engineer and SCDER within 5 working days of the award of contract. The Contractor shall also submit a Critical Path Method (CPM) schedule for the entire project to the Engineer and the SCDER within 5 working days of the award of contract. This CPM schedule shall contain, at a minimum, all items listed in the Basis of Payment. The CPM schedule shall allow normal construction delays, which include seven (7) inclement weather days. These schedules will be reviewed by the Engineer and SCDER for adherence with the overall project schedule. The Contractor shall revise the schedules per the Engineer's comments as necessary to maintain overall project schedule milestones.

1.2 Schedule of Submittals

- A schedule of shop drawing, product data and as-builts submittals shall be made within five (5) working days of award of Contract. If the Contractor requires additional time for certain items, the Contractor shall request, in writing, permission for extension of time, stating the affected items, the reason for the request, and the approximate date when the submittal can be made.

- All submittals shall be made in time to avoid delaying the work.

- The Contractor shall allow five (5) working days for the Engineer to review Contractor submittals.

1.3 Review of Contractor's Submittals

Review and acceptance is required of any drawing, product specification, material specification, or equipment, before changes or substitutions can occur. The Engineer will return the marked copies indicating one of the following four (4) actions:

- If review and checking indicates no exceptions, copies will be returned marked "APPROVED AS SUBMITTED" and work may begin immediately on incorporating the material and equipment covered by the submittal into the work.

- If review and checking indicates limited corrections are required, copies will be returned marked "APPROVED AS NOTED". Work may begin immediately after incorporating into the work the material and equipment covered by the corrected submittal.

- If review and checking indicates insufficient or incorrect data has been submitted, copies will be returned marked "RETURNED FOR CORRECTIONS". No work may begin on incorporating the material and equipment covered by this submittal into the work until the submittal is revised, resubmitted, and returned marked either "APPROVED AS SUBMITTED" or "APPROVED AS NOTED".

- If review and checking indicates the material and equipment submitted is unacceptable, copies will be returned marked "RESUBMIT". No work may begin on incorporating the material and equipment covered by this submittal into the work until a new submittal is made and returned either "APPROVED AS SUBMITTED" or "APPROVED AS NOTED".

1.4 Submission Requirements

- Prior to submitting, the material shall be checked for compliance with these Specifications. Include transmittal with each submittal.

- Shop Drawings shall include but not limited to:

  - Project title.

  - Name of Contractor, SubContractor.

  - Field dimensions.

  - Identification of product and materials.

  - Fabrication and erection details.

  - Identification of deviations from Contract requirements.

- Contractor's stamp (approximately 3" x ½") and signature signifying that each drawing submitted complies with the Contract Documents as follows:

  Reviewed By:_____
  Contractor's Name:
  Job Name:
  Job Location:
  Job Number: Date:_____

  Reference numbers as to sheet and detail, or schedule, numbers shown on Contract Drawings, and specification section number where applicable.

  Indication of complete method of connection, jointing, support, anchorage, reinforcement, and other features of construction, including abutting finish surface.

- Product data shall include:

  The date of submission and the dates of any previous submissions.

  The project title and number.

  Trade identification.

  The names of the SubContractor and supplier.

  Identification of the product, including the specification section number.

  Relations to adjacent or critical features of the work or materials.

  Identification of deviation from Contract Documents.

  Identification of revisions on resubmittals.

  Contractor's stamp, signed, certifying to review of submittal, verification of products, and field construction criteria, and coordination of the information within the submittal with requirements of the work and of the Contract Documents.

  Performance characteristics and capacities.

  Wiring or piping diagrams and controls.

  Manufacturers recommended procedures for the installation of all components of

the systems, such as, but not limited to; pipe, fittings, flex hoses, braces, brackets, supports, and all process equipment.

- Each submittal shall be accompanied by a letter of transmittal containing a complete itemized and numbered list of the submittal material together with the Subcontractor's name. Separate letters of transmittal shall accompany each submittal from different Subcontractor's and different categories (trades and building units).

- Bound sets of brochures, catalog sheets, specifications and materials lists shall include an index sheet completely identifying the entire contents of the submittal in sequential order. The Contractor shall identify, stamp, and sign only this index sheet. Include a listing with specific model numbers, manufacturer, types, etc.

- In lieu of signing each brochure or specification sheet, the Contractor may indicate on the letter of transmittal that he has reviewed and approved all the material included. This does not eliminate the requirement for identification stamp information.

- Submittals: Forward all submittals to the Engineer.

1.5 Copies Required

- Submit the following number of copies of each item unless required otherwise in the Specification.

  Bound O&M Material for equipment installed or supplied: Three (3) printed copies.

1.6 Resubmission Requirements

- The Engineer will return to the Contractor one (1) electronic copy stamped and signed, with the corrections noted, if any.

- Make all corrections or changes in the submittals required by the Engineer and resubmit an electronic copy only when so indicated.

- Shop Drawings and product data:

- Revise initial drawings or data, and resubmit only when so indicated on the submittal.

- Indicate all changes which have been made other than those requested by the Engineer.

1.7 Engineer's Responsibilities

- The Engineer will review submittals for design concept and general compliance with the Contract Documents. He will not be responsible for quantity, size, or dimensional errors on the Shop Drawings.

- The Engineer will affix to the submittal a stamp indicating the action to be taken, and will return the submittal within five (5) working days after receipt.

- Approval of a separate or specified item does not constitute acceptance of an assembly in which the item functions.

1.8 <u>Distribution</u>

- Contractor: Responsible for his own use and that of Subcontractor's, suppliers, the manufacturer, and field workers.

- Engineer: Responsible for his own use and that of the SCDER.

1.9 <u>(BLANK)</u>

2.0 MATERIALS (NOT USED)

3.0 CONSTRUCTION METHODS (NOT USED)

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 2G
CONTROL OF WORK

1.0 GENERAL

1.1 Quality Control

- All equipment, materials, and articles incorporated in the work covered by this Contract shall be new and subject to review and acceptance by the SCDER unless otherwise specifically provided for in the Specifications.

- All material and equipment shall be of the specified quality and equal to the samples found to be acceptable by the Engineer and SCDER, if samples have been submitted. The work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission in the Contract Documents.

- Materials and equipment to be supplied under this Contract will be tested and inspected at the work site.

- Inspectors employed by the SCDER shall be authorized to inspect all work done and materials and equipment furnished. Such inspection may extend to all or any part of the work, and to the preparation, fabrication, or manufacturing of materials and equipment to be used. The Inspector will not alter or waive the provisions of the Contract Documents.

- The Contractor shall at all times maintain proper facilities and provide safe access to all parts of the work, to the shops wherein the work is in preparation, and to all warehouses and storage yards wherein materials and equipment are stored, for purposes of inspection by the SCDER.

- The Contractor shall furnish the SCDER with every reasonable facility for ascertaining whether or not the work as performed is in accordance with the requirements and intent of the Specifications, Drawings, and Contract. Should any work be covered before acceptance, inspection, or consent of the SCDER, it must, if required by the SCDER, be uncovered for examination at the Contractor's expense.

1.2 Warranty of Work

- All equipment, materials, and articles incorporated in the work covered by this Contract shall be new and subject to review and acceptance by the SCDER unless otherwise specifically provided for in the Specifications.

- Where equipment, materials, or articles are referred to in the Specifications or Drawings as "or equivalent", "equal to", or "or approved equal", the Engineer shall decide the question of equality.

- The Contractor shall guarantee the work against defective materials or workmanship for a minimum period of one (1) year from the date of its final acceptance under this Contract, except where longer warranty periods are specifically stated by the manufacturer of individual components.

- It is the Contractor's ultimate responsibility to deliver, at the time of final acceptance, a complete project that complies with these Specifications and Drawings. All items shall be 100% complete and ready to operate.

- During the warranty period, should the Contractor fail to remedy defective material or workmanship, or to make replacements within five (5) days after written notice by the SCDER, it is agreed that the SCDER may make such repairs and replacements at 1.5 times the actual cost of the required labor, and materials shall be chargeable to and payable by the Contractor.

- In the event it is necessary for the SCDER to file suit to enforce any liability of the Contractor pursuant to this article, Control of Work, the SCDER shall be entitled to recover from the Contractor, in addition to all other amounts found due and owing, costs of suit and reasonable expenses and fees, including reasonable attorneys' fees incurred by the SCDER in successfully enforcing the Contractor's obligations, all to be taxed as costs and included in any judgment rendered.

- The warranty provided herein shall not be in lieu of, but shall be in addition to any warranties or other obligations otherwise imposed by law. The remedies provided herein shall not be exclusive and the SCDER shall be entitled to any and all remedies provided by law.

2.0 MATERIALS (NOT USED)

3.0 CONSTRUCTION METHODS (NOT USED)

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor' Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 2H
TEMPORARY FACILITIES AND CONTROLS

1.0 GENERAL

1.1 Work Included

- The Contractor shall comply with all requirements of the National Pollutant Discharge Elimination Solution (NPDES) and San Joaquin Valley Air Pollution Control District (SJVAPCD) regulations. The Contractor shall furnish, install and maintain required construction aids and barriers as required to prevent public entry, and to protect the work, existing facilities, trees and plants from construction operations and other temporary facilities required to complete the work.

- The Contractor shall provide and maintain methods, equipment and temporary construction, as necessary, to provide controls over environmental conditions at the construction site and related areas under Contractor's control.

- The Contractor shall remove all temporary facilities at completion of work or when no longer necessary.

- The Contractor shall not interfere with the normal operations of the Geer Road Landfill.

1.2 Dust Control

- The Contractor shall be prepared to spend as much time as may be required to keep dust under control. The air contaminant emission at the work area shall not exceed 20 percent opacity during the contract period. Local regulatory requirements may be more stringent than the maximum allowable stated above. The Contractor is responsible for identifying and obtaining necessary permits and complying with all applicable regulatory requirements. If the Contractor fails to provide the necessary dust control, to the SCDER's satisfaction, the project will be shut down, at the Contractor's expense, until the Contractor presents satisfactory evidence to the SCDER that they can continue work and prevent dust as required.

- The Contractor shall provide continuous positive methods and/or apply dust control water to prevent raising dust from construction operation, and provide positive means to prevent airborne dust from dispersing into the atmosphere. Chemical dust suppressant shall not be used. Dust suppressants shall be approved by the Engineer prior to use.

- The Contractor shall spray with water all unpaved working areas prior to starting work and subsequent spraying shall occur as needed during high winds or when fugitive dust is observed during the day to provide adequate dust control

1.3 Water Services

The Contractor shall contact the local water department to make necessary arrangements to provide water services during construction and obtain any permits necessary. The Contractor is responsible for paying for all connection and usage fees associated with the water services.

1.4 Water Control

- The Contractor shall be responsible for the implementation of all necessary Storm Water Best Management Practices (BMP's) for the prevention of storm water pollution. The current Geer Road Landfill Storm Water Pollution Prevention Plan (SWPPP) updated in June 2013 outlines all of the appropriate BMP's that will need to be incorporated, see Attachment A of this Section. The current SWPP is attached.

1.5 Debris Control

- All areas under Contractor's control shall be maintained free of extraneous debris.
- The Contractor shall initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas, or along access roads and haul routes.
- Containers shall be provided by the Contractor for deposit of debris.
- The Contractor shall prohibit overloading of trucks to prevent spillage on access and haul routes. Traffic areas shall be periodically inspected to enforce requirements. All loads must be covered leaving the disposal site.
- The Contractor shall schedule periodic collection and disposal of debris. Additional collections and disposal of debris shall be provided whenever the periodic schedule is inadequate to prevent accumulation.

1.6 Pollution Control

- The Contractor shall provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations. If such contamination shall occur, the Contractor shall immediately notify the Engineer and the SCDER.
- The Contractor shall provide equipment and personnel to perform emergency measures required to contain any spillage and to remove contaminated soils or liquids; and shall excavate and dispose of any soil contaminated by the construction operations, and replace with suitable compacted fill, topsoil and vegetation as directed by the SCDER.

- The Contractor shall take special measures to prevent harmful substances from entering public waters; and shall prevent disposal of wastes, effluents, chemicals, sediments, or other such substances adjacent to streams, or in sanitary or storm sewers.

- The Contractor shall provide systems for control of atmospheric pollutants and shall prevent toxic concentrations of chemicals; and prevent harmful dispersal of pollutants into the atmosphere.

- The Contractor shall provide adequate secondary containment structures for any above ground petroleum storage tank and/or drums.

- The Contractor shall comply with the site NPDES Permit and Storm Water Pollution Prevention Plan (SWPPP) during construction. Areas where pollutant discharge must be eliminated shall include, but not be limited to, spoil and stockpile areas, all staging areas, and other areas created in connection with work under this contract, whether or not said areas are within the delineated project limits. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval or, revising, amending, implementation and removal of the specific requirements set forth in the SWPPP.

1.7 <u>Erosion Control</u>

- The Contractor shall plan and execute construction and earthwork using methods to control surface drainage from cuts and fills and from borrow and waste disposal areas in order to prevent erosion and sedimentation; and shall hold the number and size of areas of bare soil exposed at one time to a minimum, and provide temporary control measures such as berms, dikes, silt fence, silt dams, drains, etc., as shown on the Construction Drawings and as directed by the Engineer.

- The Contractor shall construct fills and waste areas by selective placement to eliminate surface soils that are susceptible to erosion.

- The Contractor shall periodically inspect earthwork to detect any evidence of the start of erosion, and apply corrective measures as required to control erosion.

- During trenching activities, Best Management Practices shall be used to prevent erosion of soils temporarily stockpiled from excavated trenches. Practices such as silt fences and not working during rain events or windy days may be used to reduce soil erosion during installation of the gas collection piping (mitigation measure).

2.0 MATERIALS (NOT USED)

3.0 CONSTRUCTION METHODS (NOT USED)

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

Attachment A

THE GEER ROAD LANDFILL

PERMIT IDENTIFICATION NUMBER 5S50I000287

N.P.D.E.S.

STORM WATER

POLLUTION PREVENTION PLAN

Prepared for:

SOLID WASTE ENTERPRISE

STANISLAUS COUNTY

DEPARTMENT OF PUBLIC WORKS

EFFECTIVE DATE

June 2013

Prepared by:

TETRA TECH BAS

1360 Valley Vista Drive
Diamond Bar, California 91765
(909) 860-7777

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Appendix C Permits (Monitoring and Reporting Program)

I. INTRODUCTION

Pursuant to Water Quality Order No. 97-03-DWQ (adopted April 17, 1997), the following Storm Water Monitoring and Reporting Program for the Geer Road Landfill has been prepared.

The Geer Road Landfill is located approximately ten miles southeast of the City of Modesto in Stanislaus County (Plate 1). The landfill was in operation from the 1970's until July, 1990. During this time, the landfill accepted predominantly municipal waste. The landfill was operated by Stanislaus County and closure activities at the landfill were initiated in July, 1990.

The site occupies 167.835 acres within a meander bend the Tuolumne River and comprises Assessor's Parcel Nos. 9-2909, 9-29-12 and 18-03-13. The landfill is situated in the southeast corner of Section 34, T3S, R10E, and the northeast corner of Section 3, T4S, R10E, M.D.B.&M., and is found on the USGS 7.5 minute quadrangle maps entitled "Denair" and "Waterford".

The Geer Road Landfill currently operates under several permits. Copies of the permits are located in Appendix "C".

This report is organized by first stating the information **required by Water Quality Order No. 97-03-DWQ in BOLD text** and the appropriate response in standard text. This document has been prepared so that all required information is placed in this document.

This report will be reviewed and updated (as required), prior to July 1 of each year by Landfill Manager.

I. IMPLEMENTATION SCHEDULE

The site has been implementing the Industrial General Permit since 1992. Stanislaus County filed a "Notice of Intent for General Permit to Discharge Storm Water Associated with Industrial Activity" for the Geer Road Landfill with the State Water Resources Control Board on January 13, 1992. A copy of the Notice of Intent is located in Appendix "A" along with a copy of Water Quality Order No. 97-03-DWQ.

II. OBJECTIVES

The objectives of the SWPPP are to **(a) to identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility; and (b) to identify and implement site specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges.**

III. PLANNING AND ORGANIZATION

a. Pollution Prevention Team

The SWPPP shall identify a specific individual or individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all monitoring program activities required in Section B of this General Permit.

The SWPPP shall clearly identify the General Permit related responsibilities, duties, and activities of each team member. For small facilities, storm water pollution prevention teams may consist of one individual where appropriate.

Gerry Garcia, Landfill Manager III – SWPPP Implementation, notification of when revisions are needed, and monitoring.

George Angusich, Manager I – SWPPP Implementation, notification of when revisions are needed, and monitoring

Gabriel Avila, Environmental Tech – BMP Inspector/Stormwater Observations

Marco Valadez, Environmental Tech - BMP Inspector/Stormwater Observations

b. Review Other Requirements and Existing Facility Plans

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. Facility operators should review all local, State, and Federal requirements that impact, complement, or are consistent with the requirements of this General Permit. Facility operators should identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of this General Permit. As examples, facility operators whose facilities are subject to Federal Spill Prevention Control and Countermeasures' requirements should already have instituted a plan to control spills of certain hazardous materials. Similarly, facility operators whose facilities are subject to air quality related permits and regulations may already have evaluated industrial activities that generate dust or particulates.

- Monitoring and Reporting Program No. R5-2011-0022 (Included in Appendix C).
- Post-Closure Maintenance Plan.
- County Basin Plan.

IV. SITE MAP

The SWPPP shall include a site map. The site map shall be provided on an 8-½ x 11 inch or larger sheet and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps..

All maps showing the following required information are in Appendix "B".

i. Facility boundaries

ii. An Outline of the storm water drainage areas for each storm water discharge point;

iii. Portions of the drainage area impacted by run-on from surrounding areas

iv. Direction of flow of each drainage area

v. On-site surface water locations

vi. Areas of existing and potential soil erosion

vii. Nearby water bodies and municipal storm drain inlets where the facility's storm water discharges and authorized non-storm water discharges may be received.

viii. Location of stormwater collection and conveyance system;

ix. Areas of pollutant contact, actual and potential;

x. Location of existing storm water structural control measures;

xi. Impervious areas (paved areas, buildings, covered storage areas, or other roofed structures)

xii. Locations where materials are directly exposed to precipitation and locations where significant spills or leaks have occurred.

xiii. Areas of industrial activity. Vehicle service areas, storage areas, storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, or other areas of industrial activity which are potential pollutant sources.

V. LIST OF SIGNIFICANT MATERIALS

All significant materials that had a likelihood of contaminating storm water run-off were stored or on bermed concrete pads or similar pads that prevented co-mingling of any storm water which contacts a significant material with storm water run-off from the site.

During the dry season, all paved areas are swept periodically with a sweeper and water was placed on the paved areas to minimize dust problems.

VI. DESCRIPTION OF POTENTIAL POLLUTANT SOURCES

The SWPPP shall include a narrative description of the facility's industrial activities, as identified in Section A.4.e above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:

a. Narrative

i. Industrial Processes

The Geer Road Landfill is a Class III landfill and, until July, 1990, received only Group 2/Non-hazardous or Group 3/Inert Wastes (see Title 14 CCR Section 17225.31 and Title 23 CCR, Sections 2523 and 2524). The landfill received an average of 715 tons per day of waste. The waste received was covered daily with a minimum of six inches of cover soil. This prevented any surface run-off to contact the waste. During conditions of rain, a wet weather fill area was used. The wet weather fill

area was a pre-determined area used on rainy days. The area was situated close to the paved entrance road to cover soil was stockpiled close to this area prior to the rainy season. During rainy days, the disposal area was kept to a minimum and all sides of the landfill face was bermed to prevent any surface run-off from the waste from co-mingling with the storm water run-off. Contact water was lost to evaporation or collected and used for dust control.

ii. Materials Handling and Storage Areas

Spills in the vehicle fueling and maintenance areas were cleaned immediately and contaminants were properly disposed of. During the dry season, all paved areas were swept periodically with a sweeper and water was placed on the paved areas to minimize dust problems.

Ditches were used to control site run-off. The locations of these ditches are shown on the maps in Appendix "B". All drainage facilities were inspected quarterly and prior to the rainy season, by the Landfill Superintendent. If erosion in the drainage facilities became prevalent, the facilities may have been lined with asphaltic concrete to riprap. At closure, all unlined drainage facilities were seeded to establish a dense grass cover that would minimize any erosion.

The landfill has a retention pond located in the southerly corner of the facility. All of the storm water run-off is routed to the retention pond (S-1), and eventually enters the Tuolumne River.

The estimated size of the closed landfill is 167 acres. The estimated percentage of the site acreage which is impervious is twenty percent. The impervious areas include the access road, scalehouse, scales, concrete berm pads and the temporary chip seal test area.

iii. Dust and Particulate Generating Activities

Landfill maintenance grading activities may generate significant quantities of dust or particulates. In order to reduce the likelihood of generating the dust and particulates, a water truck is used during grading activities. The water truck sprays water in areas where dust is likely to be generated. Landfill post-closure operations are also modified if dust control becomes a problem (i.e., on windy days).

iv. Significant Spills and Leaks

No significant spills or leaks of toxic or hazardous pollutants to storm water have occurred since November 19, 1988.

v. Non-Storm Water Discharges

Storm water analysis performed on samples taken June 14, 1993, are included. Monitoring and Reporting Program No. 89-205 (all operating permits are in Appendix "C") issued by the California Regional Water Quality Control Board, Central Valley Region, requires the landfill to monitor surface run-off for potential pollutants during the first significant storm event. Past annual and quarterly reports conducted by J. H. Kleinfelder, Inc., during landfill operations, have shown the down stream water quality to exceed the upstream water quality solely with a functioning retention basin. The landfill operations have ended. As a result of these activities, testing above and below the point of discharge to the Tuolumne River has ceased.

vi. Soil Erosion

The site is a closed landfill. Soil erosion may occur on any unpaved area. The site is periodically inspected for vegative cover to ensure the soil is stabilized. Where differential settlement occurs that impacts drainage or erosion potential on unpaved areas, the site is regarded to promote positive drainage, followed by seeding to stabilize the graded area.

b. Industrial Activities Summary

Area	Activity	Pollutant Source	Pollutant	Best Management Practices
Landfill Gas Condensate	Landfill Gas Condensate Storage	Landfill Gas Condensate	VOCs	Inspect periodically and conduct maintenance of the tank periodically. Secondary Containment of the tank. Tank on a paved surface. Train employees on inspection, repair techniques.
Unpaved areas	Maintenance Grading	Soil Erosion	Soil (TDS, TSS)	Vegetation, Fiber rolls, jute mat, gravel bags, berms, check dams. Inspect unpaved areas, BMPs, and drainage structures regularly to detect problems early. Train employees on inspection, repair techniques.

VII. ASSESSMENT OF POTENTIAL POLLUTANT SOURCES

VIII. STORM WATER BEST MANAGEMENT PRACTICES

a. Non-Structural BMPs

i. Good Housekeeping

Good housekeeping required the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm water conveyance system.

The Landfill Superintendent will be responsible for good housekeeping throughout the year. During the pre-rainy season inspection, Procedure No. 6, the Landfill Superintendent will insure all material handling areas are properly cleaned. Quarterly inspections of material handling areas will also be completed.

ii. Preventative Maintenance

Preventative maintenance involves inspection and maintenance of storm conveyance system devices (i.e., oil/water separators, catch basins, etc.) and inspection and testing of plan equipment and systems that could fail and result in discharges of pollutants to storm water.

The Landfill Superintendent will be required to inspect the storm water conveyance system and other storm water structures pursuant to the post-closure maintenance plan. Any required maintenance shall be so noted on the investigation report along with the date the maintenance was completed.

iii. Spill Response

Identification of areas where significant materials can spill into or otherwise enter the storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, clean-up equipment and procedures should be identified, as appropriate. Internal reporting procedures for spills of significant materials shall be established.

Due to the nature of past landfill operations, any portion of the landfill may be exposed to a significant material spill. The Hazardous Waste Exclusion and Load Check Program addresses action required for a Hazardous Waste Incident. This procedure will also be used if it is determined that a significant material has been spilled which may impact storm water quality.

vi. Material Handling and Storage

There are no significant materials stored onsite as it is a closed landfill. Any materials that may contribute to pollution are kept in covered areas to prevent rainwater from contacting the materials. In the event of a spill, dry clean up procedures are immediately implemented to prevent storm water pollution.

v. Employee Training

Employee training programs shall inform all personnel responsible for implementing the SWPPP. Training should address spill response, good housekeeping and material management practices. Periodic dates for training should be identified.

This Storm Water Pollution Prevention Plan in conjunction with the Landfill Administration Procedures Manual shall be used as the training manual for spill response, good housekeeping and material management practices. Employee training involving storm water pollution prevention shall be presented to all landfill personnel prior to the rainy season (but not later than October 1) and at one other time during the calendar year. The Landfill Superintendent will conduct the meeting and meeting attendance sheets shall be signed and kept on file. Questions regarding storm water pollution prevention shall be directed to the Landfill Manager.

vi. Waste Handling/Recycling

There are limited amounts of waste generated at the site. Trash cans for employees are located indoors in covered/roofed structures. Separate containers are provided for recyclables. Outdoor waste containers are covered. Waste is emptied from waste containers on a weekly basis at a minimum.

vii. Recordkeeping and Internal Reporting

Staff conducts periodic inspections using an inspection checklist. Inspection records are retained for five (5) years.

viii. Erosion Control and Site Stabilization

Quarterly inspections (pursuant to Solid Waste Procedure No. 6) of the storm water conveyance system (more frequent inspections may occur during the rainy season) by the Landfill Superintendent shall determine if erosion of the storm water conveyance system is apparent. If erosion is considerable, the following actions may be implemented:

- Reconstruct the eroded portion of the conveyance system.
- Place riprap in the conveyance system to reduce erosion.
- Pave the conveyance system with asphaltic concrete.

ix. Inspections

All inspections shall be done by trained personnel. A tracking or follow-up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspection and maintenance activities shall be documented and recorded. Inspection records shall be retained for five (5) years.

All storm water conveyance inspections shall be conducted as per the post-closure maintenance plan and in accordance with Section 5b of the Monitoring and Reporting Program (included in Appendix C of this document). Non-stormwater inspections are conducted quarterly. During the wet season, site inspections are conducted monthly. All inspections will be done by, or under the supervision of, the Landfill Superintendent. Questions regarding inspections shall be directed to the Landfill Manager.

x. Quality Assurance

The SWPPP is implemented by trained staff. Staff fills out inspection forms for the site. Supervisory staff previews the inspection forms to determine any potential areas of non-compliance.

b. Structural BMPs

i. Overhead Coverage

Fueling and maintenance areas are covered. Outdoor trash receptacles are covered.

ii. Retention Ponds

The landfill has a retention pond at the southwest corner to retain all storm water from the landfill to deposit solids before discharge to the Tuolumne River.

Storm Pond S-1 water is used for dust control.

iii. Control Devices

The Landfill Enterprise continually seeks methods to reduce pollutants in storm water. Storm water management practices will be evaluated yearly by the Landfill Administration to determine further practices which will reduce pollutants in the storm water from the Fink Road Landfill.

Other repairs or modifications to the storm water system may be required as determined by the Landfill Administration.

iv. Secondary Containment Structures

Secondary containment is located at the landfill gas plant (the condensate tank is a dual wall tank above a paved surface) and the Ground Water Extraction and Treatment System Plant.

v. Treatment

Sediment is removed before discharge from the sediment pond as described in Section X.b.ii.

IX. ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION

A comprehensive site evaluation is conducted annually for the period of July 1 – June 30. Evaluations include visual observation records, inspection records, and sampling and analysis results.

This SWPPP will be reviewed and updated (as required), prior to July 1 of each year by Landfill Manager, as necessary.

X. SWPPP GENERAL REQUIREMENTS

The SWPPP shall be retained on site and made available upon request of a representative of the Regional Water Board and/or local storm water management agency which receives the storm water discharges.

THIS STORM WATER POLLUTION PREVENTION PLAN SHALL BE INSPECTED ANNUALLY BY THE LANDFILL MANAGER FOR CONFORMANCE TO THE REQUIREMENTS OF STATE WATER RESOURCES CONTROL BOARD QUALITY ORDER NO. 97-03-DWQ. PLAN MODIFICATIONS WILL BE ADDED AS NEEDED. ALL MODIFICATIONS WILL STATE THE REASON FOR THE MODIFICATION, THE DATE THE MODIFICATION WAS ADDED TO THIS PLAN AND THE PROPER CERTIFICATION.

THIS PLAN SHALL BE AVAILABLE FOR PUBLIC REVIEW PURSUANT TO SECTION 308(B) OF THE CLEAN WATER ACT.

CERTIFICATION

"I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

BY: _____

DATE: 6/28/13

State of California
State Water Resources Control Board

NOTICE OF INTENT

TO COMPLY WITH THE TERMS OF THE
GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH **INDUSTRIAL ACTIVITY** (WQ ORDER No. 97-03-DWQ)
(*Excluding Construction Activities*)

SECTION I. NOI STATUS (please check only one box)

A. [ ] New Permittee B. [ ] Change of Information WDID # 5S50I000287

SECTION II. FACILITY OPERATOR INFORMATION (See instructions)

A. NAME: Stanislaus Cnty Dept of Enviro Phone: 209-525-6768

Mailing Address: 3800 Cornucopia Way Ste C

City: Modesto State: CA Zip Code: 95358

Contact Person: Jami Aggers

B. OPERATOR TYPE:
(check one) 1.[ ] Private Individual 2.[ ]Business 3.[ ]Municipal 4.[ ]State 5.[ ]Federal 6.[ ]Other

SECTION III. FACILITY SITE INFORMATION

A. FACILITY NAME Stanislaus Geer Phone: 209-837-4716

Facility Location: 750 Geer Rd County: Stanislaus

City: Modesto State: CA Zip Code: 95357

B. MAILING ADDRESS: 750 Geer Rd

City: Modesto State: CA Zip Code: 95357

Contact Person: Gerry Garcia

C. FACILITY INFORMATION (check one)
Total Size of Site: 160 Acres [ ] Sq. Ft. [ ]

Percent of Site Impervious (*including rooftops*) %

D. SIC CODE(S) OF REGULATED ACTIVITY:

1. 4953
2.
3.

FOR STATE USE ONLY:

SECTION IV. ADDRESS FOR CORRESPONDENCE

|_| Facility Operator Mailing Address (Section II) |_| Facility Mailing Address (Section III, B.) |_| Both

SECTION V. BILLING ADDRESS INFORMATION

SEND BILL TO: [ ]Facility Operator Mailing Address (Section II) [ ]Facility Mailing Address (Section III, B.) [ ]Other (*enter information below*)

Name: Stanislaus Cnty	Phone: 209-837-4816
Mailing Address: PO Box 86	
City: Crowslanding	State: CA / Zip Code: 95313
Contact Person: Gerry Garcia	

SECTION VI. RECEIVING WATER INFORMATION

Your facility's storm water discharges flow: (*check one*) [ ] Directly OR [ ] Indirectly to waters of the United States.

Name of receiving water: Tuolumne River
(river, lake, stream, ocean, etc.)

SECTION VII. IMPLEMENTATION OF PERMIT REQUIREMENTS

A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (*check one*)
[ ] A SWPPP has been prepared for this facility and is available for review.
[ ] A SWPPP will be prepared and ready for review by (enter date): _____.

B. MONITORING PROGRAM (check one)
[ ] A Monitoring Program has been prepared for this facility and is available for review.
[ ] A Monitoring Program will be prepared and ready for review by (enter date): _____.

C. PERMIT COMPLIANCE RESPONSIBILITY
Has a person been assigned responsibility for:

1. Inspecting the facility throughout the year to identify any potential pollution problems? ....____YES ____NO
2. Collecting storm water samples and having them analyzed?....____YES ____NO
3. Preparing and submitting an annual report by July 1 of each year? ....____YES ____NO
4. Eliminating discharges other than storm water (*such as equipment or vehicle wash-water*) into the storm drain?....____YES ____NO

SECTION VIII. SITE MAP

I HAVE ENCLOSED A SITE MAP YES[ ] A new NOI submitted without a site map will be rejected.

SECTION IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that I have read the entire General Permit, including all attachments, and agree to comply with and be bound by all of the provisions, requirements, and prohibitions of the permit, including the development and implementation of a Storm Water Pollution Pervention Plan and a Monitoring Program Plan will be complied with."

Printed Name: _____

Signature: _____ Date _____

Title: _____

Approved Date: March 08, 1992

Jami Aggers
Stanislaus Cnty Dept of Environmental Resources
3800 Cornucopia Way Ste C
Modesto CA 95358

RECEIPT OF YOUR NOTICE OF INTENT (NOI)

The State Water Resources Control Board (State Water Board) has received and processed your NOI to comply with the terms of the General Permit to Discharger Storm Water Associated with Industrial Activity. Accordingly, you are required to comply with the permit requirements.

The Waste Discharger Identification (WDID) number is: **5S50I000287.** Please use this number in any future communication regarding this permit.

	FACILITY DESCRIPTION
OPERATOR:	Stanislaus Cnty Dept of Environmental Resources
FACILITY INFORMATION:	Stanislaus Geer 750 Geer Rd Modesto
COUNTY:	Stanislaus
SIC/NAIC CODES:	4953

When the operator changes (i.e. the business was bought or transferred), a new NOI, site map, and fee must be submitted by the new operator. As the previous operator, you are required to submit a Notice of Termination (NOT) to the local Regional Water Board stating you no longer own or operate the facility and coverage under the General Permit is not required. Unless notified, you will continue and are responsible to pay the annual fee invoiced each October.

If you have any questions regarding permit requirements, please contact your Regional Water Board at 916-464-3291 . Please visit the storm water web site at http://www.waterboards.ca.gov/water_issues/programs/stormwater/ to obtain an NOT and other storm water related information and forms.

Sincerely,

Storm Water Section
Division of Water Quality

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

To: STORM WATER DISCHARGER

SUBJECT: CHECKLIST FOR SUBMITTING A NOTICE OF INTENT

In order for the State Water Resources Control Board to expeditiously process your Notice of Intent (NOI), the following items must be submitted to either of the addresses indicated below:

1._____ NOI (please keep a copy for your files) with all applicable sections completed and original signature of the facility operator;

2._____ Check made out to the "State Water Resources Control Board" with the appropriate fee. The total annual fee is $**1359.00.**

3. _____ Site Map of the facility (see NOI instructions). DO NOT SEND BLUEPRINTS

U.S. Postal Service Address

State Water Resources Control Board
Division of Water Quality
Attn: Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977

Overnight Mailing Address

State Water Resources Control Board
Division Of Water Quality
Attn: Storm Water, 15th Floor
1001 I Street
Sacramento, CA 95814

NOIs are processed in the order they are received. A NOI receipt letter will be mailed to the facility operator within approximately two weeks. Incomplete NOI submittals will be returned to the facility operator within the same timeframe and will specify the reason(s) for return. If you need a receipt letter by a specific date (for example, to provide to a local agency), we advise that you submit your NOI thirty (30) days prior to the date the receipt letter is needed.

Please do not call us to verify your NOI status. A copy of your NOI receipt letter will be available on our web page within twenty-four (24) hours of processing. Go to https://smarts.waterboards.ca.gov and click on View SW data. If you have any questions regarding this matter, please contact us at 1-866-563-3107 or stormwater@waterboards.ca.gov

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT NO. CAS000001 (GENERAL PERMIT)

WASTE DISCHARGE REQUIREMENTS (WDRS)
FOR
DISCHARGES OF STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITIES
EXCLUDING CONSTRUCTION ACTIVITIES

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FOR

STATE WATER RESOURCES CONTROL BOARD (STATE WATER BOARD)
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FOR
DISCHARGES OF STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITIES
EXCLUDING CONSTRUCTION ACTIVITIES

BACKGROUND

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States from any point source is effectively prohibited unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) that establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (U.S. EPA) published final regulations that establish application requirements for storm water permits. The regulations require that storm water associated with industrial activity (storm water) that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

U.S. EPA developed a four-tier permit issuance strategy for storm water discharges associated with industrial activity as follows:

Tier I, Baseline Permitting--One or more general permits will be developed to initially cover the majority of storm water discharges associated with industrial activity.

Tier II, Watershed Permitting--Facilities within watersheds shown to be adversely impacted by storm water discharges associated with industrial activity will be targeted for individual or watershed-specific general permits.

Tier III, Industry-Specific Permitting--Specific industry categories will be targeted for individual or Industry-specific general permits.

Tier IV, Facility-Specific Permitting--A variety of factors will be used to target specific facilities for individual permits.

The regulations allow authorized states to issue general permits or individual permits to regulate storm water discharges.

Consistent with Tier I, Baseline Permitting, of the U.S. EPA permitting strategy, the State Water Board issued a statewide General Permit on November 19, 1991 that applied to all storm water discharges requiring a permit except construction activity. The monitoring requirements of this General Permit were amended September 17, 1992. A separate statewide general permit has been issued for construction activity.

To obtain authorization for continued and future storm water discharge under this General Permit, each facility operator must submit a Notice of Intent (NOI). This approach is consistent with the four-tier permitting strategy described in Federal regulations, i.e., Tier 1, Baseline Permitting. Tier 1, Baseline Permitting, enables the State to begin reducing pollutants in industrial storm water in the most efficient manner possible.

This General Permit generally requires facility operators to:

1. Eliminate unauthorized non-storm water discharges;
2. Develop and implement a storm water pollution prevention plan (SWPPP); and
3. Perform monitoring of storm water discharges and authorized non-storm water discharges.

TYPES OF STORM WATER DISCHARGES COVERED BY THIS GENERAL PERMIT

This General Permit is intended to cover all new or existing storm water discharges and authorized non-storm water discharges from facilities required by Federal regulations to obtain a permit including those (1) facilities previously covered by the San Francisco Bay Regional Water Quality Control Board Order No. 92-011 (as amended by Order No. 92-116), (2) facilities designated by the Regional Water Quality Control Boards (Regional Water Boards), (3) facilities whose operators seek coverage under this General Permit, (4) and facilities required by future U.S. EPA storm water regulations.

The General Permit is intended to cover all facilities described in Attachment 1, whether the facility is primary or is auxiliary to the facility operator's function. For example, although a school district's primary function is education, a facility that it operates for vehicle maintenance of school buses is a transportation facility that is covered by this General Permit.

The definition of "storm water associated with industrial activity" is provided in Attachment 4, Definition 9, of this General Permit. Facilities that discharge storm water associated with industrial activity requiring a General Permit are listed by category in 40 Code of Federal Regulations (CFR) Section 122.26(b)(14) (Federal Register, Volume 55 on

Pages 48065-66) and in Attachment 1 of this General Permit. The facilities can be publicly or privately owned. General descriptions of these categories are:

1. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR Subchapter N);

2. Manufacturing facilities;

3. Mining/oil and gas facilities;

4. Hazardous waste treatment, storage, or disposal facilities;

5. Landfills, land application sites, and open dumps that receive industrial waste;

6. Recycling facilities such as metal scrap yards, battery reclaimers, salvage yards, automobile yards;

7. Steam electric generating facilities;

8. Transportation facilities that conduct any type of vehicle maintenance such as fueling, cleaning, repairing, etc.;

9. Sewage treatment plants;

10. Construction activity (covered by a separate general permit); and

11. Certain facilities (often referred to as "light industry") where industrial materials, equipment, or activities are exposed to storm water.

For the most part, these facilities are identified in the Federal regulations by a Standard Industrial Classification (SIC).

<u>Category 1 Dischargers</u>

The following categories of facilities currently have storm water effluent limitation guidelines for at least one of their subcategories. They are cement manufacturing (40 CFR Part 411); feedlots (40 CFR Part 412); fertilizer manufacturing (40 CFR Part 418); petroleum refining (40 CFR Part 419); phosphate manufacturing (40 CFR Part 422); steam electric power generation (40 CFR Part 423); coal mining (40 CFR Part 434); mineral mining and processing (40 CFR Part 436); ore mining and dressing (40 CFR Part 440); and asphalt emulsion (40 CFR Part 443). A facility operator whose facility falls into one of these general categories should examine the effluent guidelines to determine if the facility is categorized in one of the subcategories that have storm water effluent guidelines. If

a facility is classified as one of those subcategories, that facility is subject to the standards listed in the CFR for that category and is subject to this General Permit. This General Permit contains additional requirements (see Section B.6.) for facilities with storm water effluent limitations guidelines.

Category 5 Dischargers

Inactive or closed landfills, land application sites, and open dumps that have received industrial wastes (Category 5) may be subject to this General Permit unless the storm water discharges from the sites are already regulated by an NPDES permit issued by the appropriate Regional Water Board. Facility operators of closed landfills that are regulated by waste discharge requirements (WDRs) may be required to comply with this General Permit. In some cases, it may be appropriate for closed landfills to be covered by the State Water Board's General Permit during closure activities. The Construction Activities General Permit should cover new landfill construction. Facility operators should contact their Regional Water Board to determine the appropriate permit coverage.

Category 10 Dischargers

Facility operators of Category 10 (light industry) facilities are not subject to this General Permit if they can certify that the following minimum conditions at their facilities are met:

1. All prohibited non-storm water discharges have been eliminated or otherwise permitted.

2. All areas of past exposure have been inspected and cleaned, as appropriate.

3. All materials related to industrial activity (including waste materials) are not exposed to storm water or authorized non-storm water discharges.

4. All industrial activities and industrial equipment are not exposed to storm water or authorized non-storm water discharges.

5. There is no exposure of materials associated with industrial activity through other direct or indirect pathways such as particulates from stacks and exhaust systems.

6. There is periodic re-evaluation of the facility to ensure Conditions 1, 3, 4, and 5 are continuously met.

Currently, facility operators that can certify that the above conditions are met are not required to notify the State Water

Board or Regional Water Board. These facility operators are advised to retain such certification documentation on site.

The Ninth Circuit Court of Appeals invalidated the exemption granted by U.S. EPA for storm water discharges from facilities in Category 11 that do not have exposure and remanded the regulation to U.S. EPA for further action. The State Water Board, at this time, is not requiring storm water discharges from facilities in Category 11 that do not have exposure to be covered by this General Permit. Instead, the State Water Board will await future U.S. EPA or court action clarifying the types of storm water discharges that must be permitted. If necessary, the State Water Board will reopen the General Permit to accommodate such a clarification.

Section 1068 of the Intermodal Surface Transportation Act of 1991 exempts municipal agencies serving populations of less than 100,000 from Phase I permit requirements for most facilities they operate (uncontrolled sanitary landfills, power plants, and airports are still required to be permitted in Phase I). Phase II of the Permit Program scheduled to begin August 7, 2001 will cover the facilities that are exempt from Phase I permit requirements.

TYPES OF DISCHARGES NOT COVERED BY THIS GENERAL PERMIT

1. CONSTRUCTION ACTIVITY: Discharges from construction activity of five acres or more, including clearing, grading, and excavation. A separate general permit was adopted on August 20, 1992 for this industrial category.

2. FACILITIES WHICH HAVE NPDES PERMITS CONTAINING STORM WATER PROVISIONS: Some storm water discharges may be regulated by other individual or general NPDES permits issued by the State Water Board or the Regional Water Boards. This General Permit shall not regulate these discharges. When the individual or general NPDES permits for such discharges expire, the State Water Board or Regional Water Board may authorize coverage under this General Permit or another general NPDES permit, or may issue a new individual NPDES permit consistent with the Federal and State storm water regulations. Interested parties may petition the State Water Board or appropriate Regional Water Board to issue individual or General NPDES Permits. General Permits may be issued for a particular industrial group or watershed area.

3. FACILITIES DETERMINED INELIGIBLE BY REGIONAL WATER BOARDS: Regional Water Boards may determine that discharges from a facility or groups of facilities, otherwise eligible for coverage under this General Permit, have potential water quality impacts that may not be appropriately addressed by

this General Permit. In such cases, a Regional Water Board may require such discharges to be covered by an individual or general NPDES permit. Interested persons may petition the appropriate Regional Water Board to issue individual NPDES permits. The applicability of this General Permit to such discharges will be terminated upon adoption of an individual NPDES permit or a different general NPDES permit.

4. FACILITIES WHICH DO NOT DISCHARGE STORM WATER TO WATERS OF THE UNITED STATES: The discharges from the following facilities are not required to be permitted:

   a. FACILITIES THAT DISCHARGE STORM WATER TO MUNICIPAL SANITARY SEWER SYSTEMS: Facilities that discharge storm water to municipal sanitary sewer systems or combined sewer systems are not required by Federal regulations to be covered by an NPDES storm water permit or to submit an NOI to comply with this General Permit. (It should be noted that many municipalities have sewer use ordinances that prohibit storm drain connections to their sanitary sewers.)

   b. FACILITIES THAT DO NOT DISCHARGE STORM WATER TO SURFACE WATERS OR SEPARATE STORM SEWERS: Storm water that is captured and treated and/or disposed of with the facility's NPDES permitted process wastewater and storm water that is disposed of to evaporation ponds, percolation ponds, or combined sewer systems are not required to obtain a storm water permit. To avoid liability, the facility operator should be certain that no discharge of storm water to surface waters would occur under any circumstances.

5. MOST SILVICULTURAL ACTIVITIES: Storm water discharges from most silvicultural activities such as thinning, harvesting operations, surface drainage, or road construction and maintenance are exempt from this permit. Log sorting or log storage facilities that fall within SIC 2411 are required to be permitted.

6. MINING AND OIL AND GAS FACILITIES: Oil and gas facilities that have not released storm water resulting in a discharge of a reportable quantity (RQ) for which notification is or was required pursuant to 40 CFR Parts 110, 117, and 302 at any time after November 19, 1987 are not required to be permitted unless the industrial storm water discharge contributed to a violation of a water quality standard. Mining facilities that discharge storm water that does not come into contact with any overburden, raw materials, intermediate product, finished product, by-product, or waste product located at the facility are not required to be permitted. These facilities must be permitted if they have a new release of storm water resulting in a discharge of an RQ.

7. FACILITIES ON INDIAN LANDS: the U.S. EPA will regulate Discharges from facilities on Indian lands.

NOTIFICATION REQUIREMENTS

Storm water discharges from facilities described in the section titled "Types of Storm Water Discharges Covered by This General Permit" must be covered by an NPDES permit. An NOI must be submitted by the facility operator for each individual facility to obtain coverage. Certification of the NOI signifies that the facility operator intends to comply with the provisions of the General Permit. Facility operators who have filed NOIs for the State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-011 (as amended by Order No. 92-116) will be sent an abbreviated NOI soon after adopting this General Permit that must be completed and returned within 45 days of receipt. Where operations have discontinued and significant materials remain on site (such as at closed landfills), the landowner may be responsible for filing an NOI and complying with this General Permit. A landowner may also file an NOI for a facility if the landowner, rather than the facility operator(s), is responsible for compliance with this General Permit.

A facility operator that does not submit an NOI for a facility must submit an application for an individual NPDES permit. U.S. EPA's regulations [40 CFR 122.21 (a)] exclude facility operators covered by a general permit from requirements to submit an individual permit application unless required by the Regional Water Board. The NOI requirements of this General Permit are intended to establish a mechanism which can be used to establish a clear accounting of the number of facility operators complying with the General Permit, their identities, the nature of operations at the facilities, and location.

All facility operators filing an NOI after the adoption of this General Permit must comply with this General Permit. Existing facility operators who have filed NOIs prior to the adoption of this General Permit shall continue to complete the requirements of the previous General Permit through June 30, 1997 including submitting annual reports to the Regional Water Boards by July 1, 1997. Group Leaders are required to submit a 1996-97 Group Evaluation Report by August 1, 1997.

DESCRIPTION OF GENERAL PERMIT CONDITIONS

Prohibitions

This General Permit authorizes storm water and authorized non-storm water discharges from facilities that are required to be covered by a storm water permit. This General Permit prohibits discharges of material other than storm water (non-storm water discharges) that are not authorized by the General Permit and discharges containing hazardous substances in storm water in excess of reportable quantities established at 40 CFR 117.3 and 40 CFR 302.4. Authorized non-storm water discharges are addressed in the Special Conditions of the General Permit.

Effluent Limitations

NPDES Permits for storm water discharges must meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require control of pollutant discharges using best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) to prevent and reduce pollutants and any more stringent controls necessary to meet water quality standards.

U.S. EPA regulations (40 CFR Subchapter N) establish effluent limitation guidelines for storm water discharges from facilities in ten industrial categories. For these facilities, compliance with the effluent limitation guidelines constitutes compliance with BAT and BCT for the specified pollutants and must be met to comply with this General Permit.

For storm water discharges from facilities not among the ten industrial categories listed in 40 CFR Subchapter N, it is not feasible at this time to establish numeric effluent limitations. The reasons why establishment of numeric effluent limitations is not feasible are discussed in detail in State Water Board Orders No. WQ 91-03 and WQ 91-04. Therefore, this General Permit allows the facility operator to implement best management practices (BMPs) to comply with the requirements of this General Permit. This approach is consistent with the U.S. EPA's August 1, 1996 "Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits".

Receiving Water Limitations

Storm water discharges shall not cause or contribute to a violation of an applicable water quality standard. The General Permit requires facility operators to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges through the development and implementation of BMPs which constitutes compliance with BAT and BCT and, in most cases, compliance with water quality standards. If receiving water quality standards are exceeded, facility operators are required to submit a written report providing additional BMPs that will be implemented to achieve water quality standards.

Storm Water Pollution Prevention Plans (SWPPPs)

All facility operators must prepare, retain on site, and implement an SWPPP. The SWPPP has two major objectives: (1) to help identify the sources of pollution that affect the quality of industrial storm water discharges and authorized non-storm water discharges, and (2) to describe and ensure the implementation of BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized non-storm water discharges.

This General Permit requires development and implementation of an SWPPP emphasizing BMPs. This approach provides the flexibility necessary to establish appropriate BMPs for different types of industrial activities and pollutant sources. As this General Permit covers vastly different types of facilities, the State Water Board recognizes that there is no single best way of developing or organizing an SWPPP. The SWPPP requirements contain the essential elements that all facility operators must consider and address in the SWPPP. This General Permit's SWPPP requirements are more detailed than the previous general permit's SWPPP requirements, and the suggested order of the SWPPP elements have been rearranged (1) to correspond more closely with other storm water permits in effect throughout the country, and (2) to generally follow a more logical path. Facility operators that have already developed and implemented SWPPPs under previous general permits are required to review the SWPPP's requirements contained in this General Permit and then review their existing SWPPP for adequacy. If the existing SWPPP adequately identifies and assesses all potential sources of pollutants and describes the appropriate BMPs necessary to reduce or prevent pollutants, the facility operator is not required to revise the existing SWPPP.

One of the major elements of the SWPPP is the elimination of unauthorized non-storm water discharges to the facility's storm drain system. Unauthorized non-storm water discharges can be generated from a wide variety of potential pollutant sources. They include waters from the rinsing or washing of vehicles, equipment, buildings, or pavement; materials that have been improperly disposed of or dumped, and spilled; or leaked materials. Unauthorized non-storm water discharges can contribute a significant pollutant load to receiving waters. Measures to control spills, leakage, and dumping can often be addressed through BMPs. Unauthorized non-storm water discharges may enter the storm drain system via conveyances such as floor drains. All conveyances should be evaluated to determine whether they convey unauthorized non-storm water discharges to the storm drain system. Unauthorized non-storm water discharges (even when commingled with storm water) shall be eliminated or covered by a separate NPDES Permit.

There are many non-storm water discharges that, under certain conditions, should not contain pollutants associated with

industrial activity (i.e., air conditioning condensate, potable water line testing, landscaping overflow, etc.). Item D, Special Conditions, provides the conditions where certain listed non-storm water discharges are authorized by this General Permit.

Monitoring Program

The General Permit requires development and implementation of a monitoring program. The objectives of the monitoring program are to (1) demonstrate compliance with the General Permit, (2) aid in the implementation of the SWPPP, and (3) measure the effectiveness of the BMPs in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges.

All facility operators (with the exception of inactive mining operations) are required to:

1. Perform visual observations of storm water discharges and authorized storm water discharges.

2. Collect and analyze samples of storm water discharges. Analysis must include pH, total suspended solids (TSS), total organic carbon (TOC), specific conductance, toxic chemicals, and other pollutants which are likely to be present in storm water discharges in significant quantities, and those parameters listed in Table D of this General Permit. The Table D parameters are those listed in the U.S. EPA Multi-Sector General Permit. Facility operators subject to Federal storm water effluent limitation guidelines in 40 CFR Subchapter N must also sample and analyze for any pollutant specified in the appropriate category of 40 CFR Subchapter N.

Facility operators are not required to collect samples or perform visual observations during adverse climatic conditions. Sample collection and visual observations are required only during scheduled facility operating hours. Visual observations are required only during daylight hours. Facility operators that are unable to collect any of the required samples or visual observations because of the above circumstances must provide documentation to the Regional Water Board in their annual report.

Facility operators may be exempt from performing sampling and analysis if they: (1) do not have areas of industrial activity exposed to storm water, (2) receive an exemption from a local agency which has jurisdiction over the storm sewer system, or (3) receive an exemption from the appropriate Regional Water Board. Facility operators must always perform sampling and analysis for any pollutant specified in storm water effluent limitation guidelines.

This General Permit contains a new procedure where facility operators, if they meet certain minimum conditions, may certify compliance with the General Permit and reduce the number of

sampling events required to be sampled for the remaining term of the General Permit. Each Regional Water Board may develop instructions, guidance, and checklists to assist facility operators to complete sampling reduction requests.

Local agencies that wish to provide sampling and analysis exemptions or reductions to facility operators within their jurisdiction shall develop a certification program that clearly indicates the certification procedures and criteria used by the local agency. At a minimum, these programs should include site inspections, a review of the facility operator's SWPPP, and a review of other records such as monitoring data, receiving water data, etc. The certification program shall be approved by the local Regional Water Board before implementation.

Alternative Monitoring

Facility operators are required to develop a facility-specific monitoring program that satisfies both the minimum monitoring program requirements and the objectives of the monitoring program. Some facility operators have indicated that cost-effective alternative monitoring programs can be developed that provide equivalent or more accurate indicators of pollutants and/or BMP performance than a monitoring program based upon the minimum monitoring program requirements. An example of such an alternative monitoring program would be one that identifies sample locations at or near pollutant sources rather than sampling an entire drainage area where the storm water discharge has been diluted with storm water from areas with little or no industrial activity.

The State Water Board does not want to preclude facility operators from developing better, and perhaps more cost-effective, monitoring programs. This General Permit allows facility operators to submit alternative monitoring programs for approval by the Regional Water Board. For individual facilities, these proposals must be facility specific and demonstrate how the alternative monitoring program will result in an equivalent or more accurate indicator of pollutants and/or BMP effectiveness. Facility operators with similar industrial activities may also propose alternative monitoring programs for approval by the Regional Water Boards. These proposals must demonstrate how the alternative monitoring program will result in an equivalent or more accurate indicator of pollutants and/or BMP effectiveness for all of the participating facilities.

Facility operators shall continue to comply with the existing monitoring program requirements until receiving approval by the Regional Water Board.

Group Monitoring

Each facility operator may either perform sampling and analysis individually or participate in a group monitoring program. A group monitoring program may be developed either by a group leader representing a group of similar facilities or by a local agency which holds a storm water permit for a municipal separate storm sewer system for industrial facilities within its jurisdiction. The group leader or local agency responsible for the group monitoring program must schedule all participating facilities to sample two storm events over the life of this General Permit. Facility operators subject to Federal effluent limitations guidelines in 40 CFR Subchapter N must individually sample and analyze for pollutants listed in the appropriate Federal regulations.

Participants within a group may be located within the jurisdiction of more than one Regional Water Board. Multi-Regional Water Board groups must receive the approval of the State Water Board Executive Director (with the concurrence of the appropriate Regional Water Boards).

Each group leader or local agency responsible for group sampling must: (1) provide guidance or training so that the monitoring is done correctly, (2) recommend appropriate BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges from group participants, (3) evaluate and report the monitoring data to the State Water Board and/or the appropriate Regional Water Board(s), and (4) conduct two on-site inspections at each facility over the five year term of this General Permit to evaluate facility compliance and recommend BMPs to achieve compliance with this General Permit. The group leader or local agency may designate, hire, or train inspectors to conduct these inspections that are or are not directly affiliated with the group leader or local agency. It is the group leader's or local agency's responsibility to select inspectors that are capable of evaluating each facility's compliance with the General Permit and can recommend appropriate BMPs. All group monitoring plans are subject to State Water Board and/or Regional Water Board(s) review. Consistent with the four-tier permitting strategy described in the Federal regulations, the Regional Water Board(s) may evaluate the data and results from group monitoring to establish future permitting decisions. As appropriate, the State Water Board and/or the Regional Water Board(s) may terminate or require substantial amendment to the group monitoring plans. The State Water Board and/or the Regional Water Board(s) may terminate a facility's participation in group monitoring or require additional monitoring activities.

Retention of Records

The facility operator is required to retain records of all monitoring information, copies of all reports required by this General Permit, and records of all data used to complete the NOI for a period of five years from the date of measurement, report, or monitoring activity. This period may be extended by the State and/or Regional Water Boards. All records are public documents and must be provided to the Regional Water Boards on request.

Watershed Management

The State and Regional Water Boards are undertaking a focussed effort in watershed management throughout the State. In reissuing this General Permit, the State Water Board recognizes both the evolving nature of watershed management and the long-term desirability of structuring monitoring programs to support the Watershed Management Initiative. Therefore, the amended monitoring and reporting provisions provide flexibility for individual facility operators or groups of facility operators to propose and participate in, subject to Regional Water Board approval, watershed monitoring programs in lieu of some or all of the monitoring requirements contained in this General Permit.

Facility Operator Compliance Responsibilities

This General Permit has been written to encourage individual facility operators to develop their own SWPPP and monitoring programs. Many facility operators, however, choose to obtain compliance assistance either by hiring a consultant on an individual basis or by participating in a group monitoring plan. Regardless of how a facility operator chooses to pursue compliance, it is the facility operator that is responsible for compliance with this General Permit.

The State Water Board recognizes that industrial activities and operating conditions at many facilities change over time. In addition, new and more effective BMPs are being developed by various facility operators and by industrial groups. The SWPPP and monitoring program requirements include various inspections, reviews, and observations all of which recognize, encourage, and mandate an iterative self-evaluation process that is necessary to consistently comply with this General Permit. In general, facility operators that develop and implement SWPPPs that comply with this General Permit should not be penalized when discovering minor violations through this iterative self-evaluation process. The General Permit provides facility operators up to 90 days to revise and implement the SWPPP to correct such violations.

STATE WATER RESOURCES CONTROL BOARD (STATE WATER BOARD)
WATER QUALITY ORDER NO. 97-03-DWQ
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT NO. CAS000001 (GENERAL PERMIT)

WASTE DISCHARGE REQUIREMENTS (WDRS)
FOR
DISCHARGES OF STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITIES
EXCLUDING CONSTRUCTION ACTIVITIES

The State Water Board finds that:

1. Federal regulations for storm water discharges were issued by the U.S. Environmental Protection Agency (U.S. EPA) on November 16, 1990 (40 Code of Federal Regulations [CFR] Parts 122, 123, and 124). The regulations require operators of specific categories of facilities where discharges of storm water associated with industrial activity (storm water) occur to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm discharges.

2. This General Permit shall regulate storm water discharges and authorized non-storm water discharges from specific categories of industrial facilities identified in Attachment 1, storm water discharges and authorized non-storm water discharges from facilities as designated by the Regional Water Quality Control Boards (Regional Water Boards), and storm water discharges and authorized non-storm water discharges from other facilities seeking General Permit coverage. This General Permit may also regulate storm water discharges and authorized non-storm water discharges from facilities as required by U.S. EPA regulations. This General Permit shall regulate storm water discharges and authorized non-storm water discharges previously regulated by San Francisco Bay Regional Water Board Order, No.92-11 (as amended by Order No. 92-116). This General Permit excludes storm water discharges and non-storm water discharges that are regulated by other individual or general NPDES permits, storm water discharges and non-storm water discharges from construction activities, and storm water discharges and non-storm water discharges excluded by the Regional Water Boards for coverage by this General Permit. Attachment 2 contains the addresses and telephone numbers of each Regional Water Board office.

3. To obtain coverage for storm water discharges and authorized non-storm water discharges pursuant to this General Permit, operators of facilities (facility operators) must submit a Notice of Intent (NOI), in accordance with the Attachment 3

instructions, and appropriate annual fee to the State Water Board. This includes facility operators that have participated in U.S. EPA's group application process.

4. This General Permit does not preempt or supersede the authority of local agencies to prohibit, restrict, or control storm water discharges and authorized non-storm water discharges to storm drain systems or other water-courses within their jurisdictions as allowed by State and Federal law.

5. If an individual NPDES permit is issued to a facility operator otherwise subject to this General Permit or an alternative NPDES general permit is subsequently adopted which covers storm water discharges and/or authorized non-storm water discharges regulated by this General Permit, the applicability of this General Permit to such discharges is automatically terminated on the effective date of the individual NPDES permit or the date of approval for coverage under the subsequent NPDES general permit.

6. Effluent limitations and toxic and effluent standards established in Sections 208(b), 301, 302, 303(d), 304, 306, 307, and 403 of the Federal Clean Water Act (CWA), as amended, are applicable to storm water discharges and authorized non-storm water discharges regulated by this General Permit.

7. This action to adopt an NPDES general permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the California Water Code.

8. Federal regulations (40 CFR Subchapter N) establish effluent limitations guidelines for storm water discharges from some facilities in ten industrial categories.

9. For facilities which do not have established effluent limitation guidelines for storm water discharges in 40 CFR Subchapter N, it is not feasible at this time to establish numeric effluent limitations. This is due to the large number of discharges and the complex nature of storm water discharges. This is also consistent with the U.S. EPA's August 1, 1996 "Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits."

10. Facility operators are required to comply with the terms and conditions of this General Permit. Compliance with the terms and conditions of this General Permit constitutes compliance with BAT/BCT requirements and with requirements to achieve water quality standards. This includes the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges.

11. Best Management Practices (BMPs) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges are appropriate where numeric effluent limitations are infeasible, and the implementation of BMPs is adequate to achieve compliance with BAT/BCT and with water quality standards.

12. The State Water Board has adopted a Watershed Management Initiative that encourages watershed management throughout the State. This General Permit recognizes the Watershed Management Initiative by supporting the development of watershed monitoring programs authorized by the Regional Water Boards.

13. Following adoption of this General Permit, the Regional Water Boards shall enforce its provisions.

14. Following public notice in accordance with State and Federal laws and regulations, the State Water Board held a public hearing on November 12, 1996 and heard and considered all comments pertaining to this General Permit. A response to all significant comments has been prepared and is available for public review.

15. This Order is an NPDES General Permit in compliance with Section 402 of the CWA and shall take effect upon adoption by the State Water Board.

16. All terms that are defined in the CWA, U.S. EPA storm water regulations and the Porter-Cologne Water Quality Control Act will have the same definition in this General Permit unless otherwise stated.

IT IS HEREBY ORDERED that all facility operators required to be regulated by this General Permit shall comply with the following:

A. DISCHARGE PROHIBITIONS:

1. Except as allowed in Special Conditions (D.1.) of this General Permit, materials other than storm water (non-storm water discharges) that discharge either directly or indirectly to waters of the United States are prohibited. Prohibited non-storm water discharges must be either eliminated or permitted by a separate NPDES permit.

2. Storm water discharges and authorized non-storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.

B. EFFLUENT LIMITATIONS:

1. Storm water discharges from facilities subject to storm water effluent limitation guidelines in Federal regulations (40 CFR

Subchapter N) shall not exceed the specified effluent limitations.

2. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.

3. Facility operators covered by this General Permit must reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges through implementation of BAT for toxic and non-conventional pollutants and BCT for conventional pollutants. Development and implementation of an SWPPP that complies with the requirements in Section A of the General Permit and that includes BMPs that achieve BAT/BCT constitutes compliance with this requirement.

C. RECEIVING WATER LIMITATIONS:

1. Storm water discharges and authorized non-storm water discharges to any surface or ground water shall not adversely impact human health or the environment.

2. Storm water discharges and authorized non-storm water discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable Regional Water Board's Basin Plan.

3. A facility operator will not be in violation of Receiving Water Limitation C.2. as long as the facility operator has implemented BMPs that achieve BAT/BCT and the following procedure is followed:

   a. The facility operator shall submit a report to the appropriate Regional Water Board that describes the BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report shall include an implementation schedule. The Regional Water Board may require modifications to the report.

   b. Following approval of the report described above by the Regional Water Board, the facility operator shall revise its SWPPP and monitoring program to incorporate the additional BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required.

4. A facility operator shall be in violation of this General Permit if he/she fails to do any of the following:

a. Submit the report described above within 60 days after either the facility operator or the Regional Water Board determines that discharges are causing or contributing to an exceedance of an applicable water quality standard;

b. Submit a report that is approved by the Regional Water Board; or

c. Revise its SWPPP and monitoring program as required by the approved report.

D. SPECIAL CONDITIONS

1. Non-Storm Water Discharges

a. The following non-storm water discharges are authorized by this General Permit provided that they satisfy the conditions specified in Paragraph b. below: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; ground water; foundation or footing drainage; and sea water infiltration where the sea waters are discharged back into the sea water source.

b. The non-storm water discharges as provided in Paragraph a. above are authorized by this General Permit if all the following conditions are met:

i. The non-storm water discharges are in compliance with Regional Water Board requirements.

ii. The non-storm water discharges are in compliance with local agency ordinances and/or requirements.

iii. BMPs are specifically included in the SWPPP to (1) prevent or reduce the contact of non-storm water discharges with significant materials or equipment and (2) minimize, to the extent practicable, the flow or volume of non-storm water discharges.

iv. The non-storm water discharges do not contain significant quantities of pollutants.

v. The monitoring program includes quarterly visual observations of each non-storm water discharge and its sources to ensure that BMPs are being implemented and are effective.

vi. The non-storm water discharges are reported and described annually as part of the annual report.

c. The Regional Water Board or its designee may establish additional monitoring programs and reporting requirements for any non-storm water discharge authorized by this General Permit.

d. Discharges from firefighting activities are authorized by this General Permit and are not subject to the conditions of Paragraph b. above.

E. PROVISIONS

1. All facility operators seeking coverage by this General Permit must submit an NOI for each of the facilities they operate. Facility operators filing an NOI after the adoption of this General Permit shall use the NOI form and instructions (Attachment 3) attached to this General Permit. Existing facility operators who have filed an NOI pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116) shall submit an abbreviated NOI form provided by the State Water Board. The abbreviated NOI form shall be submitted within 45 days of receipt.

2. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing SWPPP and shall implement any necessary revisions to their SWPPP in accordance with Section A of this General Permit in a timely manner, but in no case later than August 1, 1997. Facility operators beginning industrial activities after adoption of this General Permit must develop and implement an SWPPP in accordance with Section A of this General Permit when the industrial activities begin.

3. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing Monitoring Program and shall implement any necessary revisions to their Monitoring Program in accordance with Section B of the General Permit in a timely manner, but in no case later than August 1, 1997. Facility operators beginning industrial activities after adoption of this General Permit must develop and implement a Monitoring Program in

accordance with Section B of this General Permit when industrial activities begin.

4. Facility operators of feedlots as defined in 40 CFR Part 412 that are in full compliance with Section 2560 to Section 2565, Title 23, California Code of Regulations (Chapter 15) will be in compliance with all effluent limitations and prohibitions contained in this General Permit. Facility operators of feedlots that comply with Chapter 15, however, must perform monitoring in compliance with the requirements of Section B.4.d. and B.14. of this General Permit. Facility operators of feedlots must also comply with any Regional Water Board WDRs or NPDES general permit regulating their storm water discharges.

5. All facility operators must comply with lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding storm water discharges and non-storm water discharges entering storm drain systems or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs developed to comply with NPDES permits issued by the Regional Water Boards to local agencies.

6. All facility operators must comply with the standard provisions and reporting requirements for each facility covered by this General Permit contained in Section C, Standard Provisions.

7. Facility operators that operate facilities with co-located industrial activities (facilities that have industrial activities that meet more than one of the descriptions in Attachment 1) that are contiguous to one another are authorized to file a single NOI to comply with the General Permit. Storm water discharges and authorized non-storm water discharges from the co-located industrial activities are authorized if the SWPPP and Monitoring Program addresses each co-located industrial activity.

8. Upon reissuance of a successor NPDES general permit by the State Water Board, the facility operators subject to this reissued General Permit may be required to file an NOI.

9. Facility operators may request to terminate their coverage under this General Permit by filing a Notice of Termination (NOT) with the Regional Water Board. The NOT shall provide all documentation requested by the Regional Water Board. The facility operator will be notified when the NOT has been approved. Should the NOT be denied, facility operators are responsible for continued compliance with the requirements of this General Permit.

10. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116) shall:

    a. Complete the 1996-97 activities required by those general permits. These include, but are not limited to, conducting any remaining visual observations, sample collection, annual site inspection, annual report submittal, and (for group monitoring leaders) Group Evaluation Reports; and

    b. Comply with the requirements of this General Permit no later than August 1, 1997.

11. If the Regional Water Board determines that a discharge may be causing or contributing to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable Regional Water Board's Basin Plan, the Regional Water Board may order the facility operator to comply with the requirements described in Receiving Water Limitation C.3. The facility operator shall comply with the requirements within the time schedule established by the Regional Water Board.

12. If the facility operator determines that its storm water discharges or authorized non-storm water discharges are causing or contributing to an exceedance of any applicable water quality standards, the facility operator shall comply with the requirements described in Receiving Water Limitation C.3.

13. State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) and San Francisco Bay Regional Water Board Order No. 91-011 (as amended by Order No. 92-116) are hereby rescinded.

F. REGIONAL WATER BOARD AUTHORITIES

1. Following adoption of this General Permit, Regional Water Boards shall:

    a. Implement the provisions of this General Permit, including, but not limited to, reviewing SWPPPs, reviewing annual reports, conducting compliance inspections, and taking enforcement actions.

    b. Issue other NPDES general permits or individual NPDES storm water permits as they deem appropriate to individual facility operators, facility operators of specific categories of industrial activities, or facility operators in a watershed or geographic area. Upon issuance of such NPDES permits by a Regional Water Board, the affected facility operator shall no longer

be regulated by this General Permit. Any new NPDES permit issued by the Regional Water Board may contain different requirements than the requirements of this General Permit.

2. Regional Water Boards may provide guidance to facility operators on the SWPPP and the Monitoring Program and reporting implementation.

3. Regional Water Boards may require facility operators to conduct additional SWPPP and Monitoring Program and reporting activities necessary to achieve compliance with this General Permit.

4. Regional Water Boards may approve requests from facility operators whose facilities include co-located industrial activities that are not contiguous within the facilities (e.g., some military bases) to comply with this General Permit under a single NOI. Storm water discharges and authorized non-storm water discharges from the co-located industrial activities and from other sources within the facility that may generate significant quantities of pollutants are authorized provided the SWPPP and Monitoring Program addresses each co-located industrial activity and other sources that may generate significant quantities of pollutants.

CERTIFICATION

The undersigned, Administrative Assistant to the State Water Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 17, 1997.

AYE: John P. Caffrey
John W. Brown
James M. Stubchaer
Marc Del Piero
Mary Jane Forster

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marché

Administrative Assistant to the Board

SECTION A: STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. *Implementation Schedule*

A storm water pollution prevention plan (SWPPP) shall be developed and implemented for each facility covered by this General Permit in accordance with the following schedule.

a. Facility operators beginning industrial activities before October 1, 1992 shall develop and implement the SWPPP no later than October 1, 1992. Facility operators beginning industrial activities after October 1, 1992 shall develop and implement the SWPPP when industrial activities begin.

b. Existing facility operators that submitted a Notice of Intent (NOI), pursuant to State Water Resources Control Board (State Water Board) Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing SWPPP and shall implement any necessary revisions to their SWPPP in a timely manner, but in no case later than August 1, 1997.

2. *Objectives*

The SWPPP has two major objectives: (a) to identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility; and (b) to identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges. BMPs may include a variety of pollution prevention measures or other low-cost and pollution control measures. They are generally categorized as non-structural BMPs (activity schedules, prohibitions of practices, maintenance procedures, and other low-cost measures) and as structural BMPs (treatment measures, run-off controls, overhead coverage.) To achieve these objectives, facility operators should consider the five phase process for SWPPP development and implementation as shown in Table A.

The SWPPP requirements are designed to be sufficiently flexible to meet the needs of various facilities. SWPPP requirements that are not applicable to a facility should not be included in the SWPPP.

A facility's SWPPP is a written document that shall contain a compliance activity schedule, a description of industrial activities and pollutant sources, descriptions of BMPs, drawings, maps, and relevant copies or references of parts of other plans. The SWPPP shall be revised whenever appropriate and shall be readily available for review by facility employees or Regional Water Board inspectors.

3. *Planning and Organization*

a. *Pollution Prevention Team*

The SWPPP shall identify a specific individual or individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all monitoring program activities required in Section B of this General Permit. The SWPPP shall clearly identify the General Permit related responsibilities, duties, and activities of each team member. For small facilities, storm water pollution prevention teams may consist of one individual where appropriate.

b. *Review Other Requirements and Existing Facility Plans*

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. Facility operators should review all local, State, and Federal requirements that impact, complement, or are consistent with the requirements of this General Permit. Facility operators should identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of this General Permit. As examples, facility operators whose facilities are subject to Federal Spill Prevention Control and Countermeasures' requirements should already have instituted a plan to control spills of certain hazardous materials. Similarly, facility operators whose facilities are subject to air quality related permits and regulations may already have evaluated industrial activities that generate dust or particulates.

4. *Site Map*

The SWPPP shall include a site map. The site map shall be provided on an 8-½ x 11 inch or larger sheet and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps.

TABLE A
FIVE PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL STORM WATER POLLUTION PREVENTION PLANS

PLANNING AND ORGANIZATION

*Form Pollution Prevention Team
*Review other plans

↓

ASSESSMENT PHASE

*Develop a site map
*Identify potential pollutant sources
*Inventory of materials and chemicals
*List significant spills and leaks
*Identify non-storm water discharges
*Assess pollutant Risks

↓

BEST MANAGEMENT PRACTICES IDENTIFICATION PHASE

*Non-structural BMPs
*Structural BMPs
*Select activity and site-specific BMPs

↓

IMPLEMENTATION PHASE

*Train employees
*Implement BMPs
*Conduct recordkeeping and reporting

↓

EVALUATION / MONITORING

*Conduct annual site evaluation
*Review monitoring information
*Evaluate BMPs
*Review and revise SWPPP

The following information shall be included on the site map:

a. The facility boundaries; the outline of all storm water drainage areas within the facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; and direction of flow of each drainage area, on-site surface water bodies, and areas of soil erosion. The map shall also identify nearby water bodies (such as rivers, lakes, and ponds) and municipal storm drain inlets

where the facility's storm water discharges and authorized non-storm water discharges may be received.

b. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.

c. An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.

d. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in Section A.6.a.iv. below have occurred.

e. Areas of industrial activity. This shall include the locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity which are potential pollutant sources.

5. *List of Significant Materials*

The SWPPP shall include a list of significant materials handled and stored at the site. For each material on the list, describe the locations where the material is being stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

6. *Description of Potential Pollutant Sources*

a. The SWPPP shall include a narrative description of the facility's industrial activities, as identified in Section A.4.e above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:

i. Industrial Processes

Describe each industrial process, the type, characteristics, and quantity of significant materials used in or resulting from the process, and a description of the manufacturing, cleaning, rinsing, recycling, disposal, or other activities related to the process. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

ii. Material Handling and Storage Areas

Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

iii. Dust and Particulate Generating Activities

Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.

iv. Significant Spills and Leaks

Describe materials that have spilled or leaked in significant quantities in storm water discharges or non-storm water discharges since April 17, 1994. Include toxic chemicals (listed in 40 CFR, Part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (U.S. EPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 Code of Federal Regulations [CFR], Parts 110, 117, and 302).

The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water

discharges, and the preventative measures taken to ensure spill or leaks do not reoccur. Such list shall be updated as appropriate during the term of this General Permit.

v. Non-Storm Water Discharges

Facility operators shall investigate the facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system.

All non-storm water discharges shall be described. This shall include the source, quantity, frequency, and characteristics of the non-storm water discharges and associated drainage area.

Non-storm water discharges that contain significant quantities of pollutants or that do not meet the conditions provided in Special Conditions D. are prohibited by this General Permit (Examples of prohibited non-storm water discharges are contact and non-contact cooling water, boiler blowdown, rinse water, wash water, etc.). Non-storm water discharges that meet the conditions provided in Special Condition D. are authorized by this General Permit. The SWPPP must include BMPs to prevent or reduce contact of non-storm water discharges with significant materials or equipment.

vi. Soil Erosion

Describe the facility locations where soil erosion may occur as a result of industrial activity, storm water discharges associated with industrial activity, or authorized non-storm water discharges.

b. The SWPPP shall include a summary of all areas of industrial activities, potential pollutant sources, and potential pollutants. This information should be summarized similar to Table B. The last column of Table B, "Control Practices", should be completed in accordance with Section A.8. below.

7. *Assessment of Potential Pollutant Sources*

a. The SWPPP shall include a narrative assessment of all industrial activities and potential pollutant sources as described in A.6. above to determine:

i. Which areas of the facility are likely sources of

pollutants in storm water discharges and authorized non-storm water discharges, and

ii. Which pollutants are likely to be present in storm water discharges and authorized non-storm water discharges. Facility operators shall consider and evaluate various factors when performing this assessment such as current storm water BMPs; quantities of significant materials handled, produced, stored, or disposed of; likelihood of exposure to storm water or authorized non-storm water discharges; history of spill or leaks; and run-on from outside sources.

b. Facility operators shall summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges.

Facility operators are required to develop and implement additional BMPs as appropriate and necessary to prevent or reduce pollutants associated with each pollutant source. The BMPs will be narratively described in Section 8 below.

8. Storm Water Best Management Practices

The SWPPP shall include a narrative description of the storm water BMPs to be implemented at the facility for each potential pollutant and its source identified in the site assessment phase (Sections A.6. and 7. above). The BMPs shall be developed and implemented to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Each pollutant and its source may require one or more BMPs. Some BMPs may be implemented for multiple pollutants and their sources, while other BMPs will be implemented for a very specific pollutant and its source.

TABLE B
EXAMPLE
ASSESSMENT OF POTENTIAL POLLUTION SOURCES AND CORRESPONDING BEST MANAGEMENT PRACTICES SUMMARY

Area	Activity	Pollutant Source	Pollutant	Best Management Practices
Vehicle & Equipment Fueling	Fueling	Spills and leaks during delivery	fuel oil	- Use spill and overflow protection - Minimize run-on of storm water into the fueling area - Cover fueling area - Use dry cleanup methods rather than hosing down area - Implement proper spill prevention control program - Implement adequate preventative maintenance program to preventive tank and line leaks - Inspect fueling areas regularly to detect problems before they occur - Train employees on proper fueling, cleanup, and spill response techniques.
		Spills caused by topping off fuel tanks	fuel oil	
		Hosing or washing down fuel area	fuel oil	
		Leaking storage tanks	fuel oil	
		Rainfall running off fueling area, and rainfall running onto and off fueling area	fuel oil	

The description of the BMPs shall identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented. The description shall also include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP shall provide a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Table B.

Facility operators shall consider the following BMPs for implementation at the facility:

a. Non-Structural BMPs

Non-structural BMPs generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from contacting with storm water discharges and authorized non-storm water discharges. They are considered low technology, cost-effective measures. Facility operators should consider all possible non-structural BMPs options before considering additional structural BMPs (see Section A.8.b. below). Below is a list of non-structural BMPs that should be considered:

i. Good Housekeeping

Good housekeeping generally consist of practical procedures to maintain a clean and orderly facility.

ii. Preventive Maintenance

Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.

iii. Spill Response

This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.

iv. Material Handling and Storage

This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.

v. Employee Training

This includes training of personnel who are responsible for (1) implementing activities identified in the SWPPP, (2) conducting inspections, sampling, and visual observations, and (3) managing storm water. Training should address topics such as spill response, good housekeeping, and material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held.

vi. Waste Handling/Recycling

This includes the procedures or processes to handle, store, or dispose of waste materials or recyclable materials.

vii. Recordkeeping and Internal Reporting

This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel.

viii. Erosion Control and Site Stabilization

This includes a description of all sediment and erosion control activities. This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other sediment control devices, etc.

ix. Inspections

This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and SWPPPs are made.

x. Quality Assurance

This includes the procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted.

b. Structural BMPs

Where non-structural BMPs as identified in Section A.8.a. above are not effective, structural BMPs shall be considered. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list of structural BMPs that should be considered:

i. Overhead Coverage

This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.

ii. Retention Ponds

This includes basins, ponds, surface impoundments, bermed areas, etc. that do not allow storm water to discharge from the facility.

iii. Control Devices

This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.

iv. Secondary Containment Structures

This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.

v. Treatment

This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc. that reduce the pollutants in storm water discharges and authorized non-storm water discharges.

9. <u>Annual Comprehensive Site Compliance Evaluation</u>

The facility operator shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1-June 30). Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation. Evaluations shall include the following:

a. A review of all visual observation records, inspection records, and sampling and analysis results.

b. A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system.

c. A review and evaluation of all BMPs (both structural and non-structural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.

d. An evaluation report that includes, (i) identification of personnel performing the evaluation, (ii) the date(s) of the evaluation, (iii) necessary SWPPP revisions, (iv) schedule, as required in Section A.10.e, for implementing SWPPP revisions, (v) any incidents of non-compliance and the corrective actions taken, and (vi) a certification that the facility operator is in compliance with this General Permit. If the above certification cannot be provided, explain in the evaluation report why the facility operator is not in compliance with this General Permit. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Standard Provisions 9. and 10. of Section C. of this General Permit.

10. *SWPPP General Requirements*

a. The SWPPP shall be retained on site and made available upon request of a representative of the Regional Water Board and/or local storm water management agency (local agency) which receives the storm water discharges.

b. The Regional Water Board and/or local agency may notify the facility operator when the SWPPP does not meet one or more of the minimum requirements of this Section. As requested by the Regional Water Board and/or local agency, the facility operator shall submit an SWPPP revision and implementation schedule that meets the minimum requirements of this section to the Regional Water Board and/or local agency that requested the SWPPP revisions. Within 14 days after implementing the required SWPPP revisions, the facility operator shall provide written certification to the Regional Water Board and/or local agency that the revisions have been implemented.

c. The SWPPP shall be revised, as appropriate, and implemented prior to changes in industrial activities which (i) may significantly increase the quantities of pollutants in storm water discharge, (ii) cause a new area of industrial activity at the facility to be exposed to storm water, or (iii) begin an industrial activity which would introduce a new pollutant source at the facility.

d. Other than as provided in Provisions B.11, B.12, and E.2 of the General Permit, the SWPPP shall be revised and implemented in a timely manner, but in no case more than 90 days after a facility operator determines that the SWPPP is in violation of any requirement(s) of this General Permit.

e. When any part of the SWPPP is infeasible to implement by the deadlines specified in Provision E.2 or Sections A.1, A.9, A.10.c, and A.10.d of this General Permit due to proposed significant structural changes, the facility operator shall submit a report to the Regional Water Board prior to the applicable deadline that (i) describes the portion of the SWPPP that is infeasible to implement by the deadline, (ii) provides justification for a time extension, (iii) provides a schedule for completing and implementing that portion of the SWPPP, and (iv) describes the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Such reports are subject to Regional Water Board approval and/or modifications. Facility operators shall provide written notification to the Regional Water Board within 14 days after the SWPPP revisions are implemented.

f. The SWPPP shall be provided, upon request, to the Regional Water Board. The SWPPP is considered a report that shall be available to the public by the Regional Water Board under Section 308(b) of the Clean Water Act.

SECTION B. MONITORING PROGRAM AND REPORTING REQUIREMENTS

1. *Implementation Schedule*

Each facility operator shall develop a written monitoring program for each facility covered by this General Permit in accordance with the following schedule:

a. Facility operators beginning industrial activities before October 1, 1992 shall develop and implement a monitoring program no later than October 1, 1992. Facility operators beginning operations after October 1, 1992 shall develop and implement a monitoring program when the industrial activities begin.

b. Facility operators that submitted a Notice Of Intent (NOI) pursuant to State Water Resources Control Board (State Water Board) Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing monitoring program and implement any necessary revisions to their monitoring program in a timely manner, but in no case later than August 1, 1997. These facility operators may use the monitoring results conducted in accordance with those expired general permits to satisfy the pollutant/parameter reduction requirements in Section B.5.c., Sampling and Analysis Exemptions and Reduction certifications in Section B.12., and Group Monitoring Sampling credits in B.15.k. For facilities beginning industrial activities after the adoption of this General Permit, the monitoring program shall be developed and implemented when the facility begins the industrial activities.

2. *Objectives*

The objectives of the monitoring program are to:

a. Ensure that storm water discharges are in compliance with the Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations specified in this General Permit.

b. Ensure practices at the facility to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges are evaluated and revised to meet changing conditions.

c. Aid in the implementation and revision of the SWPPP required by Section A of this General Permit.

d. Measure the effectiveness of best management practices (BMPs) to prevent or reduce pollutants in storm water

discharges and authorized non-storm water discharges. Much of the information necessary to develop the monitoring program, such as discharge locations, drainage areas, pollutant sources, etc., should be found in the Storm Water Pollution Prevention Plan (SWPPP). The facility's monitoring program shall be a written, site-specific document that shall be revised whenever appropriate and be readily available for review by employees or Regional Water Board inspectors.

3. *Non-storm Water Discharge Visual Observations*

a. Facility operators shall visually observe all drainage areas within their facilities for the presence of unauthorized non-storm water discharges;

b. Facility operators shall visually observe the facility's authorized non-storm water discharges and their sources;

c. The visual observations required above shall occur quarterly, during daylight hours, on days with no storm water discharges, and during scheduled facility operating hours[1]. Quarterly visual observations shall be conducted in each of the following periods: January-March, April-June, July-September, and October-December. Facility operators shall conduct quarterly visual observations within 6-18 weeks of each other.

d. Visual observations shall document the presence of any discolorations, stains, odors, floating materials, etc., as well as the source of any discharge. Records shall be maintained of the visual observation dates, locations observed, observations, and response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Section A of this General Permit.

4. *Storm Water Discharge Visual Observations*

a. With the exception of those facilities described in Section B.4.d. below, facility operators shall visually

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[1] "Scheduled facility operating hours" are the time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.

observe storm water discharges from one storm event per month during the wet season (October 1-May 30). These visual observations shall occur during the first hour of discharge and at all discharge locations. Visual observations of stored or contained storm water shall occur at the time of release.

b. Visual observations are only required of storm water discharges that occur during daylight hours that are preceded by at least three (3) working days[2] without storm water discharges and that occur during scheduled facility operating hours.

c. Visual observations shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutants. Records shall be maintained of observation dates, locations observed, observations, and response taken to reduce or prevent pollutants in storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Section A of this General Permit.

d. Feedlots (subject to Federal effluent limitations guidelines in 40 Code of Federal Regulations [CFR] Part 412) that are in compliance with Sections 2560 to 2565, Article 6, Chapter 15, Title 23, California Code of Regulations, and facility operators with storm water containment facilities shall conduct monthly inspections of their containment areas to detect leaks and ensure maintenance of adequate freeboard. Records shall be maintained of the inspection dates, observations, and any response taken to eliminate leaks and to maintain adequate freeboard.

5. *Sampling and Analysis*

a. Facility operators shall collect storm water samples during the first hour of discharge from (1) the first storm event of the wet season, and (2) at least one other storm event in the wet season. All storm water discharge locations shall be sampled. Sampling of stored or contained storm water shall occur at the time the stored or contained storm water is released. Facility operators that do not collect samples from the first storm event of the wet season are still required to collect samples from two other storm events of the wet season and shall explain in the Annual Report why the first storm event was not sampled.

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[2] Three (3) working days may be separated by non-working days such as weekends and holidays provided that no storm water discharges occur during the three (3) working days and the non-working days.

b. Sample collection is only required of storm water discharges that occur during scheduled facility operating hours and that are preceded by at least (3) three working days without storm water discharge.

c. The samples shall be analyzed for:

i. Total suspended solids (TSS) pH, specific conductance, and total organic carbon (TOC). Oil and grease (O&G) may be substituted for TOC; and

ii. Toxic chemicals and other pollutants that are likely to be present in storm water discharges in significant quantities. If these pollutants are not detected in significant quantities after two consecutive sampling events, the facility operator may eliminate the pollutant from future sample analysis until the pollutant is likely to be present again; and

iii. Other analytical parameters as listed in Table D (located at the end of this Section). These parameters are dependent on the facility's standard industrial classification (SIC) code. Facility operators are not required to analyze a parameter listed in Table D when the parameter is not already required to be analyzed pursuant to Section B.5.c.i. and ii. or B.6 of this General Permit, and either of the two following conditions are met: (1) the parameter has not been detected in significant quantities from the last two consecutive sampling events, or (2) the parameter is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the facility operator's evaluation of the facilities industrial activities, potential pollutant sources, and SWPPP. Facility operators that do not analyze for the applicable Table D parameters shall certify in the Annual Report that the above conditions have been satisfied.

iv. Other parameters as required by the Regional Water Board.

6. *Facilities Subject to Federal Storm Water Effluent Limitation Guidelines*

Facility operators with facilities subject to Federal storm water effluent limitation guidelines, in addition to the requirements in Section B.5. above, must complete the following:

a. Collect and analyze two samples for any pollutant specified in the appropriate category of 40 CFR Subchapter N. The sampling and analysis exemptions and reductions described in Section B.12. of this General Permit do not apply to these pollutants.

b. Estimate or calculate the volume of storm water discharges from each drainage area;

c. Estimate or calculate the mass of each regulated pollutant as defined in the appropriate category of 40 CFR Subchapter N; and

d. Identify the individual(s) performing the estimates or calculations in accordance with Subsections b. and c. above.

7. *Sample Storm Water Discharge Locations*

a. Facility operators shall visually observe and collect samples of storm water discharges from all drainage areas that represent the quality and quantity of the facility's storm water discharges from the storm event.

b. If the facility's storm water discharges are commingled with run-on from surrounding areas, the facility operator should identify other visual observation and sample collection locations that have not been commingled by run-on and that represent the quality and quantity of the facility's storm water discharges from the storm event.

c. If visual observation and sample collection locations are difficult to observe or sample (e.g., sheet flow, submerged outfalls), facility operators shall identify and collect samples from other locations that represent the quality and quantity of the facility's storm water discharges from the storm event.

d. Facility operators that determine that the industrial activities and BMPs within two or more drainage areas are substantially identical may either (i) collect samples from a reduced number of substantially identical

drainage areas, or (ii) collect samples from each substantially identical drainage area and analyze a combined sample from each substantially identical drainage area. Facility operators must document such a determination in the annual report.

8. *Visual Observation and Sample Collection Exceptions*

Facility operators are required to be prepared to collect samples and conduct visual observations at the beginning of the wet season (October 1) and throughout the wet season

until the minimum requirements of Sections B.4. and B.5. are completed with the following exceptions:

a. A facility operator is not required to collect a sample and conduct visual observations in accordance with Section B.4 and Section B.5 due to dangerous weather conditions, such as flooding, electrical storm, etc., when storm water discharges begin after scheduled facility operating hours or when storm water discharges are not preceded by three working days without discharge. Visual observations are only required during daylight hours. Facility operators that do not collect the required samples or visual observations during a wet season due to these exceptions shall include an explanation in the Annual Report why the sampling or visual observations could not be conducted.

b. A facility operator may conduct visual observations and sample collection more than one hour after discharge begins if the facility operator determines that the objectives of this Section will be better satisfied. The facility operator shall include an explanation in the Annual Report why the visual observations and sample collection should be conducted after the first hour of discharge.

9. *Alternative Monitoring Procedures*

Facility operators may propose an alternative monitoring program that meets Section B.2 monitoring program objectives for approval by the Regional Water Board. Facility operators shall continue to comply with the monitoring requirements of this Section and may not implement an alternative monitoring plan until the alternative monitoring plan is approved by the Regional Water Board. Alternative monitoring plans are subject to modification by the Regional Water Boards.

10. *Monitoring Methods*

a. Facility operators shall explain how the facility's monitoring program will satisfy the monitoring program objectives of Section B.2. This shall include:

i. Rationale and description of the visual observation methods, location, and frequency.

ii. Rationale and description of the sampling methods, location, and frequency; and

iii. Identification of the analytical methods and corresponding method detection limits used to detect pollutants in storm water discharges. This shall include justification that the method detection limits are adequate to satisfy the objectives of the monitoring program.

b. All sampling and sample preservation shall be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a facility operator's own field instruments for measuring pH and Electro Conductivity) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses must be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. All metals shall be reported as total metals. With the exception of analysis conducted by facility operators, all laboratory analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. Facility operators may conduct their own sample analyses if the facility operator has sufficient capability (qualified employees, laboratory equipment, etc.) to adequately perform the test procedures.

11. *Inactive Mining Operations*
Inactive mining operations are defined in Attachment 1 of this General Permit. Where comprehensive site compliance evaluations, non-storm water discharge visual observations, storm water discharge visual observations, and storm water sampling are impracticable, facility operators of inactive mining operations may instead obtain certification once every three years by a Registered Professional Engineer that an SWPPP has been prepared for the facility and is being implemented in accordance with the requirements of this General Permit. By means of these certifications, the Registered Professional Engineer having examined the facility and being familiar with the provisions of this General Permit shall attest that the SWPPP has been prepared in accordance with good engineering practices. Facility operators of mining operations who cannot obtain a certification because of noncompliance must notify the appropriate Regional Water Board and, upon request, the local agency which receives the storm water discharge.

12. *Sampling and Analysis* Exemptions and Reductions

A facility operator who qualifies for sampling and analysis exemptions, as described below in Section B.12.a.i., or who qualifies for reduced sampling and analysis, as described below in Section B.12.b., must submit the appropriate certifications and required documentation to the Regional Water Boards prior to the wet season (October 1) and recertify as part of the Annual Report submittal. A facility operator that qualifies for either the Regional Water Board or local agency certification programs, as described below in Section B.12.a.ii. and iii., shall submit certification and documentation in accordance with the requirements of those programs. Facility operators who provide certifications in accordance with this Section are still required to comply with all other monitoring program and reporting requirements. Facility operators shall prepare and submit their certifications using forms and instructions provided by the State Water Board, Regional Water Board, or local agency or shall submit their information on a form that contains equivalent information. Facility operators whose facility no longer meets the certification conditions must notify the Regional Water Boards (and local agency) within 30 days and immediately comply with the Section B.5. sampling and analysis requirements. Should a Regional Water Board (or local agency) determine that a certification does not meet the conditions set forth below, facility operators must immediately comply with the Section B.5. sampling and analysis requirements.

a. Sampling and Analysis Exemptions

A facility operator is not required to collect and analyze samples in accordance with Section B.5. if the facility operator meets all of the conditions of one of the following certification programs:

i. No Exposure Certification (NEC)

This exemption is designed primarily for those facilities where all industrial activities are conducted inside buildings and where all materials stored and handled are not exposed to storm water. To qualify for this exemption, facility operators must certify that their facilities meet all of the following conditions:

(1) All prohibited non-storm water discharges have been eliminated or otherwise permitted.

(2) All authorized non-storm water discharges have been identified and addressed in the SWPPP.

(3) All areas of past exposure have been inspected and cleaned, as appropriate.

(4) All significant materials related to industrial activity (including waste materials) are not exposed to storm water or authorized non-storm water discharges.

(5) All industrial activities and industrial equipment are not exposed to storm water or authorized non-storm water discharges.

(6) There is no exposure of storm water to significant materials associated with industrial activity through other direct or indirect pathways such as from industrial activities that generate dust and particulates.

(7) There is periodic re-evaluation of the facility to ensure conditions (1), (2), (4), (5), and (6) above are continuously met. At a minimum, re-evaluation shall be conducted once a year.

ii. Regional Water Board Certification Programs

The Regional Water Board may grant an exemption to the Section B.5. Sampling and Analysis Requirements if it determines a facility operator has met the conditions set forth in a Regional Water Board certification program. Regional Water Board certification programs may include conditions to (1) exempt facility operators whose facilities infrequently discharge storm water to waters of the United States, and (2) exempt facility operators

that demonstrate compliance with the terms and conditions of this General Permit.

iii. Local Agency Certifications

A local agency may develop a local agency certification program. Such programs must be approved by the Regional Water Board. An approved local agency program may either grant an exemption

from the Section B.5. Sampling and Analysis Requirements or reduce the frequency of sampling if it determines that a facility operator has demonstrated compliance with the terms and conditions of this General Permit.

b. Sampling and Analysis Reduction

i. A facility operator may reduce the number of sampling events required to be sampled for the remaining term of this General Permit if the facility operator provides certification that the following conditions have been met:

(1) The facility operator has collected and analyzed samples from a minimum of six storm events from all required drainage areas;

(2) All prohibited non-storm water discharges have been eliminated or otherwise permitted;

(3) The facility operator demonstrates compliance with the terms and conditions of the General Permit for the previous two years (i.e., completed Annual Reports, performed visual observations, implemented appropriate BMPs, etc.);

(4) The facility operator demonstrates that the facility's storm water discharges and authorized non-storm water discharges do not contain significant quantities of pollutants; and

(5) Conditions (2), (3), and (4) above are expected to remain in effect for a minimum of one year after filing the certification.

ii. Unless otherwise instructed by the Regional Water Board, facility operators shall collect and analyze samples from two additional storm events (or one additional storm event when certification filed for the wet season beginning October 1, 2001) during the remaining term of this General Permit in accordance with Table C below. Facility operators shall collect samples of the first

storm event of the wet season. Facility operators that do not collect samples from the first storm event of the wet season shall collect samples from another storm event during the same wet season. Facility operators that do not collect a sample in a required wet season shall collect the sample from another storm event in the next wet season. Facility operators shall explain in the Annual Report why the first storm event of a wet season was not sampled or a sample was not taken from any storm event in accordance with the Table C schedule.

Table C
REDUCED MONITORING SAMPLING SCHEDULE

Facility Operator Filing Sampling Reduction Certification By	Samples Shall be Collected and Analyzed in These Wet Seasons	
	Sample 1	Sample 2
Oct. 1, 1997	Oct. 1, 1997-May 31, 1998	Oct. 1, 1999-May 31, 2000
Oct. 1, 1998	Oct. 1, 1998-May 31, 1999	Oct. 1, 2000-May 31, 2001
Oct. 1, 1999	Oct. 1, 1999-May 31, 2000	Oct. 1, 2001-May 31, 2002
Oct. 1, 2000	Oct. 1, 2000-May 31, 2001	Oct. 1, 2001-May 31, 2002
Oct. 1, 2001	Oct. 1, 2001-May 31, 2002	-

13. *Records*

Records of all storm water monitoring information and copies of all reports (including the Annual Reports) required by this General Permit shall be retained for a period of at least five years. These records shall include:

a. The date, place, and time of site inspections, sampling, visual observations, and/or measurements;

b. The individual(s) who performed the site inspections, sampling, visual observations, and or measurements;

c. Flow measurements or estimates (if required by Section B.6);

d. The date and approximate time of analyses;

e. The individual(s) who performed the analyses;

f. Analytical results, method detection limits, and the analytical techniques or methods used;

g. Quality assurance/quality control records and results;

h. Non-storm water discharge inspections and visual observations and storm water discharge visual observation records (see Sections B.3. and 4.);

i. Visual observation and sample collection exception records (see Section B.5.a, 7.d, 8, and 12.b.ii.);

j. All calibration and maintenance records of on-site instruments used;

k. All Sampling and Analysis Exemption and Reduction certifications and supporting documentation (see Section B.12);

l. The records of any corrective actions and follow-up activities that resulted from the visual observations.

14. *Annual Report*

All facility operators shall submit an Annual Report by July 1 of each year to the Executive Officer of the Regional Water Board responsible for the area in which the facility is located and to the local agency (if requested).

The report shall include a summary of visual observations and sampling results, an evaluation of the visual observation and sampling and analysis results, laboratory reports, the Annual Comprehensive Site Compliance Evaluation Report required in Section A.9., an explanation of why a facility did not implement any activities required by the General Permit (if not already included in the Evaluation Report), and records specified in Section B.13.i. The method detection limit of each analytical parameter shall be included. Analytical results that are less than the method detection limit shall be reported as "less than the method detection limit." The Annual Report shall be signed and certified in accordance with Standard Provisions 9. and 10. of Section C of this General Permit. Facility operators shall prepare and submit their Annual Reports using the annual report forms provided by the State Water Board or Regional Water Board or shall submit their information on a form that contains equivalent information.

15. *Group Monitoring*

Facility operators may participate in group monitoring as described below. A facility operator that participates in group monitoring shall develop and implement a written site-specific SWPPP and monitoring program in accordance with the General Permit and must satisfy any group monitoring requirements. Group monitoring shall be subject to the following requirements:

a. A group monitoring plan (GMP) shall be developed and implemented by a group leader representing a group of

similar facility operators regulated by this General Permit or by a local agency which holds an NPDES permit (local agency permittee) for a municipal separate storm sewer system. GMPs with participants that discharge storm water within the boundaries of a single Regional Water Board shall be approved by that Regional Water Board. GMPs with participants that discharge storm water within the boundaries of multiple Regional Water Boards shall be approved by the State Water Board. The State Water Board and/or Regional Water Board(s) may disapprove a facility's participation in a GMP or require a GMP participant to conduct additional monitoring activities.

b. Each GMP participant shall collect and analyze samples from at least two storm events in accordance with Section B.5. over the five-year period of this General Permit. The two storm event minimum applies to new and existing members. The group leader or local agency permittee shall schedule sampling to meet the following conditions: (i) to evenly distribute the sample collection over the five-year term of this General Permit, and (ii) to collect samples from the two storm events at each participant's facility in different and non-consecutive wet seasons. New participants who join in Years 4 and 5 of this General Permit are not subject to Condition (ii) above. Group leaders shall explain in the annual Group Evaluation Report why any scheduled samples were not collected and reschedule the sampling so that all required samples are collected during the term of this General Permit.

c. The group leader or local agency permittee must have the appropriate resources to develop and implement the GMP. The group leader or local agency permittee must also have the authority to terminate any participant who is not complying with this General Permit and the GMP.

d. The group leader or local agency permittee is responsible for:

   i. Developing, implementing, and revising the GMP;

   ii. Developing and submitting an annual Group Evaluation Report to the State Water Board and/or Regional Water Board by August 1 of each year that includes:

      (1) An evaluation and summary of all group monitoring data,

      (2) An evaluation of the overall performance of the GMP participants in complying with this General Permit and the GMP,

(3) Recommended baseline and site-specific BMPs that should be considered by each participant based upon Items (1) and (2) above, and

(4) A copy of each evaluation report and recommended BMPs as required in Section B.15.d.v. below.

iii. Recommending appropriate BMPs to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges;

iv. Assisting each participant in completing their Annual Comprehensive Site Compliance Evaluation and Annual Report;

v. Conducting a minimum of two on-site inspections of each participant's facility (it is recommended that these inspections be scheduled during the Annual Comprehensive Site Compliance Evaluation) during the term of this General Permit to evaluate the participant's compliance with this General Permit and the GMP, and to recommend any additional BMPs necessary to achieve compliance with this General Permit. Participants that join in Years 4 and 5 shall be scheduled for one evaluation. A copy of the evaluation and recommended BMPs shall be provided to the participants;

vi. Submitting a GMP (or revisions, as necessary), to the appropriate Regional Water Board(s) and State Water Board no later than September 1, 1997 (or August 1 in subsequent years). Once approved, a group leader or local agency permittee shall submit a letter of intent by August 1 of each year to continue the approved GMP. The letter of intent must include a roster of participants, participant's Waste Discharge Identification number (WDID#), updated sampling schedules, and any other revisions to the GMP;

vii. Revising the GMP as instructed by the Regional Water Board or the State Water Board; and

viii. Providing the State Water Board and/or Regional Water Board with quarterly updates of any new or deleted participants and corresponding changes in the sampling and inspection schedule.

e. The GMP shall:

i. Identify the participants of the GMP by name, location, and WDID number;

ii. Include a narrative description summarizing the industrial activities of participants of the GMP and explain why the participants, as a whole, have sufficiently similar industrial activities and BMPs to be covered by a group monitoring plan;

iii. Include a list of typical potential pollutant sources associated with the group participant's facilities and recommended baseline BMPs to prevent or reduce pollutants associated with industrial activity in the storm water discharges and authorized non-storm water discharges;

iv. Provide a five-year sampling and inspection schedule in accordance with Subsections b. and d.v. above.

v. Identify the pollutants associated with industrial activity that shall be analyzed at each participant's facility in accordance with Section B.5. The selection of these pollutants shall be based upon an assessment of each facility's potential pollutant sources and likelihood that pollutants associated with industrial activity will be present in storm water discharges and authorized non-storm water discharges in significant quantities.

f. Sampling and analysis shall be conducted in accordance with the applicable requirements of this Section.

g. Unless otherwise instructed by the Regional Water Board or the State Water Board Executive Director, the GMPs shall be implemented at the beginning of the wet season (October 1).

h. All participants in an approved GMP that have not been selected to sample in a particular wet season are required to comply with all other monitoring program and reporting requirements of this Section including the submittal of an Annual Report by July 1 of each year to the appropriate Regional Water Board.

i. GMP participants subject to Federal storm water effluent limitation guidelines must perform the monitoring described in Section B.6. and submit the results of the monitoring to the appropriate Regional Water Board within the facility operator's Annual Report.

j. GMPs and Group Evaluation Reports should be prepared in accordance with State Water Board (or Regional Water Board) guidance.

k. GMP participants may receive Sampling and Analysis Reduction sampling credit in accordance with the following conditions:

i. Current or prior participants (group participants) of approved GMPs, who have not collected and analyzed samples from six storm events as required in Section B.7.b.i.(1), may substitute credit earned through participation in a GMP for up to four of the six required storm events. Credits for GMP participation shall be calculated as follows:

(1) Credit may only be earned in years of participation where the GMP participant was not scheduled to sample and the GMP was approved.

(2) One credit will be earned for each year of valid GMP participation.

(3) One additional credit may be earned for each year the overall GMP sample collection performance is greater than 75 percent.

ii. GMP participants substituting credit as calculated above shall provide proof of GMP participation and certification that all the conditions in Section B.12.b.i. have been met. GMP participants substituting credit in accordance with Section B.15.k.i.(3) shall also provide GMP sample collection performance documentation.

iii. GMP participants that qualify for Sampling and Analysis Reduction and have already sampled a storm event after October 1, 1997 shall only be required to sample one additional storm event during the remainder of this General Permit in accordance with the "Sample 2" schedule (or "Sample 1" schedule when certification filed for the wet season beginning October 1, 2001) in Table C of this Section.

n. Group leaders shall furnish, within 60 days of receiving a request from the State Water Board or Regional Water Board, any GMP information and documentation necessary to verify the Section B.15.k. sampling credits. Group leaders may also provide this information and documentation to the group participants.

16. *Watershed Monitoring Option*

Regional Water Boards may approve proposals to substitute watershed monitoring for some or all of the requirements of this Section if the Regional Water Board finds that the watershed monitoring will provide substantially similar monitoring information in evaluating facility operator compliance with the requirements of this General Permit.

TABLE D
ADDITIONAL ANALYTICAL PARAMETERS

Subsector	SIC	Activity Represented	Parameters
SECTOR A. TIMBER PRODUCTS			
A1	2421	General Sawmills and Planing Mills	**COD;TSS;Zn**
A2	2491	Wood Preserving	**As;Cu**
A3	2411	Log Storage and Handling	**TSS**
A4	2426	Hardwood Dimension and Flooring Mills	**COD;TSS**
A4	2429	Special Product Sawmills, Not Elsewhere Classified	**COD;TSS**
A4	243X	Millwork, Veneer, Plywood, and Structural Wood	**COD;TSS**
A4	(except 2434--Wood Kitchen Cabinet Manufacturers)		
A4	244X	Wood Containers	**COD;TSS**
A4	245X	Wood Buildings and Mobile Homes	**COD;TSS**
A4	2493	Reconstituted Wood Products	**COD;TSS**
A4	2499	Wood Products, Not Elsewhere Classified	
SECTOR B. PAPER AND ALLIED PRODUCTS MANUFACTURING			
B1	261X	Pulp Mills	
B2	262X	Paper Mills	
B3	263X	Paperboard Mills	**COD**
B4	265X	Paperboard Containers and Boxes	
B5	267X	Converted Paper and Paperboard Products, Except Containers and Boxes	
SECTOR C. CHEMICAL AND ALLIED PRODUCTS MANUFACTURING			
C1	281X	Industrial Inorganic Chemicals	**Al;Fe;N+N**
C2	282X	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic, and Other Manmade Fibers Except Glass	**Zn**
C3	283X	Drugs	
C4	284X	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations	**N+N;Zn**
C5	285X	Paints, Varnishes, Lacquers, Enamels, and Allied Products	
C6	286X	Industrial Organic Chemicals	
C7	287X	Nitrogenous and Phosphatic Basic Fertilizers, Mixed Fertilizer, Pesticides, and Other Agricultural Chemicals	**Fe;N+N;Pb;Zn;P**
C8	289X	Miscellaneous Chemical Products	
	3952	Inks and Paints, Including China Painting Enamels, India Ink, (limited to list) Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints, and Artist's Watercolors	
SECTOR D. ASPHALT PAVING/ROOFING MATERIALS MANUFACTURERS AND LUBRICANT MANUFACTURERS			
D1	295X	Asphalt Paving and Roofing Materials	**TSS**
D2	2992	Lubricating Oils and Greases	

Parameter Names

Al - Aluminum	Cd - Cadmium	Cu - Copper	Mg - Magnesium	BOD - Biochemical Oxygen Demand
As - Arsenic	CN - Cyanide	Fe - Iron	Ag - Silver	N + N - Nitrate & Nitrite Nitrogen
NH_3- Ammonia	Hg - Mercury	P - Phosphorus	Se - Selenium	Pb - Lead
Zn - Zinc	TSS -Total Suspended Solids	COD - Chemical Oxygen Demand		

Subsector SIC Activity Represented Parameters

SECTOR E. GLASS, CLAY, CEMENT, CONCRETE, AND GYPSUM PRODUCT MANUFACTURING

E1	3211	Flat Glass	
E1	322X	Glass and Glassware, Pressed or Blown	
E1	323X	Glass Products Made of Purchased Glass	
E2	3241	Hydraulic Cement	
E3	325X	Structural Clay Products	**Al**
E3	326X	Pottery and Related Products	**Al**
E3	3297	Non-Clay Refractories	**Al**
E4	327X	Concrete, Gypsum, and Plaster Products (Except Lime) (except 3274).	**TSS;Fe**
E4	3295	Minerals and Earths, Ground, or Otherwise Treated	**TSS;Fe**

SECTOR F. PRIMARY METALS

F1	331X	Steel Works, Blast Furnaces, Rolling & Finishing Mill	**Al;Zn**
F2	332X	Iron and Steel Foundries	**Al;TSS;Cu;Fe;Zn**
F3	333X	Primary Smelting and Refining of Nonferrous Metals	
F4	334X	Secondary Smelting and Refining of Nonferrous Metals	
F5	335X	Rolling, Drawing, and Extruding of Nonferrous Metals	**Cu;Zn**
F6	336X	Nonferrous Foundries (Castings)	**Cu;Zn**
F7	339X	Miscellaneous Primary Metal Products	

SECTOR G. METAL MINING (ORE MINING AND DRESSING) EXCEPT INACTIVE METAL MINING ACTIVITIES ON FEDERAL LANDS WHERE AN OPERATOR CANNOT BE IDENTIFIED

G1	101X	Iron Ores	
G2	102X	Copper Ores	**TSS;COD;N+N**
G3	103X	Lead and Zinc Ores	
G4	104X	Gold and Silver Ores	
G5	106X	Ferroalloy Ores, Except Vanadium	
G6	108X	Metal Mining Services	
G7	109X	Miscellaneous Metal Ores	

SECTOR H. COAL MINES AND COAL MINING-RELATED FACILITIES

NA	12XX	Coal Mines and Coal Mining-Related Facilities	**TSS;Al;Fe**

SECTOR I. COAL MINES AND COAL MINING-RELATED FACILITIES

I1	131X	Crude Petroleum and Natural Gas	
I2	132X	Natural Gas Liquids	
I3	138X	Oil and Gas Field Services	

SECTOR J. MINERAL MINING AND DRESSING EXCEPT INACTIVE MINERAL MINING ACTIVITIES OCCURRING ON FEDERAL LANDS WHERE AN OPERATOR CANNOT BE IDENTIFIED

J1	141X	Dimension Stone	**TSS**
J1	142X	Crushed and Broken Stone, Including Rip Rap	**TSS**
J1	148X	Nonmetallic Minerals, Except Fuels	**TSS**
J2	144X	Sand and Gravel	**TSS;N+N**
J3	145X	Clay, Ceramic, and Refractory Materials	
J4	147X	Chemical and Fertilizer Mineral Mining	
J4	149X	Miscellaneous Nonmetallic Minerals, Except Fuels	

Subsector	SIC	Activity Represented	Parameters
SECTOR K. HAZARDOUS WASTE TREATMENT STORAGE OR DISPOSAL FACILITIES			
NA	4953	Hazardous Waste Treatment Storage or Disposal	**NH_3;Mg;COD;As Cd;CN;Pb Hg;Se;**Ag
SECTOR L. LANDFILLS AND LAND APPLICATION SITES			
NA	4953	Landfills and Land Application Sites That Receive or Have Received Industrial Wastes, Except Inactive Landfills or Land Applications Sites Occurring on Federal Lands Where an Operator Cannot be Identified	**TSS;Fe**
SECTOR M. AUTOMOBILE SALVAGE YARDS			
NA	5015	Facilities Engaged in Dismantling or Wrecking Used Motor Vehicles for Parts Recycling or Resale and for Scrap	**TSS;Fe;Pb;Al**
SECTOR N. SCRAP RECYCLING FACILITIES			
NA	5093	Processing, Reclaiming, and Wholesale Distribution of Scrap and Waste Materials	**TSS;Fe;Pb Al;Cu;Zn;COD**
SECTOR O. STEAM ELECTRIC GENERATING FACILITIES			
NA	4911	Steam Electric Power Generating Facilities	**Fe**
SECTOR P. LAND TRANSPORTATION FACILITIES THAT HAVE VEHICLE AND EQUIPMENT MAINTENANCE SHOPS AND/OR EQUIPMENT CLEANING OPERATIONS			
P1	40XX	Railroad Transportation	
P2	41XX	Local and Highway Passenger Transportation	
P3	42XX	Motor Freight Transportation and Warehousing	
P4	43XX	United States Postal Service	
P5	5171	Petroleum Bulk Stations and Terminals	
SECTOR Q. WATER TRANSPORTATION FACILITIES THAT HAVE VEHICLE (VESSEL) & EQUIPMENT MAINTENANCE SHOPS AND/OR EQUIPMENT CLEANING OPERATIONS			
NA	44XX	Water Transportation	**Al;Fe;Pb;Zn**
SECTOR R. SHIP AND BOAT BUILDING OR REPAIRING YARDS			
NA	373X	Ship and Boat Building or Repairing Yards	
SECTOR S. AIR TRANSPORTATION FACILITIES			
NA	45XX	Air Transportation Facilities That Have Vehicle Maintenance Ships, Material Handing Facilities, Equipment Cleaning Operations, or Airport and/or Aircraft Deicing/Anti-icing Operations	**BOD;COD;NH_3;pH**

Subsector	SIC	Activity Represented	Parameters
SECTOR T. TREATMENT WORKS			
NA	4952	Treatment Works Treating Domestic Sewage or Any Other Sewage Sludge or Wastewater Treatment Device or System Used in the Storage, treatment, recycling, or Reclamation of Municipal or Domestic Sewage with a Design Flow of 1.0 MGD or More or Required to Have an Approved Pretreatment Program	
SECTOR U. FOOD AND KINDRED PRODUCTS			
U1	201X	Meat Products	
U2	202X	Dairy Products	
U3	203X	Canned, Frozen and Preserved Fruits, Vegetables and Food Specialties	
U4	204X	Grain Mill Products	**TSS**
U5	205X	Bakery Products	
U6	206X	Sugar and Confectionery Products	
U7	207X	Fats and Oils	**BOD;COD;TSS;N+N**
U8	208X	Beverages	
U9	209X	Miscellaneous Food Preparations and Kindred Products	
NA	21XX	Tobacco Products	
SECTOR V. TEXTILE MILLS, APPAREL, AND OTHER FABRIC PRODUCT MANUFACTURING			
V1	22XX	Textile Mill Products	
V2	23XX	Apparel and Other Finished Products Made From Fabrics and Similar Materials	
SECTOR W. FURNITURE AND FIXTURES			
NA	25XX	Furniture and Fixtures	
NA	2434	Wood Kitchen Cabinets	
SECTOR X. PRINTING AND PUBLISHING			
NA	2732	Book Printing	
NA	2752	Commercial Printing, Lithographic	
NA	2754	Commercial Printing, Gravure	
NA	2759	Commercial Printing, Nor Elsewhere Classified	
NA	2796	Platemaking and Related Services	
SECTOR Y. RUBBER, MISCELLANEOUS PLASTIC PRODUCTS, AND MISC. MANUFACTURING INDUSTRIES			
Y1	301X	Tires and Inner Tubes	**Zn**
Y1	302X	Rubber and Plastics Footwear	**Zn**
Y1	305X	Gaskets, Packing, and Sealing Devices and Rubber and Plastics Hose and Belting	**Zn**
Y1	306X	Fabricated Rubber Products, Not Elsewhere Classified	**Zn**
Y2	308X	Miscellaneous Plastics Products	

Subsector	SIC	Activity Represented	Parameters
Y2	393X	Musical Instruments	
Y2	394X	Dolls, Toys, Games, and Sporting and Athletic Goods	
Y2	395X	Pens, Pencils, and Other Artists' Materials	
Y2	396X	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal	
Y2	399X	Miscellaneous Manufacturing Industries	
SECTOR Z. LEATHER TANNING AND FINISHING			
NA	311X	Leather Tanning and Finishing	
NA	NA	Facilities that Make Fertilizer Solely From Leather Scraps and Leather Dust	
SECTOR AA. FABRICATED METAL PRODUCTS			
AA1	3429	Hardware, Not Elsewhere Classified	**Zn;N+N;Fe;Al**
AA1	3441	Fabricated Structural Metal	**Zn;N+N;Fe;Al**
AA1	3442	Metal Doors, Sash, Frames, Molding, and Trim	**Zn;N+N;Fe;Al**
AA1	3443	Fabricated Plate Work (Boiler Shops)	**Zn;N+N;Fe;Al**
AA1	3444	Sheet Metal Work	**Zn;N+N;Fe;Al**
AA1	3451	Screw Machine Products	**Zn;N+N;Fe;Al**
AA1	3452	Bolts, Nuts, Screws, Rivets, and Washers	**Zn;N+N;Fe;Al**
AA1	3462	Iron and Steel Forgings	**Zn;N+N;Fe;Al**
AA1	3471	Electroplating, Plating, Polishing, Anodizing, and Coloring	**Zn;N+N;Fe;Al**
AA1	3494	Valves and Pipe Fittings, Not Elsewhere Classified	**Zn;N+N;Fe;Al**
AA1	3496	Miscellaneous Fabricated Wire Products.	**Zn;N+N;Fe;Al**
AA1	3499	Fabricated Metal Products, Not Elsewhere Classified	**Zn;N+N;Fe;Al**
AA1	391X	Jewelry, Silverware, and Plated Ware	**Zn;N+N;Fe;Al**
AA2	3479	Coating, Engraving, and Allied Services	**Zn;N+N**
SECTOR AB. TRANSPORTATION EQUIPMENT, INDUSTRIAL OR COMMERCIAL MACHINERY			
NA	35XX	Industrial and Commercial Machinery (except 357X Computer and Office Equipment)	
NA	37XX	Transportation Equipment (except 373X Ship and Boat Building and Repairing	
SECTOR AC. ELECTRONIC, ELECTRICAL. PHOTOGRAPHIC, AND OPTICAL GOODS			
NA	36XX	Electronic and Other Electrical Equipment and Components, Except Computer Equipment	
NA	38XX	Measuring, Analyzing, and Controlling Instruments; Photographic, Medical, and Optical Goods; Watches and Clocks	
NA	357X	Computer and Office Equipment	

Section C: STANDARD PROVISIONS

1. Duty to Comply

The facility operator must comply with all of the conditions of this General Permit. Any General Permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act and is grounds for (a) enforcement action for (b) General Permit termination, revocation and reissuance, or modification or (c) denial of a General Permit renewal application.

The facility operator shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement.

2. General Permit Actions

This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the facility operator for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any General Permit condition.

If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition, and the facility operator so notified.

3. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a facility operator in an enforcement action that it would have been necessary to halt or reduce the general permitted activity in order to maintain compliance with the conditions of this General Permit.

4. Duty to Mitigate

The facility operator shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

The facility operator at all times shall properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the facility operator to achieve compliance with the conditions of this General Permit and with the requirements of storm water pollution prevention plans (SWPPPs). Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a facility operator when necessary to achieve compliance with the conditions of this General Permit.

6. Property Rights

This General Permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

7. Duty to Provide Information

The facility operator shall furnish the Regional Water Quality Control Board (Regional Water Board), State Water Resources Control Board (State Water Board), U.S. Environmental Protection Agency (U.S. EPA), or local storm water management agency, within a reasonable time specified by the agencies, any requested information to determine compliance with this General Permit. The facility operator shall also furnish, upon request, copies of records required to be kept by this General Permit.

8. Inspection and Entry

The facility operator shall allow the Regional Water Board, State Water Board, U.S. EPA, and local storm water management agency, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the facility operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this General Permit;

b. Have access to and copy at reasonable times any records that must be kept under the conditions of this General Permit;

c. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment) that are related to or may impact storm water discharge or authorized non-storm water discharge; and

d. Conduct monitoring activities at reasonable times for the purpose of ensuring General Permit compliance.

9. Signatory Requirements

a. All Notices of Intent (NOIs) submitted to the State Water Board shall be signed as follows:

(1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (b) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).

b. All reports, certifications, or other information required by the General Permit or requested by the Regional Water Board, State Water Board, U.S. EPA, or local storm water management agency shall be signed by a person described above or by a duly authorized representative. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above and retained as part of the SWPPP.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for named position.)

(3) If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be attached to the SWPPP prior to submittal of any reports, certifications, or information signed by the authorized representative.

10. Certification

Any person signing documents under Provision 9. above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

11. Reporting Requirements

a. Planned changes: The facility operator shall give advance notice to the Regional Water Board and local storm water management agency of any planned physical alteration or additions to the general permitted facility. Notice is required under this provision only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.

b. Anticipated noncompliance: The facility operator will give advance notice to the Regional Water Board and local storm water management agency of any planned changes at the permitted facility which may result in noncompliance with General Permit requirements.

c. Compliance schedules: Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule of this General Permit shall be submitted no later than 14 days following each scheduled date.

d. Noncompliance reporting: The facility operator shall report any noncompliance at the time monitoring reports are submitted. The written submission shall contain (1) a description of the noncompliance and its cause; (2) the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and (3) steps taken or planned to reduce and prevent recurrence of the noncompliance.

12. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or relieve the facility operator from any responsibilities, liabilities, or penalties to which the facility operator is or may be subject under Section 311 of the CWA.

13. Severability

The provisions of this General Permit are severable; and if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

14. Reopener Clause

This General Permit may be modified, revoked, and reissued, or terminated for cause due to promulgation of amended regulations, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 CFR 122.62, 122.63, 122.64, and 124.5. This General Permit may be reopened to modify the provisions regarding authorized non-storm water discharges specified in Section D. Special Conditions.

15. Penalties for Violations of General Permit Conditions.

a. Section 309 of the CWA provides significant penalties for any person who violates a General Permit condition

implementing Sections 301, 302, 306, 307 308, 318, or 405 of the CWA, or any General Permit condition or limitation implementing any such section in a General Permit issued under Section 402. Any person who violates any General Permit condition of this General Permit is subject to a civil penalty not to exceed $25,000 per day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA.

b. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties in some cases greater than those under the CWA.

16. Availability

A copy of this General Permit shall be maintained at the facility and be available at all times to the appropriate facility personnel and to Regional Water Board and local agency inspectors.

17. Transfers

This General Permit is not transferable from one facility operator to another facility operator nor may it be transferred from one location to another location. A new facility operator of an existing facility must submit an NOI in accordance with the requirements of this General Permit to be authorized to discharge under this General Permit.

18. Continuation of Expired General Permit

This General Permit continues in force and effect until a new general permit is issued or the State Water Board rescinds the General Permit. Facility operators authorized to discharge under the expiring general permit are required to file an NOI to be covered by the reissued General Permit.

19. Penalties for Falsification of Reports

Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both.

Attachment 1

FACILITIES COVERED BY THIS GENERAL PERMIT

Industrial facilities include Federal, State, municipally owned, and private facilities from the following categories:

1. FACILITIES SUBJECT TO STORM WATER EFFLUENT LIMITATIONS GUIDELINES, NEW SOURCE PERFORMANCE STANDARDS, OR TOXIC POLLUTANT EFFLUENT STANDARDS (40 Code of Federal Regulations (CFR) SUBCHAPTER N). Currently, categories of facilities subject to storm water effluent limitations guidelines are Cement Manufacturing (40 CFR Part 411), Feedlots (40 CFR Part 412), Fertilizer Manufacturing (40 CFR Part 418), Petroleum Refining (40 CFR Part 419), Phosphate Manufacturing (40 CFR Part 422), Steam Electric (40 CFR Part 423), Coal Mining (40 CFR Part 434), Mineral Mining and Processing (40 CFR Part 436), Ore Mining and Dressing (40 CFR Part 440), and Asphalt Emulsion (40 CFR Part 443).

2. MANUFACTURING FACILITIES: Standard Industrial Classifications (SICs) 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285) 29, 311, 32 (except 323), 33, 3441, and 373.

3. OIL AND GAS/MINING FACILITIES: SICs 10 through 14 including active or inactive mining operations (except for areas of coal mining operations meeting the definition of a reclamation area under 40 CFR 434.11(l) because of performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act (SMCRA) authority has been released, or except for area of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990); oil and gas exploration, production, processing, or treatment operations; or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, by-products, or waste products located on the site of such operations. Inactive mining operations are mined sites that are not being actively mined but which have an identifiable facility operator. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined material; or sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.

4. HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES: Includes those operating under interim status or a general permit under Subtitle C of the Federal Resource, Conservation, and Recovery Act (RCRA).

5. LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS: Sites that receive or have received industrial waste from any of

the facilities covered by this General Permit, sites subject to regulation under Subtitle D of RCRA, and sites that have accepted wastes from construction activities (construction activities include any clearing, grading, or excavation that results in disturbance of five acres or more).

6. RECYCLING FACILITIES: SICs 5015 and 5093. These codes include metal scrapyards, battery reclaimers, salvage yards, motor vehicle dismantlers and wreckers, and recycling facilities that are engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste material such as bottles, wastepaper, textile wastes, oil waste, etc.

7. STEAM ELECTRIC POWER GENERATING FACILITIES: Includes any facility that generates steam for electric power through the combustion of coal, oil, wood, etc.

8. TRANSPORTATION FACILITIES: SICs 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) or other operations identified herein that are associated with industrial activity.

9. SEWAGE OR WASTEWATER TREATMENT WORKS: Facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility with a design flow of one million gallons per day or more or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act.

10. MANUFACTURING FACILITIES WHERE INDUSTRIAL MATERIALS, EQUIPMENT, OR ACTIVITIES ARE <u>EXPOSED</u> TO STORM WATER: SICs 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-4225.

STORM WATER CONTACTS FOR THE STATE AND REGIONAL WATER BOARDS

See Storm Water Contacts at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/contact.shtml

NOTICE OF INTENT (NOI) INSTRUCTIONS

TO COMPLY WITH STATE WATER RESOURCES CONTROL BOARD WATER QUALITY ORDER NO. 97-03-DWQ NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO. CAS000001

Who Must Submit

The facility operator must submit an NOI for each industrial facility that is required by U.S. Environmental Protection Agency (U.S.EPA) regulations to obtain a storm water permit. The required industrial facilities are listed in Attachment 1 of the General Permit and are also listed in 40 Code of Federal Regulations Section 122.26(b)(14).

The facility operator is typically the owner of the business or operation where the industrial activities requiring a storm water permit occur. The facility operator is responsible for all permit related activities at the facility.

Where operations have discontinued and significant materials remain on site (such as at closed landfills), the landowner may be responsible for filing an NOI and complying with this General Permit. Landowners may also file an NOI for a facility if the landowner, rather than the facility operator, is responsible for compliance with this General Permit.

How and Where to Apply

The completed NOI form, a site map, and appropriate fee must be mailed to the State Water Resources Control Board (State Water Board) at the following address:

State Water Resources Control Board
Division of Water Quality
P.O. Box 1977
Sacramento, CA 95812-1977
Attn: Storm Water Permitting Unit

Please Note: Do not send the original or copies of the NOI submittal to the Regional Water Quality Control Board (Regional Water Board). The original NOI will be forwarded to the Regional Water Board after processing.

Do not send a copy of your Storm Water Pollution Prevention Plan (SWPPP) with your NOI submittal. Your SWPPP is to be kept on site and made available for review upon request.

When to Apply

Facility operators of existing facilities must file an NOI in accordance with these instructions by March 30, 1992. Facility

operators of new facilities (those beginning operations after March 30, 1992) must file an NOI in accordance with these instructions at least 14 days prior to the beginning of operations.

Once the completed NOI, site map, and appropriate fee have been submitted to the State Water Board, your NOI will be processed and you will be issued a receipt letter with a Waste Discharge Identification (WDID) Number. Please refer to this number when you contact either the State or Regional Water Boards.

Fees

The total annual fee is $1359.00. Checks should be made payable to: SWRCB

Change of Information

If the information provided on the NOI or site map changes, you should report the changes to the State Water Board using an NOI form. Section I of the line-by-line instructions includes information regarding changes to the NOI.

Questions

If you have any questions completing the NOI, please call the appropriate Regional Water Board (Attachment 2) or the State Water Board at (916) 341-5538.

NOI LINE-BY-LINE INSTRUCTIONS

Please type or print your responses on the NOI. Please complete the NOI form in its entirety and sign the certification.

Section I--NOI STATUS

Check box "A" if this is a new NOI registration.

Check box "B" if you are reporting changes to the NOI (e.g., new contact person, phone number, mailing address). Include the facility WDID #. Highlight all the information that has been changed.

Please note that a change of information **does not** apply to a change of facility operator or a change in the location of the facility. These changes require a Notice of Termination (NOT) and submittal of a new NOI and annual fee. Contact the State Water Board or Regional Water Boards for more information on the NOT Form and instructions.

Regardless of whether you are submitting a new or revised NOI, you must complete the NOI in its entirety and the NOI must be signed.

Section II--Facility Operator Information

Part A: The facility operator is the legal entity that is responsible for all permit related compliance activities at the facility. In most cases, the facility operator is the owner of the business or operation where the industrial activity occurs. Give the legal name and the address of the person, firm, public organization, or any other entity that is responsible for complying with the General Permit.

Part B: Check the box that indicates the type of operation.

Section III--Facility Site Information

Part A: Enter the facility's official or legal name and provide the address. Facilities that do not have a street address must provide cross-streets or parcel numbers. Do not include a P.O. Box address in Part A.

Part B: Enter the mailing address of the facility if different than Part A. This address may be a P.O. Box.

The contact person should be the plant or site manager who is familiar with the facility and responsible for overseeing compliance of the General Permit requirements.

Part C: Enter the total size of the facility in either acres or square feet. Also include the percentage of the site that is impervious (areas that water cannot soak into the ground, such as concrete, asphalt, and rooftops).

Part D: Determine the Standard Industrial Classification (SIC) code which best identifies the industrial activity that is taking place at the facility. This information can be obtained by referring to the Standard Industrial Classification Manual prepared by the Federal Office of Management and Budget which is available at public libraries. The code you determine should identify the industrial activity that requires you to submit the NOI. (For example, if the business is high school education and the activity is school bus maintenance, the code you choose would be bus maintenance, not education.) Most facilities have only one code; however, additional spaces are provided for those facilities that have more than one activity.

Part E: Identify the title of the industrial activity that requires you to submit the NOI (e.g., the title of SIC Code 2421 is Sawmills and Planing Mills, General). If you cannot identify the title, provide a description of the regulated activity(s).

Section IV--Address for Correspondence

Correspondence relative to the permit will be mailed occasionally. Check the box which indicates where you would like such correspondence delivered. If you want correspondence sent to another contact person or address different than indicated in Section II or Section III then include the information on an extra sheet of paper.

Section V--Billing Address Information

To continue coverage under the General Permit, the annual fee must be paid. Use this section to indicate where the annual fee invoices should be mailed. Enter the billing address if different than the address given in Sections II or III.

Section VI--Receiving Water Information

Provide the name of the receiving water where storm water discharge flows from your facility. A description of each option is included below.

1. Directly to waters of the United States: Storm water discharges directly from the facility to a river, creek, lake, ocean, etc. Enter the name of the receiving water (e.g., Boulder Creek).

2. Indirectly to waters of the United States: Storm water discharges over adjacent properties or right-of-ways prior to discharging to waters of the United States. Enter the name of the closest receiving water (e.g., Clear Creek).

Section VII--Implementation of Permit Requirements

Parts A and B:	Check the boxes that best describe the status of the Storm Water Pollution Prevention Plan (SWPPP) and the Monitoring Program.
Part C:	Check yes or no to questions 1 through 4. If you answer no to any question, you need to assign a person to these tasks immediately.

As a permit holder you are required to have an SWPPP and Monitoring Program in place prior to the beginning of facility operations. Failure to do so is in direct violation of the General Permit. Do not send a copy of your SWPPP with your NOI submittal.

Please refer to Sections A and B of the General Permit for additional information regarding the SWPPP and Monitoring Program.

Section VIII--Site Map

Provide a "to scale" drawing of the facility and its immediate surroundings. Include as much detail about the site as possible. At a minimum, indicate buildings, material handling and storage areas, roads, names of adjacent streets, storm water discharge points, sample collection points, and a north arrow. Whenever

possible limit the map to a standard size sheet of paper (8.5" x 11" or 11" x 17"). **Do not send blueprints** unless you are sending one page and it meets the size limits as defined above.

A location map may also be included, especially in cases where the facility is difficult to find, but are <u>not to be submitted as a substitute for the site map</u>. The location map can be created from local street maps and U.S. Geological Survey (USGS) quadrangle maps, etc.

A revised site map must be submitted whenever there is a significant change in the facility layout (e.g., new building, change in storage locations, boundary change, etc.).

Section IX--Certification

This section should be read by the facility operator. The certification provides assurances that the NOI and site map were completed by the facility operator in an accurate and complete fashion and with the knowledge that penalties exist for providing false information. It also requires the Responsible Party to certify that the provisions in the General Permit will be complied with.

The NOI must be signed by:

For a Corporation: a responsible corporate officer (or authorized individual).

For a Partnership or Sole Proprietorship: a general partner or the proprietor, respectively.

For a Municipality, State, or other non-Federal Public Agency: either a principal executive officer or ranking elected official.

For a Federal Agency: either the chief or senior executive officer of the agency.

State of California
State Water Resources Control Board

NOTICE OF INTENT

TO COMPLY WITH THE TERMS OF THE
GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH **INDUSTRIAL ACTIVITY** (WQ ORDER No. 97-03-DWQ)
(*Excluding Construction Activities*)

SECTION I. NOI STATUS (please check only one box)

A. [ ] New Permittee B. [ ] Change of Information WDID # |___|___|___|___|___|___|___|___|___|___|___|

SECTION II. FACILITY OPERATOR INFORMATION (See instructions)

A. NAME: Phone: |___|___|___| -- |___|___|___| -- |___|___|___|___|

Mailing Address:

City: State: Zip Code: |___|___|___|___|___| -- |___|___|___|___|

Contact Person:

B. OPERATOR TYPE:
(check one) 1.[ ] Private Individual 2.[ ]Business 3.[ ]Municipal 4.[ ]State 5.[ ]Federal 6.[ ]Other

SECTION III. FACILITY SITE INFORMATION

A. FACILITY NAME Phone: |___|___|___| -- |___|___|___| -- |___|___|___|___|

Facility Location: County:

City: State: C I A Zip Code: |___|___|___|___|___| -- |___|___|___|___|

B. MAILING ADDRESS:

City: State: Zip Code: |___|___|___|___|___| -- |___|___|___|___|

Contact Person:

C. FACILITY INFORMATION (check one)
Total Size of Site: _____ Acres [ ] Sq. Ft. [ ]

Percent of Site Impervious (*including rooftops*) |_____| %

D. SIC CODE(S) OF REGULATED ACTIVITY: E. REGULATED ACTIVITY (*describe each SIC code*)**:**

1. |___|___|___|___|

2. |___|___|___|___|

3. |___|___|___|___|

FOR STATE USE ONLY:

SECTION IV. ADDRESS FOR CORRESPONDENCE

I_I Facility Operator Mailing Address (Section II)   I_I Facility Mailing Address (Section III, B.)   I_I Both

SECTION V. BILLING ADDRESS INFORMATION

SEND BILL TO: [ ] Facility Operator Mailing Address (Section II) [ ] Facility Mailing Address (Section III, B.) [ ] Other (*enter information below*)

Name: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

Phone: I_I_I_I -- I_I_I_I -- I_I_I_I_I

Mailing Address: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

City: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

State: _I_

Zip Code: I_I_I_I_I_I -- I_I_I_I_I

Contact Person: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

SECTION VI. RECEIVING WATER INFORMATION

Your facility's storm water discharges flow: (*check one*) [ ] Directly OR [ ] Indirectly to waters of the United States.

Name of receiving water: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I
(river, lake, stream, ocean, etc.)

SECTION VII. IMPLEMENTATION OF PERMIT REQUIREMENTS

A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (*check one*)
[ ] A SWPPP has been prepared for this facility and is available for review.
[ ] A SWPPP will be prepared and ready for review by (enter date): ____/____/____.

B. MONITORING PROGRAM (check one)
[ ] A Monitoring Program has been prepared for this facility and is available for review.
[ ] A Monitoring Program will be prepared and ready for review by (enter date): ____/____/____.

C. PERMIT COMPLIANCE RESPONSIBILITY
Has a person been assigned responsibility for:

1. Inspecting the facility throughout the year to identify any potential pollution problems? .... ____YES ____NO
2. Collecting storm water samples and having them analyzed?........ ____YES ____NO
3. Preparing and submitting an annual report by July 1 of each year? .... ____YES ____NO
4. Eliminating discharges other than storm water (*such as equipment or vehicle wash-water*) into the storm drain?........ ____YES ____NO

SECTION VIII. SITE MAP

I HAVE ENCLOSED A SITE MAP YES [ ] A new NOI submitted without a site map will be rejected.

SECTION IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that I have read the entire General Permit, including all attachments, and agree to comply with and be bound by all of the provisions, requirements, and prohibitions of the permit, including the development and implementation of a Storm Water Pollution Pervention Plan and a Monitoring Program Plan will be complied with."

Printed Name: ______________________________

Signature: ______________________________ Date ______________________________

Title: ______________________________

DEFINITIONS

1. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment measures, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may include any type of pollution prevention and pollution control measure necessary to achieve compliance with this General Permit.

2. Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500 as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; 33 USC. 1251 et seq.

3. "Facility" is a collection of industrial processes discharging storm water associated with industrial activity within the property boundary or operational unit.

4. "Non-Storm Water Discharge" means any discharge to storm sewer systems that is not composed entirely of storm water.

5. "Significant Materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERLCA); any chemical the facility is required to report pursuant to Section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

6. "Significant Quantities" is the volume, concentrations, or mass of a pollutant that can cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.

7. "Significant Spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR 110.10 and 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).

8. "Storm water" means storm water runoff, snow melt runoff, and storm water surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

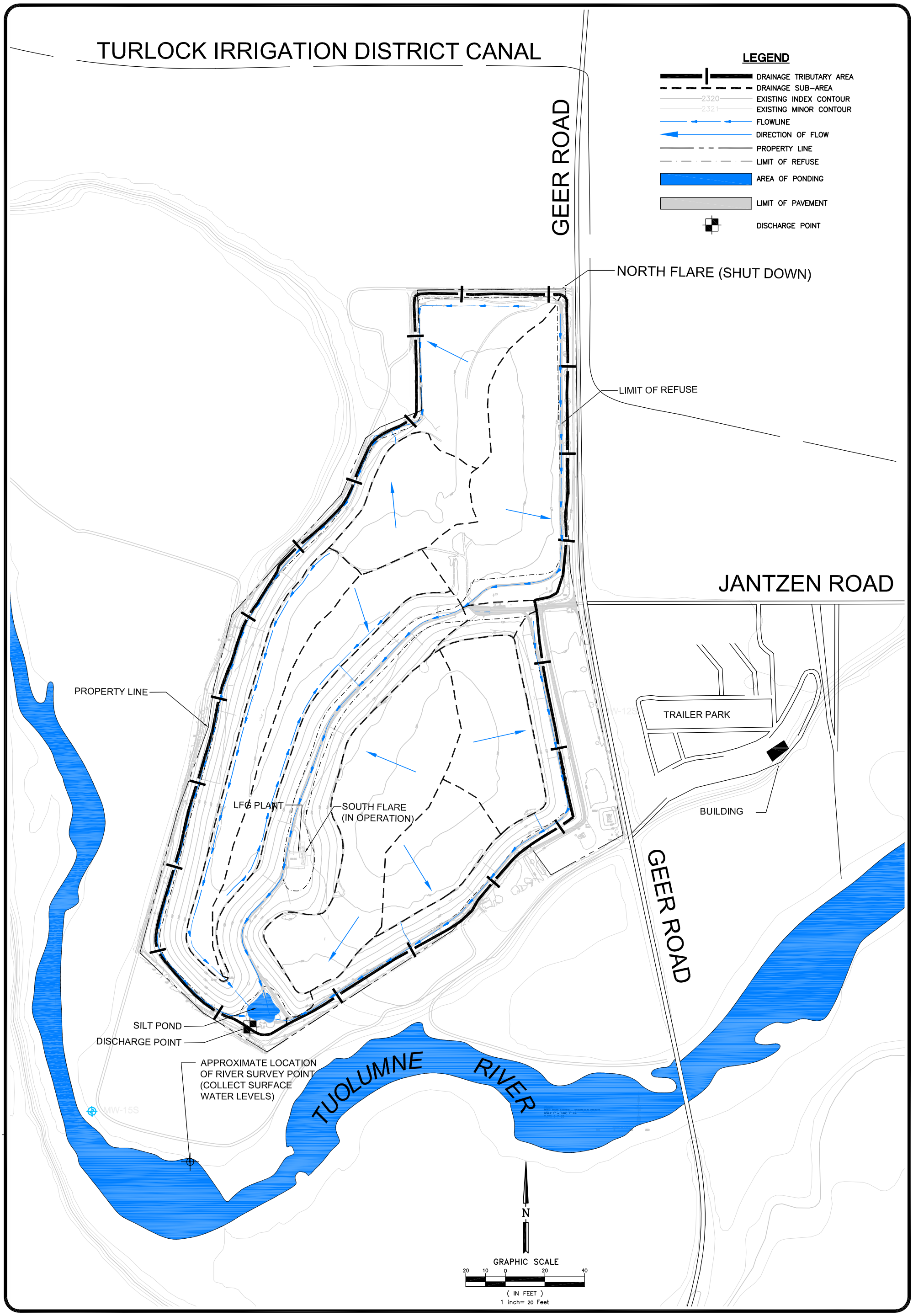
9. "Storm Water Associated with Industrial Activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program. For the facilities identified in Categories 1 through 9 of Attachment 1 of this General Permit, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials; manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR Part 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

   For the facilities identified in Category 10 of Attachment 1 of this General Permit, the term only includes storm water discharges from all areas listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery <u>are exposed to storm water</u>.

   Material handling activities include the: storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in this paragraph) include those facilities designated under 40 CFR 122.26(a)(1)(v).

ACRONYM LIST

BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMPs	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Federal Superfund)
CFR	Code of Federal Regulations
CWA	Clean Water Act
General Permit	General Industrial Activities Storm Water Permit
GMP	Group Monitoring Plan
NEC	No Exposure Certification
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
O&G	Oil and Grease
RCRA	Resource, Conservation, and Recovery Act
Regional Water Board	Regional Water Quality Control Board
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act of 1986
SIC	Standard Industrial Classification
SMCRA	Surface Mining Control and Reclamation Act
SPCC	Spill Prevention Control and Countermeasures
State Water Board	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U.S. EPA	U.S. Environmental Protection Agency
WDID	Waste Discharger Identification
WDRs	Waste Discharge Requirements



Sheet 1 of 1	GEER ROAD LANDFILL	BAS BRYAN A. STIRRAT & ASSOCIATES CIVIL AND ENVIRONMENTAL ENGINEERS 1360 VALLEY VISTA DRIVE DIAMOND BAR, CA. 91765 (909) 860-7777	Revisions
Rev	SWPPP FIGURE SITE MAP	Design: Drawn: Spvd: Chkd ____ Appd: Date: 6/2013	Sym Descrip Date Apd

FILE NO: G:\dwg\Geer Road\HYDRO\52-0029DRN.dwg

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2009-0051

WASTE DISCHARGE REQUIREMENTS FOR STANISLAUS COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES GEER ROAD CLASS III LANDFILL POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. The Stanislaus County Department of Environmental Resources (hereafter referred to as Discharger) owns and formerly operated the Geer Road Landfill, a municipal solid waste landfill that was closed in 1995. The landfill is eight miles east of Modesto, near the Tuolumne River in the southeast corner of Section 34, Township 3 South, Range 10 East, and the northeast corner of Section 3, Township 4 South, Range 10 East, Mount Diablo Base and Meridian, as shown in Attachment A, which is incorporated herein and made part of this Order.

2. The 168-acre facility comprises Assessor's Parcel Number 9-29-09, 9-29-12, and 18-03-13 and includes the closed Class III landfill and a sedimentation basin. The site was operated as a sanitary landfill by the County of Stanislaus from 1970 until 1990 and accepted residential, commercial, industrial (including cannery waste), and construction and demolition wastes. The landfill used a trench and fill method and consists of a single unlined landfill unit. The Discharger estimates that the landfill contains approximately 4.5 million tons of waste. The landfill was closed in 1995 with a geomembrane and vegetative soil on the top deck and compacted clay and vegetative soil on the side slopes. Closure was approved in July 1996.

3. The Discharger submitted a 31 October 2007 amended Report of Waste Discharge (RWD) as part of the Joint Technical Document (JTD) for the landfill. The information in the RWD/JTD has been used in writing these waste discharge requirements (WDRs). The RWD contains the applicable information required in Title 27, California Code of Regulations (CCR), Chapter 4, Subchapter 3, Article 4. Within the RWD, the Discharger proposed to submit an Engineering Feasibility Study (EFS) for corrective action of volatile organic compounds (VOCs) in groundwater. The EFS was submitted 13 February 2009. These WDRs include a time schedule for determining the nature and extent of VOC contamination at the north area of the landfill, and for implementing and documenting corrective actions for VOC removal from groundwater at the north and south areas of the landfill. These WDRs have also been updated since previous Order No. 5-00-087 with current site information and to ensure consistency with the Regional Water Board's plans and policies.

4. Previous WDRs for the facility, including most recent Order No. 5-00-087, classified the facility as a Class III waste disposal site. This Order continues to classify the landfill as a Class III landfill in accordance with Title 27, CCR Section 20005, et seq. (Title 27).

SITE DESCRIPTION

5. The site lies near the eastern edge of the San Joaquin Valley adjacent to the Tuolumne River. The terrain is characterized by river terraces and is gently sloping with elevations at approximately 140 feet above mean sea level.

6. The Foothills Fault zone is the nearest significant fault and is located approximately 25 miles east of the site. The maximum credible earthquake (MCE) for the Foothills Fault zone is a magnitude 6.5 event. Other regionally significant faults are located within the Coast Ranges geomorphic province to the west of the site. One of these, the Calaveras Fault, approximately 50 miles west of the landfill, may be a potential source of seismicity with an MCE of 7.5. The maximum peak bedrock acceleration expected at the landfill for an event from either the Foothills or the Calaveras Faults is approximately 0.13 g.

7. Land within 1,000 feet of the facility is used for irrigated agricultural purposes, buffer area, and residential housing. Around the perimeter of the site, agriculture is the principal use, with the predominant crops being walnuts and peaches. A 15-acre multiple family housing development, Pinewood Meadows Mobile Home Park with 174 trailer spaces, is located across Geer Road 350 feet east of the landfill.

8. The facility receives an average of 12.2 inches of precipitation per year as measured by Modesto Irrigation District. Mean evaporation is estimated to be between 65-75 inches per year. Based on these data, the average annual net evaporation is approximately 53-63 inches.

9. The 100-year, 24-hour precipitation event for Modesto is 2.43 inches, as calculated from rainfall intensity-duration-frequency curves from the County of Stanislaus Department of Environmental Resources Storm Drain Design Manual, developed with data from the California Department of Water Resources.

10. According to the Federal Insurance Administration Map, Stanislaus County, Community Panel No. 060384055A, August 1980, the landfill footprint is outside the 100-year flood plain. However, it is within Zone C (area of minimal flooding). The 100-year flood plain crosses the southwest property boundary, an area that is open land outside of the footprint of the landfill. During the winter of 1997-1998, portions of the property were flooded. The landfill area is protected by a 10-foot high berm.

11. There are four groundwater supply wells near the landfill including two immediately south of the landfill (Streeter wells) and two east of the landfill (Pine Wood Meadows Mobile Home Park wells), as shown on Attachment B, which is incorporated herein and made part of this Order. A third supply well formerly located at the mobile home park was

capped by the property owner. In 2006, the Discharger purchased a property near the northern section of the landfill and abandoned its well (former Lopez well).

WASTES AND THEIR CLASSIFICATION

12. The landfill began operation in November 1970 and was continuously operated by Stanislaus County. The landfill accepted municipal solids waste and cannery wastes. These wastes are classified as non-hazardous solid waste using the criteria in Chapter 15 of Title 23, CCR that was applicable to the landfill at that time.

SURFACE AND GROUNDWATER CONDITIONS

13. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

14. Storm runoff from the site is routed to the sedimentation basin. The sedimentation basin is in the south central area of the site, as shown on Attachment B. The basin allows suspended material to settle out from surface water runoff prior to discharge into the Tuolumne River. Discharge from the basin only occurs in very wet weather years. As of January 2009, there have been no discharges from the basin since 31 December 2001.

15. The designated beneficial uses of the Tuolumne River, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; water contact and non-contact water recreation; warm fresh water habitat; cold fresh water habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.

16. Due to topographic variations across the site, groundwater is first encountered at depths ranging between approximately 20 to 60 feet below grade. The shallow monitoring wells are screened across a 20-foot interval ranging from 40 to 80 feet in elevation above mean sea level. The shallow water-bearing zone is unconfined. The deeper zone groundwater monitoring wells are screened at about 80 to100 feet bgs in an unconfined to semiconfined aquifer that is likely in hydraulic communication with the shallow zone.

17. Groundwater gradients vary seasonally, but range from southwest to westerly. Groundwater elevations may vary up to five feet, however elevations varied by as much as 15 feet during the winter of 1997, which was unusually wet. The gradient in the shallow zone is approximately 0.31 foot per foot (ft/ft), generally toward the southwest. The gradient in the deeper aquifer is approximately 0.32 ft/ft toward the southwest. According to the Discharger, groundwater velocities calculated from transmissivity values range from 11.4 to 119 feet per year.

18. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.

GROUNDWATER MONITORING AND CORRECTIVE ACTION

19. There are 22 groundwater monitoring wells completed in the shallow groundwater zone and 12 groundwater monitoring wells in the deeper zone. The monitoring well locations are shown on Attachment B.

20. The facility is in corrective action monitoring for impacts to groundwater from VOCs. The two methods of corrective action are: (1) source control measures consisting of installation and operation of the landfill gas (LFG) extraction system and landfill capping, and (2) installation and operation of a groundwater extraction and treatment system. The groundwater extraction and treatment system is located near the southern end of the landfill, as shown on Attachment B.

21. Groundwater degradation at this site was initially identified in 1985 and later confirmed in both 1986 groundwater studies and 1987 Solid Waste Assessment Test (SWAT) water quality studies. Aromatic and halogenated VOCs are present in groundwater in the "shallow" and "deeper" groundwater zones under the landfill and downgradient of the site. The lateral and vertical extent of VOCs has not been completely defined. For example, MW-23S, located outside and southwest of the property boundary and along the river bank, has concentrations of vinyl chloride ranging from 2.3 ug/L to 3.4 ug/L. These concentrations are above the California Primary MCL of 0.5 ug/L. Vinyl chloride is a degradation product of tetrachloroethylene (PCE). MW-23S also has detected concentrations of other PCE degradation products, including 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, and trichloroethene. The deeper companion well to MW-23S, MW-23D, also has detected concentrations of Freon and PCE degradation products. Similarly, MW-15S (a shallow well), located outside the property boundary to the south of the landfill, has concentrations of Freon, PCE, and PCE degradation products. Wells along the property boundary to the north also contain halogenated VOCs. Thus, at a minimum the horizontal and vertical extent of contamination have not been completely defined to the south, southwest, and north of the landfill.

22. As of May 2007, halogenated VOCs remaining in groundwater included 1,1-dichloroethane, 1,1-dichloroethene, PCE, trichloroethene, cis- and trans-1,2-DCE, vinyl chloride, trichlorofluoromethane (Freon-11), and dichlorodifluoromethane (Freon-12). The greatest concentrations of volatiles are under the southernmost portion of the landfill and off-site to the south, southwest, and southeast. Lower concentrations of VOCs have been detected in the shallow offsite, upgradient wells to the northeast.

23. As of 2007, aromatic VOCs reported in groundwater included benzene, chlorobenzene, toluene, and 1,2-dichloropropane.

24. During 1991, arsenic was reported in monitoring wells MW-14S at 130 micrograms per liter (ug/L). During 1996, arsenic was present in shallow monitoring well MW-4S at 64 ug/L and in all four deep wells and nine other shallow wells at concentrations up to 3.8 ug/L. In 2007, a study of arsenic concentrations in the area of the landfill concluded that natural background concentrations of arsenic ranged from ND to 4.42 ug/L. The primary maximum contaminant level, a drinking water standard, for arsenic is 10 ug/L and the one-in-a-million incremental cancer risk estimate for drinking water based on the US EPA Integrated Risk Information System is 0.02 ug/L. Iron and manganese are elevated in one deep well and six shallow wells. Lead was detected in one deep well at a concentration above the Public Health Goal for drinking water as recommended by the Office of Environmental Health Hazard Assessment.

25. A LFG control system consisting of an air injection curtain was installed in 1983 along a portion of the site's southern perimeter. Phase 1 of the LFG extraction system, which included the first flare station, was in operation from 1992 to 2006 and covered the northeast one-third of the site. The system was expanded to include 45 gas wells with aboveground piping and a second flare station located near the center of the landfill. The current LFG control system is comprised of 83 extraction wells and one flare station. Many of the VOCs found in groundwater are commonly found in landfill gas. Measurements of LFG concentrations indicate that the system is capturing landfill gas from the landfill (i.e., methane). Methane in each of the shallow, medium, and deep probes around the landfill show concentrations at or near zero percent. Methane concentrations in the LFG extraction wells within the waste average about 24 percent. Perimeter gas monitoring probes were sampled in 2000, 2001, and 2006 for VOCs. In the 2006 investigation, PCE and other halogenated VOCs were detected at probes GP-01, GP-02, GP-03, GP-05, GP-08, GP-09, GP-10, GP-11, GP-13, and GP-17. Freon species were detected in all these probes. Freon 12 concentrations ranged from of 0.8 parts per billion by volume (ppbv) to 230 ppbv. In wells GP-01, GP-02, GP-03, GP-09, GP-10, GP-13, and GP-17, PCE concentrations ranged from 0.97 ppbv (GP-17) to 220 ppbv (GP-02). In the June 2001 sampling event, samples obtained from GP-17, GP-18, GP-22, GP-23, GP-24 had concentrations of PCE and other halogenated VOCs. PCE concentrations ranged from 1.7 to 6.4 ppbv. In July 2000, gas probes GP-36, GP-37, and GP-38 were sampled and had detected concentrations of 16 VOC constituents. At 850 ppbv and 2,200 ppbv, GP-38 had the highest concentrations of PCE and Freon 12, respectively.

26. As of 2006, only one flare station (the South Flare) has been operating to burn the landfill gas. The location of the flare station is shown on Attachment B. The North Flare was decommissioned in 2006 due to vandalism (Stanislaus County Sheriff case # S06-62706).

27. During 1991 and 1993, 12 groundwater extraction wells were installed as part of a groundwater remediation system to address groundwater impacts from VOCs and metals. The groundwater remediation system consists of the 12 extraction wells, a granular activated carbon (GAC) treatment system, and eight injection trenches. The injection trenches are located immediately southwest of the treatment plant which is shown on

Attachment B along the eastern side of the landfill. Groundwater is pumped from the 12 extraction wells located along the perimeter of the landfill and is pumped through a bag filter to remove suspended solids and then through two 10,000-pound GAC units, in series, to remove VOCs. Treated groundwater, prior to injection into the shallow zone via infiltration trenches, is sampled and analyzed to assess effluent quality from the treatment system and to evaluate the system efficiency.

28. In May 2007, the Discharger completed a study of the southern portion of the landfill and surrounding lands. This study evaluated the distribution of VOCs in existing monitoring wells, and at other locations where samples were collected from direct push borings. Although LFG and groundwater extraction and treatment systems are and have been in operation for more than 15 years, the Discharger concluded that: VOCs and halogenated VOCs continue to be detected in LFG and groundwater beyond the boundary of the landfill; the existing LFG system does not adequately capture the gases; and expansion of the LFG system into the south area of the landfill was recommended. The Discharger concluded that VOCs are distributed in groundwater throughout the area, with the highest concentrations adjacent to the landfill. The study also found that the VOC concentrations were generally higher in the shallow zone compared to the deeper zone groundwater. The Discharger concluded that the existing groundwater extraction system was not extracting sufficient volumes of water to form a barrier to VOCs migrating away from the site. During 2007 and early 2008, the Discharger upgraded the extraction and treatment system to increase the flow rate, including replacing extraction well pumps, air lines, discharge lines, installing more filters, and replacing the GAC.

29. Groundwater exceeds the Maximum Concentration Limit (MCL) for PCE. The US EPA Primary MCL for PCE is 5 ug/L. At the south area of the landfill, the concentration of PCE at well MW-1D has trended upward from 0.86 ug/L in March 1996 to 5.6 ug/L in June 2008; and the concentration of PCE at MW-12S has ranged from 12 ug/L (1987) to 20 ug/L (November 2008). During 2008, groundwater at MW-01D and MW-12S exceeded the MCL for PCE in groundwater.

30. On 14 April 2008, the Discharger submitted a corrective action work plan for expansion of the existing LFG system into the south area of the landfill. The work plan includes installation of 10 LFG extraction wells, connection of the new LFG wells to the existing flare, and installation of two groundwater monitoring wells near the Tuolumne River. The two groundwater monitoring wells (MW-15D and MW-23D) were installed and a report was submitted on 15 January 2009. An LFG well installation report, including analytical and test results, was due by 30 September 2008. The Discharger has not submitted the report, and on 23 February 2009 confirmed that the 10 new LFG extraction wells have not been installed. This Order requires that the Discharger install, operate, and maintain the 10 new LFG extraction wells.

31. Groundwater concentrations at the north area of the landfill, including wells MW-13, MW-17, MW-18, MW-22, and MW-13, show concentrations of halogenated VOCs in

groundwater. In a letter dated 23 February 2009, the Discharger proposed to define the nature and extent of VOCs in groundwater at the north area of the landfill. This Order requires that the Discharger define the nature and extent of VOC concentrations in groundwater, to submit a report documenting the findings, and to submit and implement a corrective action for groundwater remediation at the north area of the landfill.

32. The Discharger submitted a report on 1 July 2008 summarizing the GWETS upgrades and system effectiveness, and the results of an aquifer test to estimate the radius of influence for each of the groundwater extraction wells. The aquifer test was conducted by shutting off the extraction system (all 12 extraction wells), and measuring the water levels in those wells every 10 minutes for several hours and then over the next several days. The system was then restarted, and further measurements were recorded over several days. Pressure transducers were installed in 23 monitoring wells to observe response away from the extraction wells.

33. The results of the aquifer test indicate that the extraction system does not influence any of the monitoring wells at the landfill. Monitoring wells located closest to the extraction wells were 40 to 60 feet away. The Discharger concluded that the radius of influence of the extraction system was less than the distance to these wells. Pumping rates from the wells ranged from 0.13 gallons per minute (gpm) in EX-1 to about 11 gpm in EX-7, and the total system flow rate was about 61 gpm. Pumping rates were averaging about 40 gpm prior to the system upgrades. Total VOC loading in the influent to the system during the test was about 6.4 grams per day with an average VOC concentration of about 19 ug/L.

34. Based on the results of the aquifer test, the Discharger proposed to prepare a new EFS to compare ongoing use of the groundwater extraction system (including upgrading the system to achieve higher flow rates) to other available technologies for low-level VOC removal from groundwater.

35. The Discharger submitted an EFS on 13 February 2009 for corrective action of VOCs within the landfill boundary of the south area of the landfill. The Discharger's recommendations include installation of 10 LFG extraction wells (the same wells that were to be installed by 31 August 2008 under a corrective action plan submitted on 14 April 2008 [see Finding 30]). In addition, the Discharger recommended one of two options: (1) replacement of an existing flare with a 1,500 scfm capacity flare, installation of an additional 28 LFG extraction wells or (2) enhancement of the existing groundwater extraction and treatment system with 20 dual-completion groundwater extraction wells, upgraded treatment units, and increased treatment capacity. This Order requires the Discharger to install 10 LFG extraction wells, and to install either (1) a 1,500 scfm capacity flare and the additional 28 LFG extraction wells or (2) to install 20 dual-completion groundwater extraction wells, upgraded groundwater treatment units, and increased treatment capacity and to implement corrective action for VOC-impacted groundwater at the south area of the landfill, including remediation of groundwater outside

the landfill property boundary. This Order requires that the Discharger submit a Construction Report documenting that the corrective action facilities have been installed.

36. This Order requires the Discharger to submit an Operation and Maintenance Plan for the new corrective action facilities installed under this Order.

37. Under WDRs R5-00-087, the Discharger has been required to submit historical analytical data annually in an electronic file format (.xls) that is acceptable to the Regional Water Board. On 5 March 2009, the Board received an electronic file of historical data through 2005. However, the Discharger has not submitted the historical data for 2006 through 2008. In the 2008 annual monitoring report, the Discharger submitted an incomplete file with omitted inorganic results, omitted VOC analytical results, and approximately 2,000 lines of data without a sample location identifier. The Discharger stated that a new consultant was unable to retrieve historical data from the prior consultants database. This Order requires that the Discharger submit all the historical data from 1 January 2006 through 31 December 2008, including all inorganic, VOC, and non-detects, in an electronic format file that is acceptable to the Regional Water Board.

FINANCIAL ASSURANCES

38. The March 1994 Post-Closure Maintenance Plan (PCMP) includes a cost estimate for post-closure maintenance at the landfill. The amount of the post-closure maintenance cost estimate is $322,780/year. According to the California Integrated Waste Management Board (CIWMB), the amount adjusted for inflation in 2008 dollars is $441,282 per year. The Discharger has a Pledge of Revenue Agreement on file with the CIWMB for post-closure maintenance.

39. Title 27 Section 22222 requires the Discharger to prepare a cost estimate and establish financial assurances for corrective action of all known or reasonably foreseeable releases at the landfill. The Regional Water Board has not received a cost estimate for corrective action financial assurances. This Order therefore requires the Discharger to prepare a cost estimate for corrective action of all known or reasonably foreseeable releases from the landfill. Since the landfill has a known release, the Discharger should prepare a cost estimate with a lump sum present day cost for a third-party to complete remediation of the known release. This Order also requires that the Discharger establish and maintain financial assurance with the CIWMB in at least the amount of this cost estimate, plus annual inflation.

CEQA AND OTHER CONSIDERATIONS

40. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14 CCR, Section 15301.

41. This order implements:

    a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*;

    b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;

    c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and

    d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993, and amended 21 July 2005.

42. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."

43. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2009-0051" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

44. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.

45. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

46. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

47. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.waterboards.ca.gov/laws_regulations/ and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 5-00-087 is rescinded, and that Stanislaus County Department of Environmental Resources, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of any waste at this facility, other than treated groundwater to the infiltration trenches, is prohibited.

2. The discharge of treated groundwater with detectable levels of organic compounds, or that fails to conform to the site's water quality protection standards, is prohibited.

B. DISCHARGE SPECIFICATIONS

General Specifications

1. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and irrigation to promote vegetation for erosion control.

2. Groundwater discharged to the unsaturated zone shall be treated to remove organic compounds and shall not exceed the site’s water quality protection standards.

Protection from Storm Events

3. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.

4. Annually, prior to the anticipated rainy season, but no later than **1 November**, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.

C. FACILITY SPECIFICATIONS

1. The Discharger shall immediately notify the Regional Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

2. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

3. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.

4. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.

5. The Discharger shall maintain a *Storm Water Pollution Prevention Plan* and *Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.

D. POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. During the closure and post-closure maintenance period, the Discharger shall conduct routine maintenance of the final cover, areas with interim cover, the precipitation and drainage control facilities, the groundwater, unsaturated zone and landfill gas monitoring systems, the landfill gas extraction system, and any facilities associated with corrective action.

2. The Discharger shall, in a timely manner, repair any areas of the final cover that have been damaged by erosion, cracking, differential settlement, subsidence, or any other causes that could allow ponding of surface water or percolation of surface water into the wastes.

3. The Discharger shall perform all post-closure maintenance activities specified in the facility's Final Closure and Post-Closure Maintenance Plan that are not specifically referred to in this Order.

4. The post-closure maintenance period shall continue until the Board determines that the remaining wastes in all waste management units will not threaten water quality.

E. DETECTION AND CORRECTIVE ACTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection and corrective action monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, as appropriate, and in accordance with Monitoring and Reporting Program No. R5-2009-0051.

2. The Discharger shall provide Regional Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices.

3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2009-0051, and the Standard Provisions and Reporting Requirements, dated April 2000.

4. The Water Quality Protection Standard for organic compounds that are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8260 and 8270). The repeated detection of one or more non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells is evidence of a release from the Unit.

5. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2009-0051.

6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2009-0051 and Title 27 CCR Section 20415(e).

7. The Discharger shall submit for review and approval a Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:

    a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;

    b. Sample preservation information and shipment procedures;

c. Sample analytical methods and procedures;

d. Sample quality assurance/quality control (QA/QC) procedures; and

e. Chain of Custody control.

8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved by the Executive Officer, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.

9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval prior to use.

10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.

11. **“Trace” results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.

12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from

the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result**. The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

15. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.

16. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

17. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that

reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval.

18. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval. Upon receiving written approval, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (e.g., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Water Board staff.

19. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:

    a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. Unless a given monitoring point is already under corrective action monitoring for a given constituent, the Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if ***either:***

        1) The data contain two or more analytes that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or

        2) The data contain one or more analyte that equals or exceeds its PQL.

    b. **Discrete Retest** [Title 27 CCR Section 20415(e)(8)(E)]:

        1) In the event that the Discharger concludes (pursuant to paragraph 19.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Regional Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.

        2) For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or

more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:

a) **Immediately** notify the Regional Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and

b) Comply with ¶20, below if any constituent or constituents were verified to be present.

3) Any analyte that is confirmed per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

20. If the Discharger determines that there is measurably significant evidence of a release from the Unit at any monitoring point, the Discharger shall **immediately** implement the requirements of **XI. Response To A Release, C. Release Has Been Verified**, contained in the Standard Provisions and Reporting Requirements.

F. FINANCIAL ASSURANCES

1. The Discharger shall obtain and maintain Financial Assurance Instruments (Instruments), which comply with CCR Title 27 (Sections 22207 [Closure Fund], 22212 [Post-Closure Fund], and 22220 et seq. [Corrective Action Fund]) and 40 CFR parts 257 and 258. The Discharger shall evaluate the cost of Financial Assurance to cover the estimated costs of the worst case known release. The Discharger shall submit a report on financial assurance for corrective action for the Regional Water Board Executive Officer's review and approval within in accordance with Provision 12.b of this Order. The Discharger shall also submit a copy of a request letter to the CIWMB—Financial Assurance Division to establish corrective action financial assurances in accordance with Provision 12.e of this Order. The most recent acceptance letter from the CIWMB Financial Assurance Division shall also be included in the Landfill's Annual Report.

2. At least **annually** (as required by the CIWMB), the Discharger shall submit a report demonstrating that the financial assurance fund for corrective action has been updated in accordance with the fund balance calculations provided in Section 22226 of Title 27.

3. The Discharger shall maintain assurances of financial responsibility with the CIWMB for post-closure maintenance costs in the amount of the cost estimate in the March 1994 Post-Closure Maintenance Plan (PCMP), plus annual inflation.

4. At least **annually** (as required by the CIWMB), the Discharger shall submit a report demonstrating that the financial assurance fund for closure and post-closure

maintenance has been updated in accordance with the fund balance calculations provided in Section 22225 of Title 27.

G. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the County Offices and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.

2. The Discharger shall comply with all applicable provisions of Title 27 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.

3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2009-0051, which is incorporated into and made part of this Order.

4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (Title 27 CCR Section 20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.

5. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the Regional Water Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.

6. All reports and transmittal letters shall be signed by persons identified below:

   a. For a corporation: by a principal executive officer of at least the level of senior vice-president.

   b. For a partnership or sole proprietorship: by a general partner or the proprietor.

   c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.

   d. A duly authorized representative of a person designated in a, b, or c above if;

      1) The authorization is made in writing by a person described in a, b, or c of this provision;

2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

3) The written authorization is submitted to the Regional Water Board.

e. Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

7. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to evaluate the nature, extent, and impact of the noncompliance.

8. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.

9. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.

10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Water Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Water Board.

11. All technical reports required by this Order shall be submitted pursuant to Section 13267 of the California Water Code. Technical reports are necessary in order to demonstrate compliance with the requirements of this Order, including but not limited to, requirements for remediation of impacted groundwater.

12. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

    a. By **30 May 2009**, submit an electronic Excel (.xls) file with all inorganic and organic historical analytical data from 1 January 2006 through 31 December 2008 in a format acceptable to the Regional Water Board. All results must be reported, including non-detects, inorganic, and organic analyses.

    b. By **30 June 2009**, submit a present day lump-sum cost estimate for a third-party to complete corrective action of the known release at the landfill per Sections 20380(b) and 22221 of Title 27 and a proposed financial assurances mechanism meeting the requirements of Title 27 for maintaining financial assurances.

    c. By **30 June 2009**, submit a Sample Collection and Analysis Plan with the information required in Detection and Corrective Action Monitoring Specification E.7.

    d. By **30 July 2009**, submit an LFG extraction well installation report for the 10 new LFG wells at the south area of the landfill.

    e. By **30 October 2009**, submit a copy of correspondence with the CIWMB requesting to establish financial assurances for corrective action in the amount of the approved cost estimate and using the approved financial assurances mechanism.

    f. By **30 October 2009**, submit an evaluation monitoring report documenting the nature and extent of groundwater contamination at the north area of the landfill.

    g. By **29 January 2010**, submit a corrective action plan for remediation of contaminated groundwater at the north area of the landfill.

    h. By **30 August 2010**, submit a well installation report for corrective action at the north area of the landfill.

    i. By **31 October 2010**, submit a corrective action work plan for installation of either (1) the additional 28 LFG wells and the 1,500 scfm flare, or (2) for installation of the 20 dual-completion groundwater extraction wells, and upgraded treatment units and capacity as described in the Discharger's 13 February 2009 EFS.

    j. By **29 July 2011**, submit an operations and maintenance plan for the new corrective action facilities for north and south areas of the landfill.

k. By **31 October 2011**, submit a construction report documenting installation, startup, operation, and maintenance of the facilities and improvements in the Discharger's 31 January 2010 and 31 October 2010 corrective action work plans, as approved by the Regional Water Board, for the north and south areas of the landfill.

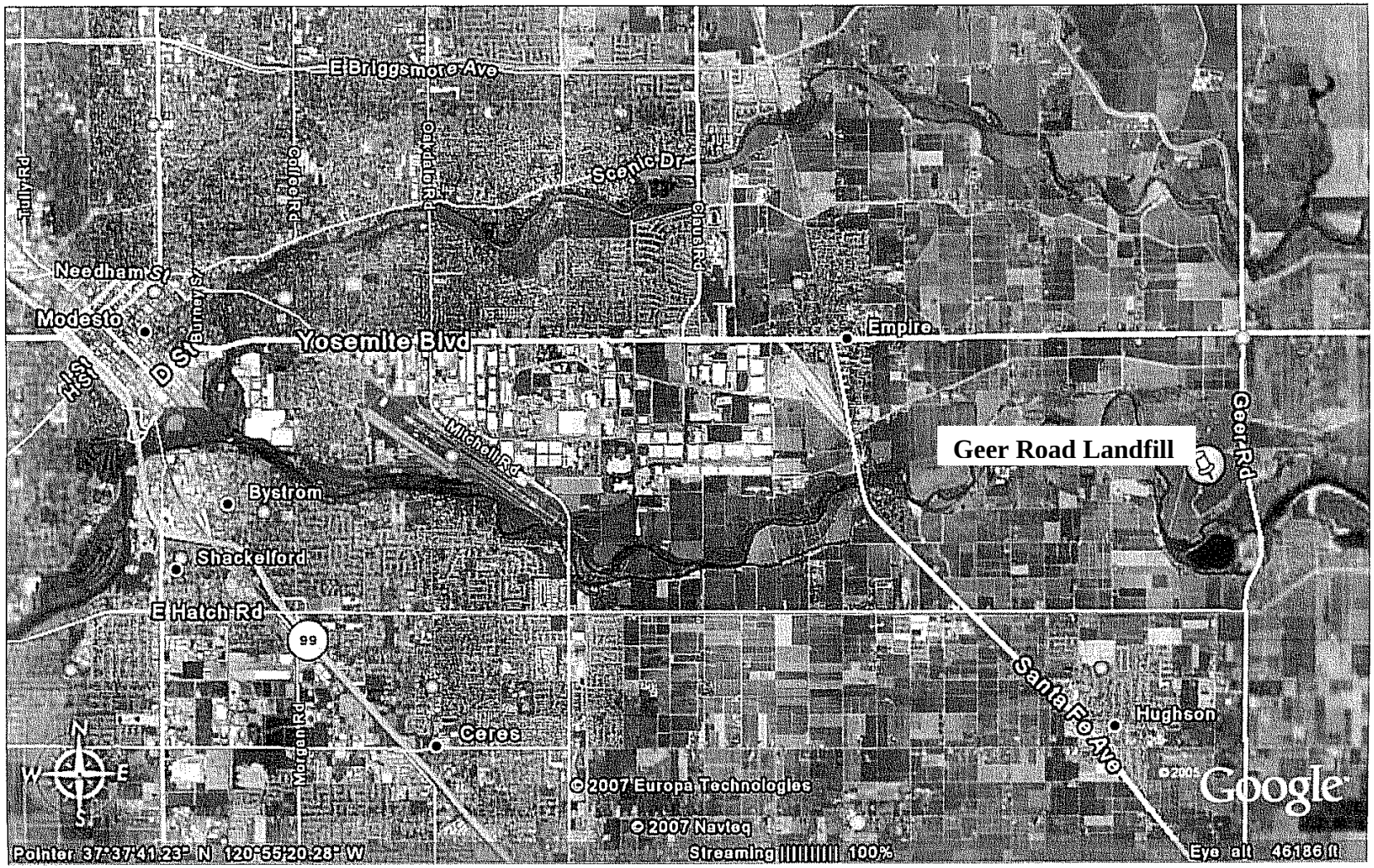
l. By **31 January 2010 and annually thereafter**, upload monitoring reports, a site map, well survey data, and analytical data into the GeoTracker database, as required by Chapter 30 of Title 23. The global ID number for the Geer Road Landfill is L10005824413.

m. By **31 January 2010 and annually thereafter**, submit an electronic Excel (.xls) file with all historical and current analytical data in a format acceptable to the Regional Water Board.

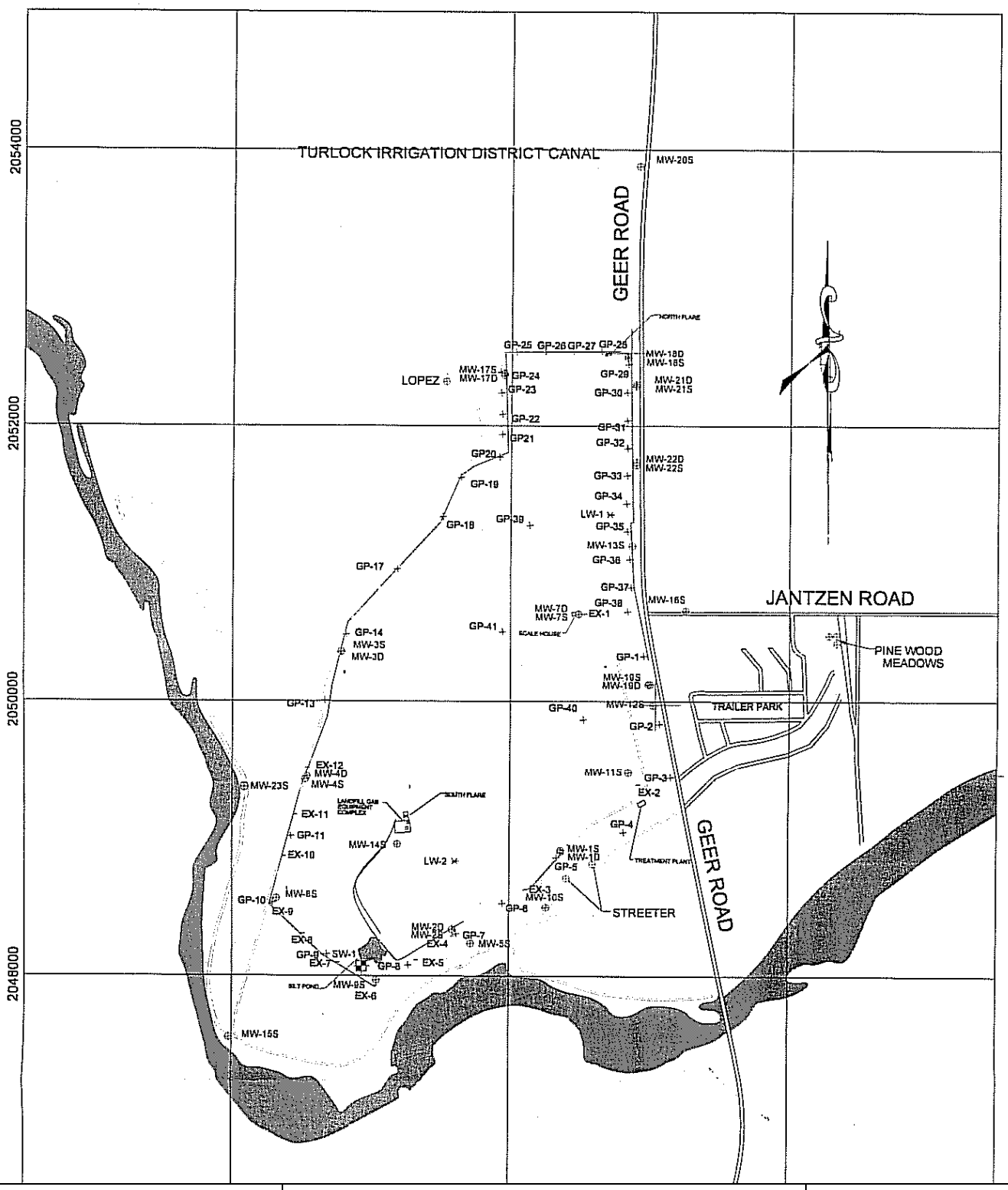
I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 24 April 2009.

_____
PAMELA C. CREEDON, Executive Officer

WLB



	Drawing Reference: Revised Report of Waste Discharge, SCS Engineers, 31 October 2007, Figure 2-1	**SITE LOCATION MAP** **GEER ROAD LANDFILL** **STANISLAUS COUNTY**



Drawing Reference:
Revised Report of Waste Discharge, SCS Engineers, 31 October 2007, Figure 2-3

SITE MAP
GEER ROAD LANDFILL
STANISLAUS COUNTY

N
W E
S

Scale:
Approx 1" = 1,000'

ATTACHMENT C
ORDER NO. R5-2009-0051
GEER ROAD LANDFILL
ITEMS TO BE INCLUDED IN THE
FEASIBILITY STUDY/REMEDIAL OPTIONS EVALUATION REPORT

The outline below is a minimum requirement for the contents and items to be included and discussed in the text of all feasibility studies/remedial options evaluation reports submitted to the Regional Water Quality Control Board. Reports shall be stamped and/or signed, as appropriate, by a registered geologist, certified engineering geologist, or civil engineer registered or certified by the State of California. The Discharger's certification statement shall be included with each report and plan.

I. Purpose of Feasibility Study/Remedial Options Evaluation

II. Background

A. Description of Facility
B. Site History
   1. Years of Operation
   2. Chemical Use
   3. Chemical Releases (Potential and Documented)
C. Geology
   1. Regional
   2. Local, soil type, lithology, lateral extent of lithologic units
D. Hydrogeology
   1. Aquifers, Aquitards, Perched Aquifers
   2. Groundwater flow rates, directions, recharge, discharge
   3. Groundwater Use
   4. Extraction and injection wells affect on groundwater flow
E. Surface Water
   1. Losing or gaining streams, ponds etc.
   2. Hydraulic connection with aquifers
F. Local Land Use
G. Previous Investigation and Remedial Actions

II. Nature and Extent of Contamination

A. Contaminants in Soils
   1. Types and Concentrations
   2. Lateral and Vertical Extent
B. Pollutants in Groundwater
   1. Constituents, concentrations, and water quality goals
   2. Lateral and Vertical Extent (including Perched Zones) of contamination

ITEMS TO BE INCLUDED IN THE FEASIBILITY STUDY/REMEDIAL OPTIONS EVALUATION REPORT

III. Contaminant Fate and Transport

A. Contaminant Properties
   1. Mobility
   2. Toxicity
   3. Half-life
   4. Chemical and biological degradation
   5. References for above information

B. Contaminant Transport based on Soil and Aquifer Properties

IV. Remedial Action Objectives

V. Description of Remedial Action Alternatives – at a minimum, 3 alternatives must be considered

A. Alternative that meets background levels
B. Alternative that meets water quality objectives
C. Alternative that meets levels between background and water quality objectives

VI. Evaluation of Remedial Action Alternatives

A. Overall Protectiveness of Human Health and the Environment
B. Compliance with Laws and Regulations
C. Long Term Effectiveness and Permanence
D. Reduction of Toxicity, Mobility, and Volume
E. Short Term Effectiveness
F. Implementability
G. Cost
F. State and Community Acceptance

VII. Potential Impacts of Remedial Actions

VIII. Estimated Project Schedule for Each Alternative

IX. Preferred Alternative

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. R5-2011-0022
FOR
STANISLAUS COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES
GEER ROAD CLASS III LANDFILL
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
STANISLAUS COUNTY

The Discharger shall comply with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258), dated April 2000, as ordered by Waste Discharge Requirements Order No. R5-2009-0051.

A. REQUIRED MONITORING REPORTS

Monitored Medium/System	Parameters and Frequencies
1. Groundwater Monitoring (Section D.1)	**See Table I**
2. Annual Monitoring Summary Report	**Annually (Section E.5.)**
3. Landfill Gas Monitoring (Section D.2)	**See Table II**
4. Leachate Monitoring (Section D.3)	**See Table III**
5. Surface Water Monitoring (Section D.4)	**See Table IV**
6. Facility Monitoring (Section D.5)	**Per Section D.5**
7. Response to a Release	**Per Standard Provisions and Reporting Requirements**

B. REPORTING

The Discharger shall submit semiannual monitoring reports with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order No. R5-2009-0051 and the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in Section E. Reporting Requirements below.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional Water Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

Sampling Frequency	Reporting Frequency	Reporting Periods End	Report Date Due
Monthly	Semiannually	Last Day of Month	**31 July** **31 January**
Quarterly	Semiannually	31 March 30 June	**31 July**
		30 September 31 December	**31 January**
Semiannually	Semiannually	30 June 31 December	**31 July** **31 January**
Annually	Annually	31 December	**31 January**
Every 5 Years	Every 5 years	31 December	**31 January**

The Discharger shall submit an Annual Monitoring Summary Report to the Regional Water Board covering the previous monitoring year. The annual report shall contain the information specified in E. Reporting Requirements, below, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The Discharger shall monitor all Constituents of Concern (COCs) for all Monitoring Points for each monitored medium every fifth year (5-year sampling frequency). The last COC monitoring event occurred in May 2007. Subsequent COC monitoring efforts shall be carried out every fifth year thereafter beginning in **2012,** and reporting of five-year COCs will next be due on **31 January 2013**. The report for the COC monitoring shall be submitted with, or reported in, the Annual Report for that year.

The results of all monitoring conducted at the site shall be reported to the Regional Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all COCs, the concentration limit for each COC, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points.

The Discharger submitted a water quality protection standard in the "Article 5 Technical Report" dated 13 October 1992 and Proposed Concentration Limits were submitted on 31 August 1999. Concentration limits proposed are listed in Table VII. However, the proposal was based on using MW-16S as the background well and MW-16S shows evidence of degradation due to landfill gas and inorganics. As required by Cease and Desist Order (CDO) R5-2011-0021, the Discharger shall propose new concentration limits and WQPS for the constituents listed in Table VII, utilizing MW-20S as the background well for the shallow zone.

The report shall:

a. Identify all distinct bodies of surface and groundwater that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.

b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.

c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zones.

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

2. Constituents of Concern (COCs)

The COCs include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The COCs for all Units at the facility are those listed in Tables I through IV for the specified monitored medium, and Table VI. The Discharger shall monitor all COCs

every five years, or more frequently as required in accordance with a Corrective Action Program.

a. Monitoring Parameters: Monitoring parameters are COCs that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables I through IV for the specified monitored medium.

3. Concentration Limits

For a naturally occurring COC, the concentration limit for each COC shall be determined as follows:

a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27(e)(8); or

b. By an alternate statistical method meeting the requirements of §20415(e)(8)(E) of Title 27.

Concentration limits for groundwater proposed by the Discharger in 1999 are listed in Table VII. Currently, background groundwater monitoring well MW 16S is impacted with sporadic low-level detections of VOCs. Therefore, the well is not currently representative of background conditions. Monitoring well MW-20S is directly north of the landfill and is outside the impacts associated with landfill gas, and is more representative of background water quality. Current concentration limits for the landfill are listed in Table VII. CDO R5-2011-0021 requires that the Discharger calculate updated concentration limits.

4. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

5. Monitoring Points

Surface Water:

a. At the point of discharge from the sedimentation basin; and
b. Within the Tuolumne River: at specific sampling locations identified in the Tuolumne River Surface Water Sampling and Analysis Plan (SAP). At a minimum, two sampling locations shall be established in the vicinity of MW-23. Samples shall be taken from quiet water which is not in the main body of the river (e.g., a side pool or eddy).

Groundwater:

At groundwater monitoring wells whose classification and monitoring frequency are specified in the following table.

Well Type	Group I Wells: Quarterly Sampling Frequency	Group II Wells: Semiannual Sampling Frequency
Background	N/A	MW-20S
Detection Monitoring (shallow zone)	N/A	MW-7S, MW-10S, MW-12S, MW-13S, MW-16S, MW-18S, MW-19S, MW-21S, MW-22S, MW-14S (after replacement)
Detection Monitoring (deep zone)		MW-7D, MW-18D, MW-19D, MW-21D, MW-22D
Point of Compliance (shallow zone)	MW-2S, MW-3S, MW-4S, MW-5S, MW-8S, MW-9S	MW-1S, MW-11S, MW-17S
Point of Compliance (deep zone)	MW-1D, MW-2D, MW-3D, MW-4D,	MW-17D
Corrective Action Monitoring (shallow zone)	MW-15S, MW-23S	N/A
Corrective Action Monitoring (deep zone)	MW-15D, MW-23D	N/A
Other Off-Site Monitoring	N/A	If access granted by landowner: Streeter domestic wells (2); Pinewood Meadows domestic wells (2)

Additional groundwater monitoring wells installed subsequent to adoption of this Revised MRP shall be added to Group I and sampled on a quarterly basis until adoption of revised WDRs. At that time, an assessment will be made as to whether each well will be assigned to Group I or Group II.

Landfill Gas:

At landfill gas monitoring probes and extraction wells specified in the following table. Additional landfill gas probes and wells installed subsequent to adoption of this Revised MRP shall be added to the monitoring program specified herein.

Well Identification		
RW-01D	RW-01S	RW-02D
RW-02S	RW-03D	RW-03S
RW-04	RW-05D	RW-05S
RW-06D	RW-06S	RW-07
RW-08	RW-09	RW-10
RW-11D	RW-11S	RW-12D
RW-12S	RW-13	RW-14D
RW-14S	RW-15	RW-16
RW-17	RW-18	RW-19
RW-20	EW-1	EW-2
EW-3	EW-4	EW-5
EW-6	EW-7	EW-8
EW-9	EW-10	EW-11
EW-12S	EW-12D	EW-13
EW-14	EW-15	EW-16
EW-17	EW-18	EW-19
EW-20	EW-21	EW-22
EW-23	EW-24	EW-25
EW-26	EW-27	EW-28
EW-29	EW-30	EW-31
EW-32	EW-33	EW-34
EW-35	EW-36	EW-37
EW-38	EW-39	EW-40
EW-41	EW-42	EW-43
EW-44	EW-45	EW-46
EW-47	EW-48	EW-49
EW-50	EW-51	EW-52
EW-53	EW-54	EW-55
EW-56	EW-57	EW-58
EW-59	EW-60	EW-61
EW-62	EW-63	

6. Compliance Period

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

D. MONITORING

The Discharger shall comply with the detection and corrective action monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan that is due by the date shown in section G.12.D, Provisions, of the Waste Discharge Requirements R5-2009-0051. The submitted Sample Collection and Analysis Plan must include quality assurance/quality control standards and must be submitted for review and approval, as described in the Waste Discharge Requirements R5-2009-0051.

All point of compliance monitoring wells established for the detection and corrective action monitoring programs shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring and corrective action program groundwater monitoring wells, unsaturated zone monitoring devices, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and COCs as indicated and listed in Tables I through IV.

Method detection limits and practical quantitation limits shall be reported. All peaks and trace concentrations must be reported, including those that cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table VI.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater Monitoring

The Discharger shall operate and maintain a groundwater monitoring system that complies with the applicable provisions of §20405, §20415, §20420, §20425 and §20430 of Title 27 in accordance with approved Detection, Evaluation and Corrective Action Monitoring Programs, where appropriate. The monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall assess the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation

monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared semiannually and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples from all monitoring wells listed in Section C.5 shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot. Samples for the COCs specified in Table I shall be collected and analyzed in accordance with the methods listed in Table VI every five years.

2. Landfill Gas Monitoring Program

The Discharger shall operate and maintain a landfill gas monitoring system that complies with the applicable provisions of §20415, §20420 and §20430 of Title 27 in accordance with approved Detection and Corrective Action Monitoring Programs, where appropriate. The monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27.

Samples shall be collected from the monitoring points listed in Section C.5 and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table II. The Discharger shall collect, preserve, and transport landfill gas samples in accordance with the approved Sample Collection and Analysis Plan.

In the event of a shutdown of the landfill gas extraction system, the Discharger shall notify Board staff via e-mail, fax, or telephone within 24 hours of knowledge and shall provide weekly status updates. This requirement excludes shutdown events where the landfill gas system restarts itself or whether the system is restarted manually within 24 hours. All shutdowns, regardless of the type of restart, shall be summarized in the semiannual reports.

Landfill gas monitoring reports shall be included with the semiannual reports and shall include an evaluation of potential impacts of landfill gas on the unsaturated zone beneath and adjacent to the landfill and compliance with the Water Quality Protection Standard.

3. **Leachate Monitoring Well/Leachate Seep Monitoring**
   Leachate which seeps to the surface from the Unit shall be sampled and analyzed for the Monitoring Parameters and COCs listed in Table III when recoverable liquid is present. The quantity of leachate shall be estimated and reported as Leachate Flow Rate (in gallons/day). Also, refer to Reporting Requirements Section E.4, which lists the reporting requirements for seepage from the landfill.

   The two existing leachate monitoring wells shall also be sampled and analyzed for the Monitoring Parameters and COCs listed in Table III when recoverable liquid is present. The depth of leachate shall be measured and reported.

4. **Surface Water Monitoring (Tuolumne River and Sedimentation Basin)**
   The Discharger shall install and operate a surface water detection monitoring system, where appropriate, that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with an approved Detection Monitoring Program.

   For all monitoring points and background monitoring points assigned to surface water detection monitoring, samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table IV. The Tuolumne River surface water monitoring program shall begin in July 2011.

   Only the surface water monitoring samples collected from the sediment basin discharge shall be analyzed for the COCs specified in Table IV every five years.

   All monitoring parameters shall be graphed to show historical trends at each sample location.

5. **Facility Monitoring**

   a. Facility Inspections: Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section E.3.f. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and repairs.

   b. Storm Events: The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following major storm events. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and repairs.

c. Standard Observations: The Discharger shall conduct Standard Observations for the waste management unit, for the perimeter of the landfill module, and for the receiving waters. The standard observations shall include those elements identified in Section E.3.f and shall be performed at the required frequencies.

6. Corrective Action Monitoring

A release from the landfill has resulted in groundwater and unsaturated zone degradation. The Discharger has implemented a corrective action program that includes a groundwater extraction, treatment, and injection system (GWETS) and a landfill gas extraction (LFG) and treatment system. The corrective action monitoring program shall be implemented to demonstrate the effectiveness of the corrective action. A discussion of the effectiveness of the corrective action shall be included in the annual reports. Corrective action monitoring shall include the groundwater monitoring required above; monitoring of the influent, midpoint, and effluent of the GWETS system; the LFG probe monitoring required above; and LFG treatment system monitoring of the influent to the LFG plant required above.

The Discharger shall collect and analyze all data necessary to assess the success of corrective actions. This assessment shall include an evaluation of the spatial distribution and concentration of each COC throughout the zone affected by the release. In conjunction with the assessment the Discharger shall monitor groundwater, surface water, and the unsaturated zone to evaluate changes in water quality resulting from the corrective action. Based on the data collected the corrective action may be revised, or discontinued.

Groundwater monitoring shall be accomplished with the same parameters and schedule as specified in Table I, as described above. The Discharger shall determine at each sampling whether there is a statistically significant increase over water quality protection standards for each parameter and constituent analyzed, or a statistically significant change from the last sample round.

a. **Groundwater Extraction and Treatment System Monitoring**: The efficiency of the GWETS shall be monitored. The GWETS plant includes prefilters to remove minerals and two granulated activated carbon (GAC) units in series to remove organics. The Discharger shall record the cumulative flow going into the system on a weekly basis. The three established sampling ports shall be monitored for concentrations of VOCs in water. Sampling port SP-13 is the influent monitoring point to the GWETS plant. Sampling port SP-14 is the midpoint between the two GAC vessels. Sampling port SP-15 is the effluent monitoring point and is located at the discharge point of the secondary GAC vessel. Sample analyses and frequency of monitoring are as follows:

Sample Location	Analytical Methods	Frequency of Sampling
SP-13, Influent	USEPA 8260B and TDS	Every 40 days
SP-14, Mid-point	USEPA 8260B	Every 40 days

SP-15, Effluent	USEPA 8260B and TDS	Every 40 days

When breakthrough of VOCs is noted at monitoring point SP-14 (the midpoint between GAC vessels) or at SP-15 (the effluent monitoring point), then the Discharger shall take immediate steps to complete the carbon vessel change-out.

The analytical results, mass of VOCs removed for the reporting period, cumulative mass of VOCs removed, volume of water treated for the reporting period, and the cumulative flow recorded in gallons shall be reported with the semi-annual/annual reports. However, whenever breakthrough occurs the Discharger shall notify the Regional Water Board within 72 hours of the discovery.

E. REPORTING REQUIREMENTS

1. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure period.
   a. Such legible records shall show the following for each sample:
   b. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
   c. Date, time, and manner of sampling;
   d. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
   e. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
   f. Calculation of results; and
   g. Results of analyses, and the MDL and PQL for each analysis.

2. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted and shall identify if the violations were corrected or not. If no violations have occurred since the last submittal, then this information must be stated in the transmittal letter. The transmittal letter must provide a discussion of any violations found since the last report was submitted, must provide a description of the actions taken or planned for correcting those violations, must include any references to previously submitted time schedules, and must state if a schedule is contained in the accompanying report or not. The transmittal letter must also include the Discharger's signed certification statement.

3. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:

   a. For each monitoring point and background monitoring point addressed by the report, a description of:

      1) The time of water level measurement;

      2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;

      3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;

      4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and

      5) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan.

   b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.

   c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.

   d. Laboratory statements of results of all analyses evaluating compliance with requirements.

   e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.

   f. A summary and certification of completion of all Standard Observations for the Unit(s), for the perimeter of the Unit, and for the receiving waters. Standard observations shall be conducted **monthly** during the wet season (1 October to 30 April) and **quarterly** during the dry season (1 May to 30 September). Standard The Standard Observations shall include:

      1) For the Unit:

         a) Evidence of ponded water at any point on the facility (show affected area on map);

         b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and

         c) Evidence of erosion and/or of day-lighted refuse.

d) Existence of desiccation cracks on the side slopes

2) Along the perimeter of the Unit:

a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);

b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and

c) Evidence of erosion and/or of day-lighted refuse.

3) For receiving waters:

a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area;

b) Discoloration and turbidity - description of color, source, and size of affected area;

c) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;

d) Evidence of water uses - presence of water-associated wildlife;

e) Flow rate; and

f) Weather conditions - wind direction and estimated velocity, total precipitation during recent days and on the day of observation.

g. A landfill gas monitoring report that presents the following:

1) A discussion of the landfill gas monitoring results;

2) An evaluation of the distribution and concentration of landfill gases in the landfill waste mass and the underlying vadose zone;

3) An evaluation of the effectiveness of the landfill gas extraction system; and

4) For the landfill gas extraction system: a listing of the dates of shutdown, length of time shutdown, how the system was re-started, the cause of the shutdown, and steps that have been taken to prevent such a shutdown in the future.

The report shall include tabulated data for all field and monitoring parameters and, for the wells monitored for VOCs, time vs. concentration graphs showing the concentration of total VOCs in each well, as well as a separate graph for each non-methane organic compound (i.e., benzene, toluene, 1,1 dichloroethane, tetrachloroethylene, trichloroethylene, vinyl chloride, Cis 1,2 dichloroethene) detected in the landfill gas well.

h. A discussion about the effectiveness of the Corrective Action Program including comparison of the current data with historical data, trends, and the status of the GWETS, including sampling data, flow rates, and effectiveness.

4. The Discharger shall report by telephone any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Regional Water Board within seven days, containing at least the following information:
   a. A map showing the location(s) of seepage;
   b. An estimate of the flow rate;
   c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
   d. Verification that samples have been submitted for analyses of the Monitoring Parameters and COCs listed in Table III of this MRP, and an estimated date that the results will be submitted to the Regional Water Board; and
   e. Corrective measures underway or proposed, and corresponding time schedule.

5. The Discharger shall submit an Annual Monitoring Summary Report to the Regional Water Board covering the reporting period of the previous monitoring year. This report shall contain:
   a. All monitoring parameters and COCs shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous ten calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
   b. All historical monitoring data, including data for the previous year, shall be submitted in tabular format and in a digital MS Excel file (.xls) in a format acceptable to the Regional Water Board. Data for all field, monitoring, and constituents of concern must be included. Detected and non-detected constituents must be included along with the sample date, well number, analytical method, constituent, MDL, PQL, and qualifiers. The Regional Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], that facilitates periodic review by the Regional Water Board.
   c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
   d. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.

e. A comprehensive evaluation of the effectiveness of the Corrective Action Program, including graphs showing trends for all historical and current data for each detected constituent in all wells listed as corrective action wells in this MRP must be provided. The evaluation shall include the status of landfill gas controls, and landfill gas monitoring data for the probes and gas extraction wells.

1) For the GWETS, all data, flow rates, annual volumetric flow, and cumulative volumetric flow shall be reported and tabulated. The annual GWETS plant run time, down time, and duration of downtime shall be reported in hours of operation, hours not in operation, and percent of total time in full operation. At a minimum, the plant shall operate 95% of the time over the course of a calendar year. The cumulative pounds of VOCs removed for the year and over the life of the project by the GWETS shall be reported.

2) In reporting the progress of the corrective action, the annual monitoring report must provide the total volumetric flow into the landfill gas treatment (LFG) system, the mass of halogenated VOCs destroyed for the year, and a trend analysis of halogenated VOCs constituents (not total VOCs) in groundwater at each monitoring point over the life of the LFG treatment system. The annual LFG plant run time, down time, and duration of downtime shall be reported in hours in operations, hours not in operation, and percent of total time in full operation. At a minimum, the plant shall be operating 95% of the time over the course of a calendar year.

3) In reporting the progress of the corrective action, the annual report must include contaminant contour maps for specific VOCs in groundwater. Separate contour maps must be provided for vinyl chloride, tetrachloroethene (PCE), trichloroethylene, 1,1-DCE, 1,1-dichloroethane (DCA), 1,2-DCA, cis-1,2-dichloroethene (DCE), trans-1,2-DCE, and similar halogenated VOC constituents. Separate maps shall be provided for the deep wells and for the shallow wells. Summary maps showing contours of totalized VOCs do not meet the aforementioned requirements.

4) The Discharger shall report any modifications to the Corrective Action Program intended to improve the effectiveness, and shall also report any major maintenance such as replacement/addition of pumps, piping, and dates of carbon change-outs.

This Monitoring and Reporting Program shall be implemented beginning **1 July 2011.**

I, KENNETH D. LANDAU, Assistant Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 8 April 2011.

Original Signed By:

Ordered by: _____

PAMELA C. CREEDON, Executive Officer

8 April 2011

_____

(Date)

TABLE I
GROUNDWATER MONITORING PROGRAM

Parameter	Units	Frequency
Field Parameters		
Groundwater Elevation	Ft. & hundredths, MSL	[1]
Temperature	^{o}C	[1]
Electrical Conductivity	µmhos/cm	[1]
pH	pH units	[1]
Turbidity	Turbidity units	[1]
Eh	Millivolts	[1]
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	[1]
Chloride	mg/L	[1]
Carbonate	mg/L	[1]
Bicarbonate	mg/L	[1]
Nitrate - Nitrogen	mg/L	[1]
Sulfate	mg/L	[1]
Calcium	mg/L	[1]
Arsenic (dissolved)	µg/L	[1]
Iron (dissolved)	µg/L	[1]
Lead (dissolved)	µg/L	[1]
Magnesium	mg/L	[1]
Manganese	mg/L	[1]
Potassium	mg/L	[1]
Sodium	mg/L	[1]
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L	[1]
Constituents of Concern (see Table VI)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	µg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

[1] Quarterly or Semiannually—see Section C.5 for frequency for each well.

TABLE II
LANDFILL GAS (LFG) MONITORING PROGRAM

Parameter	Units	Frequency
LFG Plant Field Parameters		
Atmospheric Temperature	^{o}F	Monthly
Atmospheric Pressure	PSIG	Monthly
Temperature into LFG Plant	^{o}F	Monthly
Pressure into the LFG plant	mm of Hg vacuum	Monthly
Totalized flow and flow rate into the LFG Plant	Cubic feet & CFM	Monthly
Total halogenated VOCs into the LFG Plant	$\mu g/cm^3$	Monthly[1]
LFG Plant Influent Monitoring Parameters		
Volatile Organic Compounds (USEPA Method TO-15)[1]	$\mu g/cm^3$	Semiannually
Methane	%	Semiannually
Field and Monitoring Parameters for all LFG Extraction Wells and Monitoring Probes		
Weather Conditions		Monthly
Atmospheric Temperature	^{o}F	Monthly
Atmospheric Pressure	mm of Hg	Monthly
Gas Temperature at each well		Monthly
Before adjustment	^{o}F	Monthly
After adjustment	^{o}F	Monthly
Gas Pressure at each well		
Initial static pressure in wellhead	inches H_20	Monthly
Adjusted static pressure in wellhead	inches H_20	Monthly
Gas concentrations at each well		
Methane	% by volume	Monthly
Carbon Dioxide	% by volume	Monthly
Oxygen	% by volume	Monthly
Remainder gas	% by volume	Monthly
Monitoring Parameters for LFG Extraction Wells RW-11D, RW-12D, RW-14D, EW-22, and EW-59		
Volatile Organic Compounds (USEPA Method TO-15)[1]	$\mu g/cm^3$	Semiannually

[1] The Discharger shall measure total halogenated VOCs using field instrument with appropriate lamp.

TABLE III
LEACHATE MONITORING WELL AND LEACHATE SEEP MONITORING

Parameter	Units
Field Parameters	
Leachate Depth (for leachate wells only)	Inches
Total Flow (for seeps only)	Gallons
Flow Rate (for seeps only)	Gallons/Day
Electrical Conductivity	µmhos/cm
pH	pH units
Monitoring Parameters (for leachate wells and seeps)	
Total Dissolved Solids (TDS)	mg/L
Chloride	mg/L
Carbonate	mg/L
Bicarbonate	mg/L
Nitrate - Nitrogen	mg/L
Sulfate	mg/L
Calcium	mg/L
Magnesium	mg/L
Potassium	mg/L
Sodium	mg/L
Volatile Organic Compounds (USEPA Method 8260B, see Table V)	µg/L

TABLE IV
SURFACE WATER DETECTION MONITORING PROGRAM

		Frequency	
Parameter	**Units**	Sedimentation Basin	Tuolumne River
Field Parameters			
Temperature	oC	Twice Annually[1]	Monthly[2]
Electrical Conductivity	µmhos/cm	Twice Annually[1]	Monthly[2]
pH	pH units	Twice Annually[1]	Monthly[2]
Turbidity	Turbidity units	Twice Annually[1]	Monthly[2]
Monitoring Parameters			
Total Dissolved Solids (TDS)	mg/L	Twice Annually[1]	Monthly[2]
Total Suspended Solids (TSS)	mg/L	Twice Annually[1]	Monthly[2]
Carbonate	mg/L	Twice Annually[1]	Monthly[2]
Bicarbonate	mg/L	Twice Annually[1]	Monthly[2]
Chloride	mg/L	Twice Annually[1]	Monthly[2]
Nitrate - Nitrogen	mg/L	Twice Annually1	Monthly[2]
Sulfate	mg/L	Twice Annually[1]	Monthly[2]
Calcium	mg/L	Twice Annually[1]	Monthly[2]
Copper	mg/L	N/A	Monthly[2]
Magnesium	mg/L	Twice Annually[1]	Monthly[2]
Potassium	mg/L	Twice Annually[1]	Monthly[2]
Sodium	mg/L	Twice Annually[1]	Monthly[2]
Volatile Organic Compounds (USEPA Method 8260B, see Table V)	µg/L	Twice Annually[1]	Monthly[2]
Constituents of Concern (see Table VI)			
Total Organic Carbon	mg/L	5 years	N/A
Inorganics (dissolved)	µg/L	5 years	N/A
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years	N/A
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years	N/A
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years	N/A
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years	N/A

[1] For the sedimentation basin, the Discharger shall collect surface water samples during the first storm of the rainy season that produces significant flow discharging from the sedimentation basin, and during one other storm event that produces significant flow discharging from the sedimentation basin.

[2] For the Tuolumne River, the Discharger shall collect surface water samples in accordance with the SAP monthly from July through November, inclusive.

TABLE V
MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Electrical Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC analysis (USEPA Method 8260B):

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- l ,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Hexachlorobutadiene
Hexachloroethane
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
Methyl tertiary butyl ether (MTBE)
4-Methyl-2-pentanone (Methyl isobutylketone)
Naphthalene
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1.2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloethane (Methylchloroforrn)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

TABLE VI
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Inorganics (dissolved):	USEPA Method
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Selenium	7742
Thallium	7841
Cyanide	9010B
Sulfide	9030B

Volatile Organic Compounds (USEPA Method 8260):

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, l-Dichloroethene; Vinylidene chloride)
cis- l ,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- l ,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- l ,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)

Methyl iodide (Iodomethane)
Methyl t-butyl ether (MTBE)
Methyl methacrylate
4-Methyl-2-pentanone(Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds (USEPA Method 8270 - base, neutral, & acid extractables):

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methyethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD 4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimehtylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin

Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosospyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Chlorophenoxy Herbicides: (USEPA Method 8l51A):

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

Organophosphorus Compounds (USEPA Method 8141A):

Atrazine
Chlorpyrifos
0,0-Diethyl
0-2-pyrazinyl phosphorothioate (Thionazin)
Diazinon
Dimethoate
Disulfoton
Ethion Methyl parathion (Parathion methyl)
Parathion
Phorate
Simazine

TABLE VII
GROUNDWATER CONCENTRATION LIMITS

Constituent	Units	Concentration Limit
Specific Conductance (EC)	µmhos/cm	973
pH	pH Units	6.0 to 7.8
Total Dissolved Solids (TDS)	mg/L	739
Chloride	mg/L	155
Sulfate	mg/L	83
Nitrate as N	mg/L	55
Total Alkalinity	mg/L	TBD
Total Organic Carbon	mg/L	TBD
Carbonate	mg/L	5.0
Alkalinity, Bicarbonate	mg/L	141
VOCs (EPA 8260B)	µg/L	MDL
SVOCs (EPA 8270C)	µg/L	MDL
Organochlorine Pesticide (EPA 8081A)	µg/L	MDL
Polychlorinated Biphenyls (EPA 8082)	µg/L	MDL
Chlorophenoxy Herbicides (EPA 8151)	µg/L	MDL
Organophosphorus Compounds (EPA 8141A)	µg/L	MDL
Aluminum, dissolved	mg/L	TBD
Antimony, dissolved	mg/L	TBD
Arsenic, dissolved	mg/L	TBD
Barium, dissolved	mg/L	TBD
Beryllium, dissolved	mg/L	TBD
Cadmium, dissolved	mg/L	TBD
Chromium, dissolved	mg/L	TBD
Chromium VI+, dissolved	mg/L	TBD
Cobalt, dissolved	mg/L	TBD
Copper, dissolved	mg/L	TBD
Iron, dissolved	mg/L	115
Lead, dissolved	mg/L	TBD
Manganese, dissolved	mg/L	11
Mercury, dissolved	mg/L	TBD
Nickel, dissolved	mg/L	TBD
Selenium, dissolved	mg/L	TBD
Silver, dissolved	mg/L	TBD
Sulfide, dissolved	mg/L	TBD
Thallium, dissolved	mg/L	TBD
Tin, dissolved	mg/L	TBD
Vanadium, dissolved	mg/L	TBD
Zinc, dissolved	mg/L	73

Notes: MDL = Laboratory Method Detection Limit
TBD = To be determined

SECTION 2I
QUALITY CONTROL

1.0 GENERAL

1.1 Work Included

- The SCDER will either supply or employ and pay for the services of an Engineer to perform construction monitoring services to assure the SCDER that the work is completed according to the Specifications and Drawings.

- The Contractor shall cooperate with the Engineer to facilitate the execution of required services.

- Employment of the Engineer shall in no way relieve the Contractor's obligations to perform the work and supply materials in accordance with the Contract Documents.

- The SCDER or Engineer shall provide all construction quality assurance (CQA) services required by the Specifications, Drawings, or the SCDER approved Contractor's Quality Control Plan, with the exception of any other testing related to product certification and/or installation certification required by the SCDER or the manufacturer.

- The Contractor shall inform the SCDER of apparent errors, omissions, irregularities, and deficiencies, and request instructions in writing before proceeding with the work. The SCDER may, by appropriate written instructions, correct errors and omissions, which shall be as binding upon the Contractor as though contained in the original Contract Documents.

1.2 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

1.3 Inspection

- Materials, equipment, and workmanship shall be subject to the inspection of, and rejection by, the SCDER, if not in conformance with the Contract Documents. Defective materials, equipment, or work shall be replaced with new and acceptable materials, equipment, or work.
- On all questions concerning the acceptability of materials or equipment, classification of materials or equipment, execution of the work, and the determination of costs, the decision of the SCDER shall be final and binding upon all parties.

1.4 Samples and Tests

- At the option of the SCDER, the Contractor shall present samples of all materials being used for the project to the SCDER for inspection and testing in order to confirm the design intent is achieved.

- Any tests of materials furnished by the Contractor shall be made in accordance with the commonly recognized standards of national technical organizations, and such special methods and tests are prescribed in the Contract Documents.

1.5 Sampling

The Contractor shall furnish such samples of materials as are requested by the SCDER without charge. No material shall be used until the Engineer has had the opportunity to test or examine such materials. Samples will be secured and tested whenever necessary to determine the quality of the materials. Samples and test specimens prepared at the job site, such as concrete test cylinders, will be taken or prepared by the SCDER in the presence and with the assistance of the Contractor.

1.6 Test Standards

- All sampling, specimen preparation, and testing of materials shall be in accordance with the standards of nationally recognized technical organizations.

- The physical characteristics of all materials not particularly specified shall conform to the latest standards published by the American Society for Testing Materials, where applicable.

1.7 Equipment Tests

All items of mechanical equipment shall be tested for proper operation, efficiency, and capacity.

2.0 MATERIAL (NOT USED)

3.0 CONSTRUCTION METHODS

The Contractor shall:

- Cooperate with the SCDER, the Engineer and their personnel and provide access to the work area.

- Secure and deliver to the Engineer adequate quantities of representative samples of materials proposed to be used which require testing.

- Furnish copies of supplier's test report as required.

- Furnish incidental labor and facilities:

    1. To provide access to work to be tested.

    2. To obtain and handle samples at the project site or at the source of the product to be tested.

    3. To facilitate inspections and testing.

    4. For storage and curing of test samples.

- Coordinate activities to accommodate services with a minimum delay. Notify the Engineer 48 hours in advance of operations to allow for laboratory assignment of personnel and scheduling of tests. When tests or inspections cannot be performed after such notice, reimbursing the SCDER for laboratory personnel and travel expenses incurred due to the Contractor's negligence will be required.

- Employ and pay for the services of a separate qualified independent testing laboratory to perform additional inspections, sampling and testing required:

    1. For the Contractor's convenience,

    2. As required by the Specifications or approved Quality Control Plans, or

    3. When retests have to be performed due to non-compliance with Contract Documents.

- Promptly submit five copies of a written report of each test to the Engineer. Each report shall include:

    1. Date issued.

    2. Project title and number.

    3. Testing laboratory name, address and telephone number.

    4. Name and signature of laboratory inspector.

    5. Date and time of sampling or inspection.

    6. Record of temperature and weather conditions.

    7. Date of test.

    8. Identification of product and specifications section.

9. Location of sample or test in the project.

10. Type of inspection or test.

11. Results of test and compliance with contract documents.

12. Interpretation of test results, when requested by the County.

- Be responsible for re-testing where results of inspections and tests prove unsatisfactory and indicate noncompliance with requirements.

- Unless otherwise specified, the Contractor shall protect construction exposed for testing and shall repair construction damaged by sampling, testing or inspection.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in the section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment for this work shall be included within the line items established in the Construction Bid Sheet and in these Specifications.

END OF SECTION

SECTION 3A
MOBILIZATION

1.0 GENERAL

Mobilization consists of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, subcontractors, project safety, including adequate personnel, equipment, supplies, and incidentals to the project site; for the establishment of facilities necessary for work on the project; for premiums on bond and insurance for the project and for other work and operations the Contractor must perform or costs the Contractor must incur before beginning work on the project, which are not covered in other bid items. Demobilization consists of work and operations including, but not limited to, those necessary for movement of personnel, equipment, supplies, incidentals, and offices off-site.

2.0 MATERIAL (NOT USED)

3.0 CONSTRUCTION METHODS (NOT USED)

4.0 MEASUREMENT AND PAYMENT

Providing for and complying with the requirements set forth in this Section, Mobilization will be measured on a Lump Sum (LS) basis, and payment will be based on the unit price provided on the Contractor's Bid Sheet. Twenty-five (25) percent of the lump sum price bid will be paid with the first payment request following satisfactory evidence of mobilization of sufficient labor, equipment and material to adequately progress the work of this contract. Another twenty-five (25) percent of the lump sum price bid will be paid with the payment request subsequent to the payment request in which the initial payment for this item is made. The remaining fifty (50) percent of the lump sum price bid will be paid with the Final Payment request. The price bid in the proposal for this item shall not exceed six (6) percent of the total project amount. (Bid Schedule Item No. 1)

The following are considered incidental to the Work:

- Temporary controls for the performance of the Work.
- Movement of equipment onto the job site.
- Chemical toilets.
- Removal of all facilities and equipment at the completion of the project.
- Cost of bonds, both prime and subcontractors.
- Permits.
- Construction Facilities.
- Temporary Controls.
- Project Close-Out.

END OF SECTION

SECTION 3B
SITE CLEARING AND GRUBBING

1.0 GENERAL

This work shall consist of clearing, grubbing, removing and disposing of all vegetation and debris within the limits of construction, and as necessary for the installation of the landfill gas extraction system, treatment facility, and electrical service.

1.1 Related Work Specified Elsewhere

- Subsection 4C - Vertical Landfill Gas Extraction Wells

1.2 Regulatory Requirements

- Conform to applicable Stanislaus County and State of California codes for disposal of debris. Burning debris on site will not be permitted. The Contractor is reminded that this site is vegetated and that fire hazards should always be considered.

- Coordinate work with utility companies and the SCDER.

1.3 Sequencing and Scheduling

- Schedule construction clearing and grubbing before excavation or construction. Submit schedule to the SCDER.

- Schedule all clearing to minimize surface erosion within the project area.

1.4 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

- Construction Schedule

2.0 MATERIAL (NOT USED)

3.0 CONSTRUCTION METHODS

3.1 Construction Clearing

- Clear areas to be occupied by work. Keep clearing to the minimum amount possible. Clearing shall be limited to 5 feet outside the work area unless directed by the SCDER.

Contractor shall comply with all site specific Storm Water Pollution Prevention Plan (SWPPP) requirements.

- Do not clear beyond property limits, or other areas marked on site.

- Protect monuments and markers before work commences. If construction operations are to be conducted during darkness, the markers shall be illuminated so as to be visible in the dark. Communicate to personnel the purpose of marking and protection of necessary objects.

- All vegetative material and debris generated during the clearing operations shall be delivered for disposal to a Stanislaus County approved landfill or transfer station. The Contractor will be responsible for the transportation expenses; however tipping fees will be covered by the County.

3.2 Demolition and Disposal

- All debris resulting from demolition operations shall be delivered for disposal to a Stanislaus County approved landfill or transfer station in accordance with applicable laws and regulations and as approved by the SCDER.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4A
PERMITS AND UTILITY COORDINATION

1.0 GENERAL

1.1 Permits and Licenses

The SCDER will be responsible for obtaining any the San Joaquin Valley Air Pollution Control District (SJVAPCD) Construction or Operating Permits. The Contractor shall procure all necessary remaining permits and licenses at their cost, and give all notices necessary and incident to the due and lawful prosecution of the work. The Contractor shall be responsible for complying with all applicable conditions of these permits.

1.2 Agency and Private Entity Coordination and Permitting

The work to be performed for this project may require significant planning and coordination with the SCDER and private agencies. The Contractor is responsible for obtaining permits, payment of fees and/or coordinating with all involved as needed to perform the construction as indicated on the project plans.

The work to be performed during this project will require significant planning and coordination with the following State and County agencies and private utility companies:

SAN JOAQUIN AIR POLLUTION CONTROL DISTRICT (SJVAPCD)

Authority to construct and permits to operate the gas collection and treatment systems are required from SJVAPCD who will also oversee the operations and maintenance of the system. The Contractor shall comply with all conditions stated on the most resent SJVAPCD permits pertaining to the Geer Road Landfill. The most recent SJVAPCD permits may be found in Attachemtn A of this document. It is the Contractors responsabilithy to thoroughly review, identify and abide by the conditions applicable to the work specified herein and the Plans.

2.0 MATERIALS (NOT USED)

3.0 CONSTRUCTION METHODS (NOT USED)

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

ATTACHEMTN A

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 16 2013

Gerardo C. Rios, Chief
Permits Office (AIR-3)
U.S. EPA - Region IX
75 Hawthorne St
San Francisco, CA 94105

Re: Changes Not Requiring Title V Permit Amendment
District Facility # N-3104
Project # N-1123804

Dear Mr. Rios:

Stanislaus County Department of Environmental Resources has proposed adding CCR Title 17 methane control measure requirements to the existing landfill. The District is processing these changes in accordance with District Rule 2520, Federally Mandated Operating Permits, Section 6.4.4, "Other Changes Not Requiring Title V Permit Amendment". These changes to the MUNICIPAL SOLID WASTE LANDFILL, 3.8 MILLION CUBIC METER CAPACITY (144 ACRES), WITH GAS COLLECTION SYSTEM, A CONDENSATE INJECTION SYSTEM, AND ONE (1) 24 MMBTU/HR JOHN ZINK MODEL ZTOF 6X45 LANDFILL GAS FIRED FLARE do not change the federally enforceable conditions to designated permit units. Enclosed are courtesy copies of the permit requirements for your records.

Please replace the previous version with the enclosed. Should you have any questions, please contact Mr. Leonard Scandura at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

DW:dk

cc: Jami Aggers, Stanislaus County Department of Environmental Resources, 3800 Cornucopia Way, Ste. C, Modesto, CA 95358
Dan Klevann, Permit Services

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: N-3104-2-9 **EXPIRATION DATE:** 02/29/2016

SECTION: SE34 **TOWNSHIP:** 3S **RANGE:** 10E

EQUIPMENT DESCRIPTION:
MUNICIPAL SOLID WASTE LANDFILL, 3.8 MILLION CUBIC METER CAPACITY (144 ACRES), WITH GAS COLLECTION SYSTEM, A CONDENSATE INJECTION SYSTEM, AND ONE (1) 24 MMBTU/HR JOHN ZINK MODEL ZTOF 6X45 LANDFILL GAS FIRED FLARE

PERMIT UNIT REQUIREMENTS

1. The NMOC emission rate shall be calculated using the equation in 40CFR60.754(a)(1)(i), if the actual year-to-year solid waste acceptance rate is known or the equation in 40CFR60.754(a)(1)(ii), if the actual year-to-year solid waste acceptance rate is unknown. The values for k, Lo, and CNMOC for both equations shall be taken from 40CFR60.754(a)(1), as appropriate. Both equations may be used if the actual year-to-year acceptance rate is known for a part of the landfill life, but unknown for another part of the landfill life. The mass of nondegradable solid waste may be subtracted from the average annual acceptance rate when calculating R, if documentation of the nature and amount of such wastes is maintained. (Tier 1 specifications) [40 CFR 60.754(a)(1) and 62.14354] Federally Enforceable Through Title V Permit
2. Tier 3 specifications to determine the site-specific methane generation rate constant shall include the following: 1) EPA Method 2E or another method approved by the EPA shall be used, 2) The NMOC mass emission rate shall be recalculated using the average site-specific NMOC concentration and the site-specific methane generation rate constant k, instead of the default values in 40 CFR 60(a)(1), and 3) If the resulting calculated NMOC mass emission rate is equal to or greater than 50 megagrams/year, the landfill owner or operator shall comply with 60.752(b)(2). [40 CFR 60.754(a)(4), (a)(5) and (i) and 62.14354] Federally Enforceable Through Title V Permit
3. If Tier 3 specifications are used to determine the site-specific methane generation rate and the calculated NMOC mass emission rate is less than 50 megagrams/year, then a periodic emission rate report shall be submitted to the Administrator, pursuant to 60.757(b)(1) and the NMOC concentration shall be recalculated annually, pursuant to 60.757(b)(1), using the site-specific methane generation rate constant and the NMOC concentration obtained using Tier 2 specifications. Determination of the site-specific methane generation rate constant is performed once and used in all subsequent annual NMOC emission rate calculations. [40 CFR 60.754(a)(4)(ii) and 62.14354] Federally Enforceable Through Title V Permit
4. For PSD purposes, the NMOC emission rate shall be estimated and compared to the PSD major source and significance levels in 40 CFR 51.166 or 52.21, using AP-42 or EPA-approved procedures. [40 CFR 60.754(c) and 62.14354] Federally Enforceable Through Title V Permit
5. The NMOC emission rate shall be recalculated and reported to the APCO annually, except as otherwise provided in this permit, until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams/year and a collection and control system is installed or until the landfill is closed. [40 CFR 60.752(b)(1), 60.754(a), 60.757(b), 62.14354 and 62.14355] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

6. If the NMOC emission rate, as reported in the annual report is less than 50 megagrams/year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual reports for those 5 years. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years. All data and calculations upon which this estimate is based shall be provided to the APCO. This estimate shall be revised at least once every 5 years. [40 CFR 60.757(b)(1)(ii) and 62.14355] Federally Enforceable Through Title V Permit

7. If the actual waste acceptance rate exceeds the estimated rate used in any year reported in a 5-year estimate of the NMOC emission rate, then a revised 5-year estimate shall be submitted to the APCO. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated acceptance rate. [40 CFR 60.757(b)(1)(ii) and 62.14355] Federally Enforceable Through Title V Permit

8. The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions. [40 CFR 60.757(b)(2) and 62.14355] Federally Enforceable Through Title V Permit

9. If the owner or operator elects to recalculate the NMOC emission rate using Tier 3 specifications and the resulting NMOC emission rate is less than 50 megagrams/year, annual periodic reporting shall resume. The revised NMOC emission rate report, with the recalculated NMOC emission rate using Tier 3 specifications, shall be submitted within 1 year of the first Tier 1 calculated exceedance of 50 megagrams/year. [40 CFR 60.757(c)(2) and 62.14355] Federally Enforceable Through Title V Permit

10. Each owner or operator shall keep for at least 5 years up-to-date, readily accessible, on-site records of the maximum design capacity, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. [40 CFR 60.758(a), 62.14355(a) and District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

11. This operating permit may be cancelled with APCO approval when the landfill is closed, pursuant to the requirements of this permit, if the landfill is not otherwise subject to the requirements of either 40 CFR part 70 or part 71 and if either 1) it was never subject to the requirement for a control system under 40 CFR 60.752(b)(2); or 2) the owner or operator meets the conditions for control system removal specified in 40 CFR 60.752(b)(2)(v). [40 CFR 60.752(d) and 62.14352(f)] Federally Enforceable Through Title V Permit

12. If the landfill is permanently closed, a closure notification shall be submitted to the APCO within 30 days of waste disposal cessation. A permanent closure must take place in accordance with 40 CFR 258.60. If a closure report has been submitted, no additional waste may be placed in the landfill without filing a notification of modification to the APCO, pursuant to 40 CFR 60.7(a)(4). [40 CFR 60.752(b)(1)(ii)(B), 60.757(d) and 62.14352(f)] Federally Enforceable Through Title V Permit

13. If the calculated NMOC is equal to or greater than 50 megagrams/year, the owner or operator shall install a collection and control system, that effectively captures the gas generated within the landfill, within 30 months of that determination. This operating permit must be modified accordingly to show compliance with 40 CFR 62, Subpart GGG requirements applicable to a MSWL with a collection and control system. [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756, 62.14353 and 62.14354] Federally Enforceable Through Title V Permit

14. If a gas collection and control system is installed, it shall comply with the operational standards of 40 CFR 60.753, the compliance provisions of 40 CFR 60.755, the monitoring provisions of 40 CFR 60.756, the reporting and record keeping requirements of 40 CFR 60.757 and 60.758, and the requirements of 40 CFR 60.759 (for active collection systems). [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756, 60.757, 60.758, 60.759, 62.14353 and 62.14354(b)] Federally Enforceable Through Title V Permit

15. Permittee shall comply with the Increments of Progress as defined in Table 3 of 40 CFR 62, Subpart GGG, unless a site specific schedule is approved by EPA, which includes notification of EPA no later than 10 business days after completing each increment of progress. [40 CFR 62.14355(b)] Federally Enforceable Through Title V Permit

16. Permittee shall submit the Final Control Plan (as defined in 40 CFR 62.14351) one year after the first annual emission rate report showing NMOC emissions > 50 megagrams/year, unless a site-specific schedule is approved by EPA. (Increment 1) [40 CFR 62.14356(a)(1)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

17. Permittee shall Award Contract(s) (as defined in 40 CFR 62.14351) on or before December 6, 2001, or 20 months after the first annual emission rate report showing NMOC emissions > 50 megagrams/year, unless a site-specific schedule is approved by EPA. (Increment 2) [40 CFR 62.14356(a)(2)] Federally Enforceable Through Title V Permit

18. Permittee shall Initiate On-Site Construction (as defined in 40 CFR 62.14351) on or before April 6, 2002, or 24 months after the first annual emission rate report showing NMOC emissions > 50 megagrams/year, unless a site-specific schedule is approved by EPA. (Increment 3) [40 CFR 62.14356(a)(3)] Federally Enforceable Through Title V Permit

19. Permittee shall Complete On-Site Construction (as defined in 40 CFR 62.14351) on or before October 6, 2002, or 30 months after the first annual emission rate report showing NMOC emissions > 50 megagrams/year, unless a site-specific schedule is approved by EPA. (Increment 4) [40 CFR 62.14356(a)(4)] Federally Enforceable Through Title V Permit

20. Permittee shall Achieve Final Compliance (as defined in 40 CFR 62.14351) on or before October 6, 2002, or 30 months after the first annual emission rate report showing NMOC emissions > 50 megagrams/year, unless a site-specific schedule is approved by EPA. (Increment 5) [40 CFR 62.14356(a)(5)] Federally Enforceable Through Title V Permit

21. Permittee must conduct initial performance tests of the landfill gas collection system and air pollution control equipment on or before April 4, 2003, or 30 months and 180 days after the first annual emission rate report showing NMOC emissions > 50 megagrams/year, unless a site-specific schedule is approved by EPA. [40 CFR 62.14356(a)(5)] Federally Enforceable Through Title V Permit

22. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. The operator shall test the sulfur content of the gases being flared and demonstrate the sulfur content does not exceed 3.3% by weight. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

23. To show compliance with sulfur emission limits, the gas being flared shall be tested quarterly for sulfur content (using Draeger tubes) and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 4 consecutive quarters for the flared gas, then the compliance testing frequency shall be annually. If an annual sulfur content test fails to show compliance, quarterly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

24. The sulfur content of the gas being flared shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory, or other alternative sampling method approved by the District. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

25. The fuel higher heating value for the gases being flared shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

26. The permittee shall maintain accurate records of gas volume flared. These records and all records of required monitoring data and support information shall be maintained and retained for a period of 5 years and made available for inspection at any time. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

27. If this flare requires a pilot flame, then the flare shall be operated with a flame present at all times, and kept in operation when emissions may be vented to it. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

28. This flare shall not be used as a control device for any permit unit subject to NSPS, without modification of permit requirements to address 40 CFR 60.18. [District Rule 2520, 9.3.3] Federally Enforceable Through Title V Permit

29. This flare shall be inspected every two weeks while in operation for visible emissions. If visible emissions are observed, corrective action shall be taken. If visible emissions continue, an EPA Method 9 test shall be conducted within 72 hours. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

30. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

31. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
32. Actual flare emissions shall not exceed 20 tons VOC/year. Process information, including fuel usage data for the flare and process rates for operations controlled by the flare, shall be submitted to the District annually to demonstrate compliance with this requirement. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. The facility shall maintain in proper operating condition a gas flow meter with a continuous recording device which measures the amount of landfill gas consumed per day. [District NSR Rule] Federally Enforceable Through Title V Permit
34. The landfill gas consumption rate shall not exceed 510.5 MMBtu per day. [District NSR Rule] Federally Enforceable Through Title V Permit
35. Emission concentrations shall not exceed the following: NOx, 0.05 lb/MMBtu; CO, 0.2 lb/MMBtu; VOC, 0.004 lb/MMBtu; SOx, 0.04 lb/MMBtu; PM10, 0.1 lb/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
36. The landfill gas condensate injection rate shall not exceed 600 gallons per day. [District Rules 4102 and NSR] Federally Enforceable Through Title V Permit
37. The flare shall be equipped with automatic dampers, an automatic shutdown device, and a flame arrester. [District NSR Rule, 17 CCR 95464] Federally Enforceable Through Title V Permit
38. The flare shall be equipped with a temperature indicator and recorder which measures and records the operating temperature. The temperature indicator and recorder must operate continuously. [District NSR Rule, 17 CCR 95464] Federally Enforceable Through Title V Permit
39. The VOC destruction efficiency shall be at least 98% by weight, or VOC emissions as methane shall not exceed 20 ppmv @ 3% O2 from the flare stack. [District NSR Rule] Federally Enforceable Through Title V Permit
40. Methane destruction efficiency shall be at least 99% by weight. [17 CCR 95464]
41. Daily records of the quantity of landfill gas condensate injected, and of the number of operating hours per day shall be kept. [District NSR Rule] Federally Enforceable Through Title V Permit
42. Records of the volume of landfill gas consumed and the total heat input shall be maintained on a daily basis. [District NSR Rule] Federally Enforceable Through Title V Permit
43. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
44. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
45. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
46. Source testing to determine NOx and CO emissions, as well as the VOC destruction efficiency, shall be conducted annually. [District Rules 2520, 9.3.2 and NSR] Federally Enforceable Through Title V Permit
47. Source testing for NOx and CO shall be conducted utilizing EPA Method 7E and EPA Method 10 respectively, or CARB Method 100. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
48. Source testing for VOC control efficiency and VOC concentration shall be conducted utilizing EPA Method 25A or 25C. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
49. The heating value of the process gas shall be determined at the time of source tests. Test methods ASTM D1826 or ASTM D3588 shall be used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

50. Each owner or operator, required by 40 CFR 60.752(b)(2) of subpart WWW to install a collection and control system, shall comply with the requirements in 40 CFR 63.1960 through 63.1985 and with the general provisions specified in table 1 of 40 CFR 63 subpart AAAA. [40 CFR 63.1955(b)] Federally Enforceable Through Title V Permit

51. For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, owner or operator must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR part 60 subpart WWW, these alternatives can be used to comply with 40 CFR 63 subpart AAAA, except that all affected sources must comply with the startup, shutdown, and malfunction (SSM) requirements in subpart A of 40 CFR 63 as specified in Table 1 of 40 CFR 63 subpart AAAA and all affected sources must submit compliance reports every 6 months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average. [40 CFR 63.1955(c)] Federally Enforceable Through Title V Permit

52. Landfill gas collection system wellheads must be operated under vacuum. Monthly monitoring of wellheads is required. [17 CCR 95464]

53. Landfill gas collection system components downstream of blower have a leak limit of 500 ppmv as methane. Components must be checked quarterly. If compliance with the methane limit has been demonstrated for 4 consecutive quarters, then the component checking frequency shall be annually. If an annual test fails to show compliance, quarterly testing shall resume. [17 CCR 95464]

54. The flare must operate within the parameter ranges established during the initial or most recent source test. [17 CCR 95464]

55. Landfill collection and control system must be operated such that landfill surface methane emissions shall not exceed instantaneous surface emission limit of 500 ppmv as methane or integrated surface emission limit of 25 ppmv as methane. [17 CCR 95464, 17 CCR 95465]

56. Instantaneous and integrated landfill surface emissions measurements shall be done quarterly. The landfill may monitor annually provided they comply with requirements of 17 CCR 95469 (a)(1). [17 CCR 95469]

57. Permittee shall keep records of all gas collection system downtime exceeding five days, including individual well shutdown and disconnection times and the reason for downtime. [17 CCR 95470]

58. Permittee shall keep records of all gas control system downtime in excess of one hour, the reason for the downtime and the length of time the gas control system was shutdown. [17 CCR 95470]

59. Permittee shall keep records of the expected gas generation flow rate calculated pursuant to section 95471(e). [17 CCR 95470]

60. Permittee shall keep records of all instantaneous surface readings of 200 ppmv or greater; all exceedances of the limits in sections 95464(b)(1)(B) or 95465, including the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during surface sampling; and the installation date and location of each well installed as part of a gas collection system expansion. [17 CCR 95470]

61. Permittee shall keep records of any positive wellhead gauge pressure measurements, the date of the measurements, the well identification number, and the corrective action taken. [17 CCR 95470]

62. Permittee shall keep records of the annual solid waste acceptance rate and the current amount of waste-in-place. [17 CCR 95470]

63. Permittee shall keep records of the nature, location, amount , and date of deposition of non-degradable waste for any landfill areas excluded from the collection system. [17 CCR 95470]

64. Permittee shall keep records of any source tests conducted pursuant to section 95464(b)(4). [17 CCR 95470]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

65. Permittee shall keep records describing the mitigation measures taken to prevent the release of methane or other emissions into the atmosphere during the following activities: 1. When solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment; 2. During repairs or the temporary shutdown of gas collection system components; or, 3. When solid waste was excavated and moved. [17 CCR 95470]

66. Permittee shall keep records of any construction activities pursuant to section 95466. The records must contain the following information: 1. A description of the actions being taken, the areas of the MSW landfill that will be affected by these actions, the reason the actions are required, and any landfill gas collection system components that will be affected by these actions. 2. Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components. 3. A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts. [17 CCR 95470]

67. Permittee shall keep records of the equipment operating parameters specified to be monitored under section 95469(b)(1) as well as records for periods of operation during which the parameter boundaries established during the most recent source test are exceeded. The records must include the following information: 1. For enclosed flares, all 3-hour periods of operation during which the average temperature difference was more than 28 degrees Celsius (or 50 degrees Fahrenheit) below the average combustion temperature during the most recent source test at which compliance with sections 95464(b)(2) was determined and a gas flow rate device which must record the flow to the control device at least every 15 minutes. [17 CCR 95470]

68. Permittee shall submit the following reports as required in section 95470(b): Closure notification, Equipment removal report and Annual report. All reports must be accompanied by a certification of truth, accuracy, and completeness signed by a responsible official. [17 CCR 95470]

69. Permittee may comply with the CARB regulation for landfill methane control measures by using approved alternative compliance options. The permittee shall obtain written District approval for the use of any alternative compliance options not specifically approved by this permit. Changes to the approved alternate compliance options must be made and approved in writing. Documentation of approved alternative compliance options shall be available for inspection upon request. [17 CCR 95468]

70. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]

SECTION 4B
PRODUCT HANDLING AND PROTECTION

1.0 GENERAL

1.1 Work Included

The Contractor shall transport, deliver, handle, and store materials and equipment at the job site per manufacturer recommendations and in such manner as to prevent damage, including damage which might result from the intrusion of foreign matter or moisture. All existing site items which continue to be used such as probes, utility boxes, and valve boxes in the immediate area of construction, must be protected and are the responsibility of the Contractor. The Contractor shall comply with the following:

1. Manufacturer instructions for material and equipment regarding temperature limitations.
2. Other environmental conditions which are required to maintain the original quality of the materials and equipment.
3. Material handling instructions designed to prevent damage to products and finishes.
4. The Contractor shall maintain packaged materials in manufacturers' original containers with labels intact until they are incorporated into the work.
5. Packaged material shall bear the name of the manufacturer and the product, including brand name, color, stock number, and all other complete identifying information.
6. The Contractor shall remove all damaged or otherwise unsuitable materials and equipment promptly from the job site.
7. The Contractor shall locate storage piles, stacks, or bins so as to avoid being disturbed and provide barricades as required to protect storage from damage.
8. Store all materials and equipment in accordance with manufacturer instructions, above grade, and properly protected from weather and construction activities. Provide space heaters to prevent condensation as necessary.
9. The Contractor shall protect all finished surfaces.
10. The Contractor shall ensure that all finished surfaces are clean, unmarred, and suitably protected until accepted by SCDER.
11. The Contractor shall consult individual Specification sections for additional specific product handling and protection requirements.

2.0 MATERIAL (NOT USED)

3.0 EXECUTION (NOT USED)

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4C
VERTICAL LANDFILL GAS EXTRACTION WELLS

1.0 GENERAL

1.1 Work Included

This section sets forth the requirements for furnishing all materials and providing complete installation for twenty-eight (28) vertical LFG extraction wells as shown on the Drawings.

1.2 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested. The Contractor shall submit to the Engineer for approval, at least 7 days prior to the start of construction, each submittal.

- LFG Wellheads—shop drawings, letter of certification of compliance with the plans and specifications, and warranty.
- Flexible Connection Adaptors (Fernco's or Equal)—letter of certification of compliance with the plans and specifications.
- LFG Extraction Well Perforations—letter of certification of compliance with the plans and specifications.
- HDPE Pipe & Fittings—letter of certification of compliance with the plans and specifications.
- PVC Pipe & Fittings—letter of certification of compliance with the plans and specifications.
- LFG Well Gravel Sieve Analysis—letter of certification of compliance with the plans and specifications and grain size analysis results.
- Bentonite Material for the Well Seal—letter of certification of compliance with the plans and specifications.
- Geomembrane & Extrudate—Statement of production date or dates, and manufacturers certificates geomembrane and exrudate product and for each day's production. Laboratory test results and certification stating that the geomembrane meets the product requirements. Certification stating that all geomembrane and extrudate rolls are furnished by one supplier, and that all rolls are manufactured from one resin type obtained from one resin supplier. Copy of quality control certificates issued by manufacturer and including designation of test methods used. Also include roll numbers, batch numbers, lot numbers, and roll identification. Test reports from the manufacturer. Statement certifying that no reclaimed polymer is added to the resin. Statement listing

percentages of processing aids, antioxidants, and other additives other than carbon black added to or in the resin. Geomembrane delivery, storage, and handling instructions. Geomembrane installation instructions. Sample warranties for review

- Welder Certificates—submit all welder qualifications prior to installation.
- Geonet with Bonded Geotextile—letter of certification of compliance with the plans and specifications.
- Well Bore Seal (compatable with LLDPE) —letter of certification of compliance with the plans and specifications.

2.0 MATERIAL

2.1 Pipe and Fittings

The LFG wellheads shall be as manufactured by Soiltec Inc., Hampton, NH 03842 (phone: 603-929-9510), or approved equal.

The wellhead assemblies shall consist of the following components:

1. Soiltec V5A 2-inch standard vertical wellhead assembly (or equal) with low flow eccentric orifice plate and ¼-inch monitoring ports.

2. The wellheads shall be mounted to the well casing by means of a straight flexible connection adapter of the same size as the wellhead and well casing (Fernco or approved equal) for mounting the wellhead to the casing.

4. The wellhead shall be airtight and leak free.

5. The wellhead assembly shall be capable of being used with the CES-Landtec GEM-2000 and GEM-5000 Gas Extraction Monitor incorporating GEM monitoring functions.

5. It is the intent of this Specification that the wellhead assembly shall be supplied as a complete manufactured unit.

6. Wellheads shall be connected with 2-inch kanaflex 101-PS flex hose, or approved equal. Two powerlock clamps shall fasten the flex hose to the piping.

2.2 Backfill Materials

The gravel backfill material around the perforated pipe shall consist of homogenous, clean, non-corrosive, inert material, non-calcareous gravel, having the following gradation (ASTM C 131 Test Grading):

SIEVE SIZE	TOTAL % PASSING
2”	100
1-1/2”	90
1”	35
3/4”	5

3/8” 0

The soil backfill around the well bore shall be clean soil, free of construction debris and rocks in excess of 3 inch size.

The well gravel backfill material shall be placed in lifts and compacted to prevent bridging.

A geonet “donut” with heat bounded geotextile shall be installed above the aggregate before placing the one foot of clean soil.

The bentonite seal material for the wells, as shown on the Construction Drawings shall be #8 Bentonite pellets.

All extraction wells shall have an identification tag. The tag shall be brass and contain the well identification number, the total depth of the boring, the length of solid casing and the length of perforated casing as shown in Detail 6/10.

2.2 Geomembrane Patch Material

The geomembrane material shall be smooth linear low density polyethylene (LLDPE) to match the existing material on site. The resin material shall be VLDPE, new, first quality, compounded and manufactured specifically for producing VLDPE geomembrane. The resin types shall not be intermixed and shall have a LLDPE Geomembrane shall at a minimum meet the specification listed in Table1.

Table 1. LLDPE Geomembrane Properties

Properties	Test Method	Test Value	Testing Frequency (minimum)
Thickness	ASTD D-1599	60 mils non	Per roll
Lowest individual of 10 values		-10%	
Density g/ml (max)	ASTM D-1505/ ASTM D-792	0.939	200,000 lb
Tensile Properties	ASTM D-6693 Type IV		20,000 lb
break strength - lb/in.		152	
break elongation - %		800	
2% Modulus – lb/in. (max.)	ASTM D-5323	2400	Per Formulation
Tear Resistance - lb (min. ave.)	ASTM D-1004	22	45,000 lb
Puncture Resistance - lb (min. ave.)	ASTM D-4833	56	45,000 lb
Axi-Symmetric Break Resistance Strain - % (min.)	ASTM D-5617	30	Per Formulation
Carbon Black Content - %	ASTM D-4812	2.0-3.0	45,000 lb
Carbon Black Dispersion	ASTM D-5596	Note (3)	45,000 lb
Oxidative Induction Time (OIT) *(4)*			200,000 lb
(a) Standard OIT (min. ave.) — or —	ASTM D-3895	100	
(b) High Pressure OIT (min. ave.)	ASTM D-5885	400	
Oven Aging at 85°C *(5)*			Per Formulation
(a) Standard OIT (min. ave.) - % retained after 90 days — or —	ASTM D-3895	35	
(b) High Pressure OIT (min. ave.) - % retained	ASTM D-5885	60	

after 90 days			
UV Resistance *(6)*			Per Formulation
(a) Standard OIT (min. ave.) — or —	ASTM D-3895	N.R.(7)	
(b) High Pressure OIT (min. ave.) - % retained after 1600 hrs *(8)*	ASTM D-5885	35	

(1) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction. Break elongation is calculated using a gage length of 2.0 in. at 2.0 in./min.
(2) Other methods such as D 1603 (tube furnace) or D 6370 (TGA) are acceptable if an appropriate correlation to D 4218 (muffle furnace) can be established.
(3) Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in Categories 1 or 2 and 1 in Category 3
(4) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.
(5) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.
(6) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60 degrees Celsius.
(7) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.
(8) UV resistance is based on percent retained value regardless of the original HP-OIT value.

2.2 Well Bore Seal

The well bore seal material shall match the existing LLDPE geomombrane material installed during closure of the landfill. All well bore seals may be pre manufactured or conctructed on site by a qualified LLDPE welder. The well bore seals shall match the dimensions specified in the Plans.

3.0 CONSTRUCTION METHODS

3.1 General Requirements

The drilling subcontractor must have experience drilling on landfills and provide the SCDER with references upon request. The Contractor and Subcontractor must be aware they will encounter landfill gas containing substantial quantities of methane, which when mixed with air can reach explosive levels.

The Contractor is responsible for preparing and submitting a Site Health and Safety Plan to the SCDER prior to any work being performed. The Site Health and Safety Plan shall include methane monitoring in the work area during drilling.

The Contractor shall lay out the locations of LFG extraction wells in the field for the approval of the Engineer. LFG extraction well locations shall be within ± 1 foot horizontally and vertically. The elevation of the existing ground surface will also be provided to the Engineer at each LFG extraction well location.

The Contractor shall complete clearing and grubbing of the area at each well location in accordance with Section 3B.

3.2 Extraction Wells

The bore for the well shall be straight, and the well pipes shall be centered in the bore. The Contractor shall take all necessary precautions to maintain the well pipes vertically plumbed during backfilling of the bore and the installation of the well bore seal. If the pipes are installed out of plumb, the Contractor shall correct the alignment at no cost to the SCDER.

If, during the drilling of a borehole, contact with an obstruction is made such that the extraction well cannot be completed to the full depth as called for on the Construction Drawings, the Engineer shall be consulted as to whether the borehole has advanced to a sufficient depth. Drilling will be performed for a minimum of 1 hour before determination is made by the Engineer as to the condition of drilling refusal, if applicable. If, in the opinion of the Engineer, the borehole has reached a sufficient depth, the Contractor shall be required to complete the extraction well, and he will be compensated based on the depth actually reached.

If, in the opinion of the Engineer, the borehole has not reached a sufficient depth to function as an effective extraction well as a result of an in-place obstruction in the landfill, the Contractor shall abandon this borehole by backfilling it with soil. The backfill material shall be placed in the borehole in three-foot lifts and tamped by the drill rig. The Contractor is responsible for repairing the landfill soil cap per the Drawings and Specifications. The Contractor will be compensated under the Bid Items 16 and 17 for backfill of the bore hole and the 1-hour determination time.

If, in the opinion of the Engineer, the borehole has not reached a sufficient depth to function as an effective collection well due to the fault of the driller, the Contractor shall abandon this borehole by backfilling it with soil. The backfill material shall be placed in the borehole in three-foot lifts and tamped by the drill rig auger bucket. The Contractor is responsible for repairing the landfill soil cap per the Drawings and Specifications at no cost to the SCDER. The Contractor will not be compensated for standby time or backfill of a bore hole that has to be abandoned due to the fault of the driller.

If, during drilling, the bottom of the landfill is reached the Contractor shall place a five-foot (5’) bentonite seal at the bottom of the bore hole. Place sufficient amount of bentonite chips in bore and determine thickness of bentonite seal by direct measurement before and after placement of bentonite. Hydrate bentonite with water in accordance with the manufacturer’s hydration recommendations. .

LFG extraction well pipe perforations shall be as shown on the Construction Drawings. The pipe size shall be 4-inch SDR 11 HDPE. The bottom of the perforated pipe shall be blocked with a cap.

The completed well shall be extended above grade and temporarily capped until final connection.

The Contractor shall connect the gas extraction well to the gas header pipe according to the Construction Drawings and shall include all pipe, valves, and fittings.

Excavated material from the borehole shall be transported to Stanislaus County approved landfill. Excavated material may not remain on-site overnight unless deposited in a covered container or bin and transported to a landfill after the container is filled. Excavated material can

not be placed directly on the final cover material. The excavated material shall be placed on plywood boards or steel plates to prevent contamination of the final cover. The final cover shall be returned to previously existing conditions after drilling is complete.

The Contractor shall maintain boring logs drawings during the well boring and installation and record any deviations from the Drawings or Specifications such as boring depth and length of well casing perforations. A sample boring log can be provided by the Engineer upon request. The Contractor shall be responsible for complying with all As-Built requirements as specified within Section 2E.

Construction and drilling equipment shall be operated with appropriate noise attenuation devices as per industry standards and regulations in place at the time of the project. Equipment will be kept in working order to prevent excessive noise from a poorly running engine or mechanical parts (mitigation measure).

The Contractor shall ensure that all requirements set forth in the SJVAPCD Permit are implemented. The most recent SJVAPCD Permit is provided in Attachment A in Section 4A.

3.3 Extrusion Welding

All well seals shall be extrusion welded to the existing LLDPE any other openings in the LLDPE geomembrane due to well abandonment shall be patched and extrusion welded. Any damage to the LLDPE geotextile shall be repaired by the Contractor at no expense to SCDER. The weld area shall be ground no more than 10 minutes prior to welding. No more than 10% of the thickness shall be removed by grinding. Welding shall commence where the grinding started and must overlap the previous seam by at least 2 inches. Reseaming over an existing seam without regrinding shall not be permitted. The welding shall restart by grinding the existing seam and rewelding a new seam. Patches shall have rounded corners, be made of the same geomembrane, and extend a minimum of 6 inches beyond the edge of defects. Minor localized flaws shall be repaired by spot welding or seaming

3.4 Extrusion Welding Vacuum Testing

All extrusion welds done in the field shall be vacuum tested. Procedures for vacuum testing (ASTM D5641) are described below:

a. Vacuum testing of welds shall only be carried out on extruded seams, including repairs, or whenever a proper test cannot be completed by other methods.

b. For welds tested by vacuum method, the weld is placed under suction utilizing a vacuum box constructed with rigid sides, a transparent top for viewing the seams, a neoprene rubber gasket attached to the bottom of the rigid sides, a vacuum gauge on the inside, and a valve assembly attached to a vacuum hose connection. The box is placed over a seam section which has been thoroughly saturated with a soapy water solution (1 oz. soap to 1 gallon water). The rubber gasket on the bottom of the box must fit snugly against the soaped seam section of the panel, to ensure a leak-tight seal.

c. A vacuum pump is energized and the vacuum box pressure reduced to approximately 5 psi gauge. Dwell time must not be less than 10 seconds. Any pinholes, porosity or non-

bonded areas are detected by the appearance of soap bubbles in the vicinity of the defect. If bubbles are observed, mark the area of the leak for repair and repair.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Payment will be established in the Contractor's Bid Schedule and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4E
BENCH ROAD CROSSINGS

1.0 GENERAL

1.1 Work Included

Contractor shall construct above and below grade road crossing per Detail 4/10 or 5/10 of the construction drawings. All road crossings shall have a minimum of 12-inch soil cover over all piping. This work also includes the transport and compaction of clean earth to construct an above grade road crossing.

1.2 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

- Corrugated steel pipe (CSP) manufacture specification sheets.

2.0 MATERIAL

2.1 Compacted Soil

The SCDER shall designate a borrow source for the soil material to be used in the construction of the road crossing trench backfill.

2.2 Corrugated Steel Pipe (CSP):

CSP shall be 12 gage galvanized pipe in conformance with Section 207-11 of the SSPWC.

3.0 CONSTRUCTION METHODS

3.1 General Requirements

Trenches shall be excavated to a width that will provide adequate working space and pipe clearance for proper pipe installation, joining and embedment.

Soil material shall be compacted to meet the existing conditions of a minimum relative compaction of 85% of the maximum dry density as determined by ASTM D 1557 for the vegetative soil cover . Backfill used shall consist of relatively homogeneous, natural soils that are free of debris, foreign objects, large rock fragments (greater than 3 inches in maximum dimension), roots, and organics. Any material placed directly on the underlying geomembrane shall be granular and not have any rock fragments greater than ½" in the maxium deminsion.

4.0 MEAUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these

Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4F
LANDFILL GAS CONDENSATE MANAGEMENT SYSTEM

1.0 GENERAL

1.1 Work Included

Work related to the condensate management system shall consist of furnishing, fabricating, and installing the condensate sump stations, air supply piping, condensate transfer piping, and all associated excavation, backfilling, compacting and disposal of excavated material. The Contractor shall be responsible for furnishing and installing all miscellaneous piping and appurtenances, including vaults and appurtenant sump pipes and fittings, all in accordance with details as indicated on the Drawings and as specified herein.

1.2 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

- Condensate Sump—shop drawings.
- Vaults—shop drawings.
- HDPE Pipe and Fittings—letter of certification of compliance with the plans and specifications.
- Piping Pressure Test Results.
- Hoses—letter of certification of compliance with the plans and specifications.

2.0 MATERIAL

2.1 Condensate Sump Assembly

The Contractor shall assemble the dual contained condensate sumps in accordance with the Construction Drawings and the following specifications:

1. Condensate sump station shall be constructed of gas/liquid-tight standard dimensions ratio (SDR) 17 high density polyethylene (HDPE). The sump shall be designed to withstand a vacuum of at least -100 inches water column suction, and +40 inches water column pressure. The condensate sump shall be fabricated as shown on Sheets 7 and 8.

2. The HDPE pipe and fittings used in condensate sumps shall be as shown in the Construction Drawings, and shall conform to all applicable requirements of these Specifications.

3. The sump vault shall by Oldcastle Model # 3636-18, or equal.

4. All bolts, nuts, and washers in contact with LFG (condensate discharge line) shall be Type 304 SS.

5. Air line and flange bolt hardware shall be Zinc or Cadmium plated.

6. Flange back up rings shall be painted ductile iron with zink plated hardware.

7. A neoprene gasket shall be installed at all flange connections.

7. Soil/bentonite mixture backfill material for the foundation shall be compacted to meet the existing conditions. Backfill used shall consist of relatively homogeneous, natural soils that are free of debris, foreign objects, large rock fragments, roots, and organics. Low-permabile soil shall be used if additional backfill material is required.

2.2 Piping

All condensate sump vent lines shall be 1/2-inch HDPE SDR 9 and reduced at the sump vault, as shown on the Drawings.

All flexible condensate lines shall be 1-inch flex hose shall be Goodyear Gorilla (or approved equal) with stainless steel hose clamps. All flex hose shall be rated for 500 psi.

All flexible compressed air lines shall be 1-inch flex hose shall be Goodyear Gorilla (or approved equal) with stainless steel hose clamps. All flex hose shall be rated for 500 psi.

All HDPE pipe and fittings shall be of equal SDR rating to the adjoining pipe.

All piping shall conform with Section 4I “High Density Polyethylene (HDPE)”.

All piping shall be installed in accordance with the manufacturer’s instructions and recommendations.

3.0 CONSTRUCTION METHODS

All work shall be performed in accordance with the Construction Drawings.

The area around the condensate liquid pump system shall be free draining away from the equipment, as shown on the Construction Drawings.

Prior to making connections, all lines shall be purged of debris and thoroughly cleaned. All pipes shall be connected using good engineering practice.

The excavation and disposal of excavated material, related to the construction of the condensate pump stations, shall conform to all applicable requirements of these Specifications and be the responsibility of the Contractor.

The Contractor shall lay out the locations of the condensate sump stations for the approval of the Engineer.

The hole drilled or excavated for the condensate sump station shall be as shown on the Construction Drawings.

The pipes, fittings, valves, and all connections shall be as shown on the Construction Drawings.

Prior to installation, protect stored valves and appurtenances from damage due to exposure to sunlight, heat, dirt, debris, freezing and thawing, vandalism, etc.

Clean all debris, dirt, gravel, etc., from inside of piping before installing valves.

Erect and support valves in respective positions free from distortion and strain on appurtenances during handling and installation. Inspect material for defects in workmanship and material. Clean out debris and foreign material from valve openings and seats, test operating mechanisms to check proper functioning, and check nuts and bolts for tightness. Repair valves and other equipment which do not operate easily or are otherwise defective.

During installation, set plumb and support valves adequately in conformance with instructions of manufacturer.

Pipe assembly for the sump station construction shall be in conformance with Section 4I "High Density Polyethylene Piping".

At the sump station, condensate and air supply piping shall be routed to the sump's vault. Transition fittings from HDPE to steel (304 stainless for condensate line and carbon steel, epoxy coated, for air line) shall be installed at each vault and connected as shown on the Drawings.

Prior to acceptance, the following verifications shall be made:

1. Verify all connections have been pressure tested in accordance with Section 4K of these Specifications.

2. Verify the pipes and connections are clean and free of debris.

3. As-built elevations shall be recorded and submitted to the Engineer by the Contractor prior to project acceptance. Approximate invert elevations are shown on the Drawings. Adjustments to the locations of the pump stations, and invert elevations may be required. These adjustments will be made at no additional cost to the SCDER. Any adjustments made by the Contractor shall require as-built coordinates and invert elevations.

All pneumatic pumps and associated piping and pulse counters shall be salvaged from the original two existing concrete sumps that will demolished. Hoses shall be connected to hose barbs with stainless steel one-ear hose clamps (not worm-gear type) by McMaster Carr, Part Numbers 54105K51, 54105K39, and 54105K43 (3/8”, 5/8”, 1”) or as recommended and supplied by the pump manufacturer or approved equal.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these

Specifications. Payment will be established in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4G
GENERAL PIPING SPECIFICATIONS

1.0 GENERAL

This section sets forth the requirements for general piping installations indicated on the Construction Drawings.

1.1 Work Included

These General Piping Specifications apply, in general, to all landfill gas and condensate management system piping. They shall supplement the detailed piping sections, standard specifications, and the equipment sections.

1.2 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. Additional required items not included in the detailed pipe sections are as follows:

- Contractor shall submit sketches for approval by the Engineer of any major relocations of piping from that detailed on the Drawings.
- Shop drawings and/or manufacturer's certifications for any change of materials, jointing methods, or supports from that specified or detailed on the Drawings.
- Details of additional supports not shown on the Drawings which are required to adequately support the piping.

2.0 MATERIAL

2.1 General Requirements

Pipe shall be standard weight pipe unless noted or specified otherwise herein or on the Drawing. Suitable caps or blind flanges shall be furnished as indicated on the Drawings on pipes, valves, or branches that are to be left unconnected. A sufficient length of blank pipe shall be left where a cap is placed to enable cutting and installation of two or three fittings at a future date. Piping runs shown on the Drawings shall be followed as closely as possible except for minor adjustments to avoid other piping or structural features. If major relocations are required, approval shall be obtained from the Engineer.

Materials shall be new and in perfect condition. Materials shall be of the same type and manufacture for similar use, unless otherwise approved. No item or material shall be installed for any purpose not recommended by the manufacturer. Workmanship shall be of the best standard practice of the trade.

2.2 Pipe Supports, Brackets, and Fittings

Pipe supports, brackets and fittings shall be as provided by:

- Unistrut, or approved equal

- Tolco, or approved equal

Pipe supports, brackets and fittings shall be galvanized, electro-plated, or electro-galvanized.

3.0 CONSTRUCTION METHODS

3.1 Handling

Pipe, fittings, valves and accessories shall be handled in a manner that will ensure installation in sound, undamaged condition. Equipment, tools, and methods used in unloading, reloading, hauling and laying pipe and fittings shall be such that they are not damaged. Hooks inserted in ends of pipe shall have broad, well padded contact surface. Pipes shall not be stacked to unsafe heights.

The Contractor shall provide slings with protective sleeves in order to protect the pipe surface.

3.2 Manufacturer Instructions

Manufacturer instructions and recommendations shall apply to installation of piping pipe supports, brackets and fittings unless otherwise specified. When requested by the Engineer, the Contractor shall furnish the manufacturer's printed installation instructions before pipe installation.

3.3 Cleaning

The interior of pipe and fittings shall be thoroughly cleaned of all foreign matter before being installed and shall be kept clean until the work has been accepted. Joint contact surfaces shall be kept clean until the jointing is completed.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being installed. No debris, tools, clothing, or materials shall be placed in the pipe.

Landfill gas piping headers and laterals will be under vacuum after installation. The Contractor, therefore, shall make special effort to prevent dirt, pipe shavings, or other materials from being drawn into these pipes.

The Contractor shall clean and replace the inlet cone strainer during system start-up, as required, until all the debris in the system has been removed.

3.4 Cutting

Cutting shall be done in a neat manner without damage to the pipe or lining. Pipe cuts shall be smooth, straight, and at right angles to the pipe axis. Cuttings shall be removed from the piping prior to any fusion occurring.

Pipe support channels shall be provided with a plastic end cap.

3.5 Trench Construction

Where pipe grades or elevations are not definitely fixed by the Construction Drawings, trenches shall be excavated to allow a minimum 24 inches of cover over the pipe as shown on the

Construction Drawings, unless noted otherwise. Greater pipe cover depths may be necessary in order to provide clearance between other pipes, conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades.

Trenches shall be excavated to a width which will provide adequate working space and pipe clearances for proper pipe installation, jointing and embodiment. If the new pipe is to be installed in a fill or backfill area, the Contractor shall complete the fill or backfill to a minimum of two feet above the top of the pipe and then excavate the trench. See Construction Drawings.

3.6 Plugging Open End Pipes

Whenever pipe laying is stopped, the open end of the line shall be sealed with an approved mechanical watertight plug. Tape is not acceptable. Water that may have entered the trench shall be removed prior to removing the plug. It is essential that no mud, trench water, or other foreign matter be permitted to enter the pipeline at any time.

3.7 Inspection

Pipe and fittings shall be carefully examined for cracks and other defects while suspended, immediately before installation in final position. Spigot ends of pipe shall be examined with particular care. Defective, damaged, or unsound pipe and fittings shall be rejected and removed from the work site.

3.8 Pressure Testing

Leak testing shall be conducted by the Contractor in accordance with Section 4K.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Payment will be established in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4H
STAINLESS STEEL PIPE, TUBE, AND FITTINGS

1.0 GENERAL

This section set forth the requirements for stainless steel pipe, tube and fittings to be installed as indicated on the Drawings.

1.1 Work Included

Stainless steel piping and tubing complete with fittings, jointing materials, hangers and appurtenances shall be furnished for condensate pump stations and installed as shown on the Construction Drawings.

1.2 Submittals Required

The contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

- Stainless steel piping and fittings—letter of compliance with the plans and specifications from the manufacturer.
- Stainless steel tubing and fittings—letter of compliance with the plans and specifications from the manufacturer.
- Jointing materials and sealing compounds—letter of compliance with the plans and specifications from the manufacturer.
- Welders Certifications.

2.0 MATERIALS

All stainless steel piping and fittings shall conform to ANSI B36.19M-85. All stainless steel piping shall be schedule 10S. Steel type shall be 304 or 316 sheet and plate per ASTM 240. Fabrication shall be in accordance with ASTM A778 with dimensional tolerances in accordance with ASTM A 530. Welding procedures shall be in accordance with ANSI B31.1, paragraph 127.5.

Pipe supports, guides and anchors shall be located as required by MSS-SP69, and shall be fabricated in accordance with MSS-SP58.

- All LFG condensate stainless steel piping 3-inches and smaller in size shall be 316 and shall conform to ANSI B36.19.

3.0 CONSTRUCTION METHODS

3.1 Storage and Handling

All pipes and fittings shall be handled carefully in loading and unloading. They shall be lifted by hoists and lowered on skid ways in such a manner to avoid shock. Pipe and fittings shall not be dropped or dumped. Ensure that piping has accurate alignments and grade adequately support pipes. Where temporary supports are used, ensure rigidity to prevent shifting or distortion of pipe. Pitch pipes toward low points and provide for draining low points. Provide for expansion where necessary. Before assembly, remove dirt and chips from inside pipe and fittings.

3.2 Fittings

Stainless steel lines less than 3 inches in diameter shall be tubing and utilize compression fittings for joining or threaded schedule 40 pipe, as indicated on the Drawings. Compression fittings shall be 316 stainless steel having pressure rating equal to or higher than the stainless steel tubing. All hose barb fittings shall be fastened with stainless steel hose clamps at all locations specified in the Drawings.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Payment will be established in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4I
HIGH DENSITY POLYETHYLENE PIPING

1.0 GENERAL

1.1 Work Included

High density polyethylene piping, complete with fittings, jointing materials, hangers and other accessories shall be furnished and installed where shown on the Construction Drawings, or are required for proper installation and functioning of the piping.

1.2 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

- HDPE pipe and fittings— The Contractor shall submit, at least 3 days prior to installation of this material, to the Engineer, certificates of compliance for the pipe materials and fittings to be furnished for each lot/batch of pipe.
- HDPE Welders Certification(s) -- The Contractor shall submit, at least 3 days prior to installation of this material, to the Engineer, copies of certifications for each operator responsible for welding pipe.

2.0 MATERIALS

All HDPE LFG header pipe and fittings shall be made from a polyethylene resin Type PE 4710, manufactured with ultraviolet inhibitors.

The standard dimension ratio (SDR) for the high density polyethylene (HDPE) pipe shall be 17 for 4-inch and greater pipe. For pipe less than 4-inch, SDR 11 shall be used, except where noted otherwise.

The HDPE pipe fittings shall have the same specifications and pressure ratings of the HDPE. Fittings having a wall thickness different than the pipe shall not be used.

HDPE pipe elbows and tees shall be molded type for 12-inch and under. Fabricated type elbows and tees shall not be used, except for 18-inch piping.

3.0 CONSTRUCTION METHODS

3.1 Storage and Handling

All pipes and fittings shall be handled carefully in loading and unloading. They shall be lifted by hoists and lowered on skid ways in such a manner as to avoid shock. Derricks, ropes or other suitable equipment shall be used for lowering the pipe into the trench. Pipe and fittings shall not be dropped or dumped. Pipes shall not be stacked to unsafe heights.

3.2 Pipe Joining

The HDPE pipe and pipe fittings shall be joined by the butt fusion method, in accordance with manufacturer recommendations unless otherwise specified on the Drawings.

Mechanical joining to other piping materials, fittings, and valves shall be accomplished with an HDPE-to-stainless transition fitting or an HDPE flange adapter and ductile iron backup flanges.

The bolts and nuts used for mechanical joining shall be A-307 cadmium-plated steel. The ductile iron backup flanges shall be compatible for joining with ANSI-B 16.5, 150-pound bolt circle flanges, and shall be epoxy coated.

Butt fusion and saddle fusion of HDPE pipe shall be performed by qualified personnel. All personnel used by the Contractor or a Subcontractor for pipe installation shall have an HDPE welding certificate. The Contractor shall submit copies of these certificates for verification by the Engineer. No HDPE pipe shall be installed prior to submittal of this verification. HDPE pipe welding will involve only piping of the same SDR.

HDPE to stainless steel transitions for small diameter piping shall be performed with a HDPE to stainless steel transition fittings. A threaded PVC coupling shall be utilized when transitioning from the threaded portion of the transition fitting to the PVC pipe. Cuttings shall be properly disposed of along with remainder of waste being hauled off site to the County approved landfill.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Payment will be established in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4J
VALVES

1.0 GENERAL

1.1 Work Included

This section covers all valves, valve stem extensions, and appurtenances except where specific requirements are given in other sections. The Contractor shall furnish and install all valves complete with all operators, specialty items and appurtenances as shown on the Construction Drawings and specified herein. Pipe, valve, and valve stem extension purchase orders shall be coordinated to ensure proper installation of the valves and piping in conformance with the specified requirements.

1.2 Submittals Required

The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. The submittal list does not release the Contractor from the responsibility of identifying and providing all information requested. .

- Ball valves

2.0 MATERIAL

2.1 Ball Valves

Ball valves used on the condensate sump assemblies, condensate drain and vent lines shall be manufactured by Apolo or approved equal. The ball valves shall be provided and constructed as specified below:

- Model Number 76-103-01A, or approved equal.
- RPTFE seats and stuffing box ring.
- Pressure rated at 2,000 pounds per square inch (psi) for Water, Oil or Gaseous compounds (WOG).
- Body shall be constructed of stainless steel.

2.2 LFG Wellhead Flow Control Valves

The LFG wellhead flow control valves shall be provided as a component of the Soiltec V5A Vertical Wellhead Assembly as shown on the Construction Drawings.

2.3 Manual Operators

All valves shall be provided with a manual operator unless otherwise noted on the Construction Drawings or specified. The direction of rotation of the wheel, wrench nut, or lever to open each valve shall be to the left (counterclockwise). Each valve body or operator shall have cast thereon

the word OPEN and an arrow indicating the direction to open and shall be visible to the operator when the valve is in its final position.

Operator mounting arrangements and hand wheel positions shall be as shown on the Construction Drawings or as directed by the Engineer.

3.0 CONSTRUCTION METHODS

3.1 General Requirements

Each valve shall be inspected before installation to ensure that all foreign substances have been removed from within the valve body; and they shall be opened and closed to see that all parts are in first-class working condition. Geared valves shall be inspected to see that all gears are properly lubricated.

All valves of the same type shall be of the same make unless otherwise approved by the Engineer. Equals may be substituted for the manufacturers listed with the approval of the Engineer.

Valves shall be line size except as shown otherwise on the Construction Drawings. Ratings specified are minimum unless noted otherwise.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Payment will be established in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION

SECTION 4K
PRESSURE TESTING OF PIPE

1.0 GENERAL

1.1 Work Included

Leak testing shall be conducted by the Contractor on the following lines:

1. All LFG extraction piping from the newly installed well heads to the horizontal header line.
2. All newly installed condensate discharge piping.
3. All newly installed compressed air supply lines.

The procedure and equipment to be used shall be approved by the Engineer prior to testing any line. Leakage tests shall be performed on all piping after installation and before backfilling where pipe is buried or encased.

2.0 MATERIAL

The Contractor shall provide necessary piping connections between the section of line being tested and the nearest available source of air, or test fluid, together with test pumping equipment, pressure gauge and other equipment, materials and facilities necessary to make the specified tests. The Contractor shall provide temporary sectionalizing devices and vents as required for testing. Vents are to be left plugged if not required for the permanent installation.

3.0 CONSTRUCTION METHODS

3.1 Testing Procedure

Pressure testing shall be performed by the Contractor as follows:

- The specified test pressures shall be as measured at the horizontal centerline of the lowest point of the piping under test.
- Each pipeline shall be adequately braced and supported before tests are made. Partial backfilling between joints of pipelines in trenches is permissible to prevent movement under test pressure, subject to approval by the Engineer.
- Pipelines that have no valves may be closed with blind flanges or caps on the ends of the section to be tested. Discrete sections of the system can be pressure tested separately in order to isolate leaks, however the final pressure test must be performed on large sections of the system as approved by the engineer.
- Tests shall be made before the piping has been enclosed in any manner that will prevent inspection during the test.

- Leakage testing for the LFG extraction system piping shall be performed by pressurizing piping to 10 psig and holding for one hour with no more than 1.0 psig pressure drop within that time frame, adjusted for temperature fluctuations. A soap and water solution (leak detection fluid) must be applied to all joints and the joints inspected for leakage by the formation of bubbles at the point of leakage. Any leaks detected must be repaired even if the test meets the set requirements. All of these lines, either individually or in common, are to be pressurized to 10 psig. All joints and connections shall be visually inspected for leaks after applying the leakage detecting fluid.

- The test pressure for compressed air lines and condensate discharge lines shall be 135 psig and shall be held for one hour, during which time there shall be no drop in pressure, unless otherwise specified herein. Corrections made for temperature fluctuations should be accounted for.

- The Contractor, at his own expense, shall make necessary repairs or replacements in accordance with the Specifications. Repairing and testing shall be repeated until the pipeline installation conforms to the specified requirements and is acceptable to the Engineer.

- After the test has been concluded, the pipeline shall be restored to a condition satisfactory to the Engineer.

- Pumps, air compressors, instrumentation and similar equipment shall not be subjected to the pressure tests.

- It is intended that piping, whether tested after installation or not, shall be air-tight and free from visible leaks. Each leak which is discovered within one year after final acceptance of the work by the SCDER shall be repaired by and at the expense of the Contractor.

4.0 MEASUREMENT AND PAYMENT

Payment for all items in this section will include costs for furnishing labor, materials, equipment and incidentals required to complete the work in accordance with the Drawings and these Specifications. Separate payment for this work shall not be made. Payment will be included within the various line items in the Contractor's Bid Sheet and in these Specifications, Basis of Payment.

END OF SECTION