

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2011-0061

WASTE DISCHARGE REQUIREMENTS  
FOR  
MERCED COUNTY REGIONAL WASTE MANAGEMENT AUTHORITY  
FOR  
OPERATION AND CONSTRUCTION  
BILLY WRIGHT SOLID WASTE LANDFILL  
MERCED COUNTY

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

1. The Billy Wright Solid Waste Landfill (Facility) is owned and operated by Merced County Regional Waste Management Authority (hereafter Discharger). The Facility is approximately 8 miles west of the City of Los Banos and 1 mile south of Highway 152, in Sections 27, T10S, R9E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. The Facility contains one inactive and one active unlined waste management unit (Unit) covering 39.8 acres. The total permitted area of the Facility is approximately 172.7 acres, of which approximately 101.8 acres will comprise the proposed expansion area for future Units. Remaining land will be utilized for the scale facility, retention basins, a composting facility, a resource recovery area, a proposed transfer station, and buffer zones.
3. On 17 March 2000, the Central Valley Water Board adopted Order 5-00-052 which classified the Unit as a Class III landfill as defined in Title 27, California Code of Regulations, Section 20005 et seq. (hereafter Title 27).
4. Waste Discharge Requirements need to be revised to provide for the expansion of the Unit to be constructed with an engineered alternative composite liner system.

**SITE DESCRIPTION**

5. The hydraulic conductivities of the native soils underlying the Unit range between  $1.5 \times 10^{-4}$  and  $2.67 \times 10^{-5}$  centimeter per second (cm/sec).
6. A Class III landfill must be designed to withstand the maximum probable earthquake (MPE). The facility is not within a fault hazard zone. The closest Holocene fault is the Ortigalita Fault Zone approximately 7.5 miles to the southwest. The maximum probable earthquake for a 100-year event along this

fault zone is estimated to be approximately 6.59 on the Richter scale. The associated peak ground acceleration is 0.414g.

7. The facility is between two northeast to east-west trending ephemeral drainages within dissected uplands along the western margin of the San Joaquin Valley. Elevations at the site range from approximately 270 to 340 feet above mean sea level (MSL).
8. The facility is underlain by marine sedimentary rocks, which include mudstone with lesser fine-grained sandstone, concretionary and fossiliferous sandstone, and gypsum of the Late Cretaceous Panoche and/or Moreno Formations.
9. Land within 1,000 feet of the facility is used for agriculture and grazing, and is zoned for agriculture and highway interchange.
10. The facility receives an average of 8.49 inches of precipitation per year as measured at the Los Banos Detention Reservoir Station from 1968 to 2005. The average pan evaporation for this facility is 107.82 inches as measured at the same station.
11. The 100-year, 24-hour precipitation event for the facility is estimated to be 3.6 inches, based on the County of Merced Storm Drainage Design Manual.
12. The facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 06047C0825E.
13. There are two groundwater wells located approximately one mile west-southwest of the site, and upgradient of the landfill. No surface springs or other sources of groundwater supply have been observed.

#### **WASTE CLASSIFICATION AND UNIT CLASSIFICATION**

14. The Discharger disposes of municipal and industrial solid wastes, which are classified as "nonhazardous solid waste" or "inert waste" suitable for discharge to a Class III landfill as defined in Section 20164 of Title 27. Nonhazardous solid waste includes municipal solid wastes, as referred to in Title 40 Code of Federal Regulations, Part 258.2.
15. The site characteristics where the Unit is located (see Finding 5) do not meet the siting criteria for a new Class III landfill contained in Section 20260(a) and (b)(1) of Title 27. As such, the site is not suitable for operating new Units or lateral expansions of existing Units for the discharge and containment of the wastes described in Finding 14, without the construction of additional waste containment features in accordance with Section 20260(b)(2) of Title 27 and State Water Resources Control Board Resolution 93-62.

## **SURFACE AND GROUNDWATER CONDITIONS**

16. The *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin*, Fourth Edition (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
17. Surface drainage is to an unnamed intermittent stream that flows into a small evaporation basin approximately one mile northeast of the facility in the Los Banos Hydrologic Area (541.20) of the San Joaquin Basin. The basin is prevented from drainage to the San Joaquin Valley by canal embankment structures.
18. The designated beneficial uses of surface waters on the valley floor, as specified in the Basin Plan, are agricultural supply, industrial supply, industrial service and process supply, contact and noncontact water recreation, warm fresh water habitat, preservation of rare, threatened and endangered species, and groundwater recharge.
19. The facility is not within an established detailed analysis unit (DAU). The *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin*, Fourth Edition (hereafter Basin Plan), designates beneficial uses of ground waters in the Basins for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
20. The first encountered groundwater varies between three to 47 feet below the ground surface. Groundwater elevations range from 243 feet above mean sea level (MSL) to 309 above MSL.
21. Monitoring data indicate that the groundwater is unconfined to semi-unconfined. The depth to groundwater fluctuates seasonally as much as three feet in the unconfined wells and less than one foot in the semi-confined wells.
22. The direction of groundwater flow is toward the northeast. The average groundwater gradient is approximately 0.025 feet per foot. The average groundwater velocity is five feet per year. The direction of groundwater flow appears to be a function of secondary permeability, controlled primarily by fractures and the occurrence of thin gypsum beds.
23. The surface water contains approximately 8,500 milligram per liter (mg/l) TDS, 30 mg/l nitrate (as nitrogen), 0.4 mg/l selenium, and 4.0 mg/l boron. These concentrations exceed primary or secondary drinking water standards.
24. Monitoring data indicates that background groundwater quality is extremely poor, with total dissolved solids (TDS) greater than 20,000 mg/l, selenium greater than 2 mg/l, and nitrate (as nitrogen) greater than 50 mg/l. Groundwater quality downgradient of the landfill has significantly lower concentrations of TDS and selenium.

### **DETECTION MONITORING PROGRAM**

25. The existing groundwater detection monitoring system consists of eight groundwater monitoring wells.
26. The surface water detection monitoring system consists of three surface water monitoring points.
27. The existing detection monitoring programs for surface water and groundwater at this Unit satisfy the requirements contained in Title 27.
28. Volatile organic compounds (VOCs) have been detected in downgradient monitoring wells below water quality criteria on a sporadic basis, including: chloroethane, 1,1-dichloroethane, 1,2-dichloroethane, dichlorodifluoromethane, dichloromethane, trichloroethylene. In addition, several inorganic constituents of concern have been sporadically detected at concentrations above tolerance limits, including: nitrate, chloride, and sulfate. The concentration of these constituents have been below tolerance limits in recent monitoring sampling events.
29. Title 27, Sections 20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with Title 27 Section 20415(b)(1)(B)2.-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
30. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27 Section 20080(a)(1). Section 13360(a)(1) of the California Water Code allows the Central Valley Water Board to specify requirements to protect groundwater or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
31. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.
32. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although

the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

### **CONSTRUCTION AND ENGINEERED ALTERNATIVE**

33. Section 20080(b) of Title 27 allows the Central Valley Water Board to consider the approval of an engineered alternative to the prescriptive standard liner design. In order to approve an engineered alternative in accordance with Sections 20080(c)(1) or (2) of Title 27, the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Section 20080(b) of Title 27, or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative liner system is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Section 20080(b)(2) of Title 27.
34. Section 13360(a)(1) of the California Water Code allows the Central Valley Water Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
35. The Discharger proposes to construct a waste containment system which will be designed, constructed, and operated to prevent degradation of waters of the state during disposal operations, closure, and the post-closure maintenance period in accordance with the criteria set forth in Title 27 for a Class III waste management unit.
36. The proposed base liner for the waste containment system consists of, from the bottom up:
  - a. Prepared subgrade;
  - b. Geosynthetic clay liner over subgrade;
  - c. Double-sided textured 60-mil high density polyethylene (HDPE) geomembrane;
  - d. 12-ounce geotextile cushion;
  - e. 9-inch thick LCRS granular drainage layer;

- f. 8-ounce geotextile; and
  - e. one foot of protective cover soil.
37. The proposed slope liner for the waste containment system consists of, from the bottom up:
- a. Prepared subgrade;
  - b. Geosynthetic clay liner;
  - c. Single-sided textured 60-mil high density polyethylene (HDPE) geomembrane, (textured side down);
  - d. 16-ounce geotextile cushion; and
  - e. 18-inch thick protective cover soil.
38. The proposed LCRS would consist of a 9-inch thick LCRS granular layer with a minimum hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec installed over the majority of the bottom liner areas is sufficient to keep the leachate head to less than 12 inches. The bottom areas include slotted pipes leading to the leachate sumps, thereby, increasing the efficiency and capacity of the LCRS. The LCRS pipes are placed within the gravel layer in triangular-shaped low points constructed along the top of the liner system. Spacing between leachate collection pipes is designed to restrain the build-up of more than one foot of head over the liner system. The LCRS is designed to accommodate a flow of twice the anticipated daily peak leachate flow.
39. The Discharger demonstrated that the proposed liner system meets the performance goal contained in Section 20310 of Title 27. The performance evaluation was conducted using the HELP computer model to simulate waste constituent transport across the liner system, and the MULTIMED computer model to simulate the transport and fate of waste constituents released from the waste management unit. Site-specific data from the waste and the geology were utilized to perform the evaluation. The model results were used to demonstrate that the proposed liner design would prevent waste constituents from being present in the groundwater at concentrations greater than the background concentrations established in the Water Quality Protection Standard.
40. The waste to be discharged to the initial three feet of the expansion unit, as measured from the top of the operations layer of the liner system, will consist only of "selected refuse", which does not include waste that would pose a danger of physical damage to the liner system.

### CEQA AND OTHER CONSIDERATIONS

41. The action to update waste discharge requirements for this 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.
42. This order implements:
  - a. *The Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin*, 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 revised on 21 July 2005.
43. Based on the threat and complexity of the discharge, the facility is determined to be classified 2-B as defined below:
  - a. Category 2 threat to water quality, defined as, "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short term violation of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
  - b. Category B complexity, defined as, "Any discharger not included above that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units."
44. 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 having discharged or 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 having discharged or 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.”

45. The technical reports required by this Order and attached Monitoring and Reporting Program No. R5-2011-0061 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.
46. This Order requires full containment of wastes and does not permit degradation of surface water or groundwater. Further antidegradation analysis is therefore not needed. The discharge as permitted is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16.

### **PROCEDURAL REQUIREMENTS**

47. The Central Valley 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.
48. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
49. Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:  
[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality)  
or will be provided upon request.

IT IS HEREBY ORDERED, pursuant to Sections 13263, and 13267 of the California Water Code, that Order No. 5-05-052 is rescinded, and that the Merced Regional Waste Management Authority, 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 'hazardous waste' or 'designated waste' is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23, California Code of Regulations, Section 2510 et seq., and designated waste' is as defined in Title 27.
2. The discharge of wastes outside of a Unit or portions of a Unit specifically designed for their containment is prohibited.
3. The discharge of waste to a closed Unit is prohibited.

## **B. DISCHARGE SPECIFICATIONS**

1. The discharge shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of nuisance, degradation, contamination, or pollution of groundwater to occur, as indicated by the most appropriate statistical or nonstatistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements.
2. The discharge of solid waste, liquid waste, leachate, or waste constituents shall neither cause nor contribute to any degradation, contamination, pollution, or nuisance to surface waters, ponded water, or surface water drainage courses.
3. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Unit if such waste constituents could migrate to waters of the State — in either the liquid or the gaseous phase — and cause a condition of nuisance, degradation, contamination, or pollution.
4. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.

## **C. FACILITY SPECIFICATIONS**

1. The Discharger shall immediately notify the Central Valley Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or precipitation and drainage control structures.
2. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and construction.

3. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
4. 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.
5. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
6. 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, until closure of the landfill is complete and approved.
7. Annually, prior to the anticipated rainy season, 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 site.

#### **D. CONSTRUCTION SPECIFICATIONS**

1. The Discharger shall submit for Executive Officer review and approval either prior to, or concurrent with, submission of the Construction Quality Assurance Plan as per Construction Specification D.2.a., a Design Report for the construction of each cell of the proposed Unit expansion that includes detailed plans, specifications, and descriptions for the liner components and leachate collection and removal system components. The Design Report shall incorporate design rationale, with supporting calculations, for all components of the proposed containment system, and shall describe design details that allow for annual integrity testing of the leachate collection and removal system to demonstrate whether the leachate collection and removal system was designed and is operating to function without clogging, pursuant to Section 20340(d) of Title 27.
2. The Discharger shall submit for Executive Officer review and approval **at least 90 days** prior to construction, design plans and specifications for a Unit that includes the following:
  - a. A Construction Quality Assurance Plan meeting the requirements of Section 20324 of Title 27; and
  - b. A geotechnical evaluation of the area soils, evaluating their use as the base of the waste containment system; and

- c. An unsaturated zone monitoring system, which is demonstrated to remain effective throughout the active life, closure, and post-closure maintenance periods, which shall be installed beneath the composite liner system in accordance with Section 20415(d) of Title 27.
3. The base liner and side slope liner shall be constructed in accordance with the following composite liner design that has been demonstrated by the Discharger to meet the performance standards of Title 27:
  - a. An engineered alternative composite liner system that is comprised, in ascending order, of the following:
    - 1) A subgrade prepared in an appropriate manner using accepted engineering and construction methods that provides a surface that is smooth and free from rocks, sticks, and other debris that could damage or otherwise limit the performance of the composite liner system.
    - 2) A geosynthetic clay liner (GCL)
    - 3) Double-sided textured 60-mil high density polyethylene (HDPE) geomembrane
    - 4) 12-ounce geotextile cushion;
    - 5) 9-inch thick LCRS granular drainage layer;
    - 6) 8-ounce geotextile; and
    - 7) An operations layer of appropriate material to allow drainage of leachate to and through the leachate collection and removal system and provide a working surface protective of the leachate collection and removal system.
  - b. The proposed side slope liner for the waste containment system is comprised, in ascending order, of the following:
    - 1) Prepared subgrade;
    - 2) Geosynthetic clay liner;
    - 3) Single-sided textured 60-mil high density polyethylene (HDPE) geomembrane, (textured side down);
    - 4) 16-ounce geotextile cushion; and

5) 18-inch thick protective cover soil.

4. The Discharger may propose changes to the liner system design prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner system results in the protection of water quality equal to or greater than the design prescribed by this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation and approval by the Central Valley Water Board.
5. The leachate collection and removal system shall be designed and operated so that there is no buildup of hydraulic head on the base or sideslope liners.
6. Construction shall proceed only after all applicable construction quality assurance plans have been approved by the Executive Officer.
7. Following the completion of construction of any portion of a Unit, and prior to discharge to the newly constructed Unit, the final documentation required in Section 20324(d)(1)(C) of Title 27 shall be submitted to the Executive Officer for review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.
8. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during the construction of a liner system.
9. If leachate monitoring reveals substantial or progressive increases of leachate generation above the design leachate flow volume of a Unit or portion of a Unit, such that the depth of fluid on any portion of the leachate collection and removal system (excluding the leachate removal pump sump) exceeds 30 cm, the Discharger shall immediately notify the Central Valley Water Board in writing within seven days. The notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.
10. The waste to be discharged to the initial three feet of the expansion unit, as measured from the top of the operations layer of the liner system, shall consist only of "selected refuse", which does not include waste that would pose a danger of physical damage to the liner system.
11. Closure shall not proceed in the absence of closure waste discharge requirements.

**E. DETECTION MONITORING SPECIFICATIONS**

1. The Discharger shall provide Central Valley 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. At the beginning of each sampling period, in accordance with Section B. Reporting of Monitoring and Reporting Program No. R5-2011-0061, a schedule shall be submitted listing anticipated sampling dates for that reporting period.
2. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and the unsaturated zone in accordance with Monitoring and Reporting Program No. R5-2011-0061, which is incorporated into and made part of this Order.
3. The Discharger shall comply with the Water Quality Protection Standard (as defined in Section 20390 of Title 27), which is specified in Monitoring and Reporting Program No. R5-2011-0061 and the Standard Provisions and Reporting Requirements, dated April 2000.
4. The Water Quality Protection Standard for compounds which 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., USEPA methods 8260 and 8270). The presence of non-naturally occurring compounds in samples from detection monitoring wells is evidence of a release from the Unit unless the Discharger can demonstrate that the Unit is not the cause pursuant to Section 20420(k)(7) of Title 27.
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. R5-2011-0061.
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. R5-2011-0061 and Section 20415(e) of Title 27.
7. 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 the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.
8. Specific methods of collection and analysis shall 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), in accordance with an approved Sample Collection and Analysis Plan.

9. If methods other than USEPA-approved methods or Standard Methods are used, a detailed description of the methodology shall be submitted for review and approval by the Executive Officer prior to use.
10. The **methods of analysis and the detection limits** used shall 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 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 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. The Quality Assurance/Quality Control (**QA/QC**) **data** shall be reported, along with

the sample results to which they apply, including the method, equipment, and 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, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
16. The statistical method shall account for data below the PQL with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Section 20415(e)(7) of Title 27 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 this Order for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Section 20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, 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. The Discharger may propose an alternate statistical method [to the methods listed under Section 20415(e)(8)(A-D) of Title 27] in accordance with Section 20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). The analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.

18. The Discharger shall use the following nonstatistical method specified in Detection Monitoring Specification E.19 for all constituents which are not amenable to the statistical tests above (i.e., less than 10% of the data from background samples that equal or exceed their respective MDL). This includes all constituents in the Monitoring Parameters and for all Constituents of Concern (COC) found in groundwater and unsaturated zone (in soil-pore liquid or gas). Each constituent at a monitoring point shall be determined to meet this criterion based on either:

- a. The results from a single sample for that constituent, taken during that reporting period from that monitoring point; or
- b. If more than one sample has been taken during a reporting period from a monitoring point, the results from the sample which contains the largest number of qualifying constituents shall be used.

Background for water 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 27 Section 20415(e)(8)(A-D)] in accordance with Section 20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer.

19. The nonstatistical method shall be implemented as follows:

- a. For every compliance well, regardless of the monitoring program, the Discharger shall use this data analysis method, jointly, for all monitoring parameters and COCs that are detected in less than 10% of background samples. Any COC that triggers a discrete retest per this method shall be added to the monitoring parameter list.

Triggers — From the monitoring parameters and COC list identify each constituent in the current sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary indication [or, for a retest, provide a measurably significant indication] of a change in the nature or extent of the release, at that well, if either:

- 1) The data contains two or more qualifying monitoring parameters and/or COCs that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or
- 2) The data contains one qualifying monitoring parameter and/or COC that equals or exceeds its PQL.



b. Discrete Retest [Title 27, 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, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the indicating compliance well.
- 2) For any given compliance well retest sample, the Discharger shall include, in the retest analysis, only the laboratory analytical results for those constituents indicated in that well's original test. As soon as the retest data are available, the Discharger shall apply the same test [under 19.a.], to separately analyze each of the two suites of retest data at that compliance well.
- 3) If either (or both) of the retest samples meets either (or both) of the triggers under 19.a., then the Discharger shall conclude that there is a measurably significant increase at that well for the constituent(s) indicated in the validating retest sample(s).

20. If the Executive Officer determines, after reviewing the submitted report, that the detected constituent(s) most likely originated from the Unit(s), the Discharger shall **immediately** implement the requirements of Section XI. Response To A Release, C. Release Has Been Verified, contained in the Standard Provisions and Reporting Requirements.

## F. PROVISIONS

1. 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 appropriate Central Valley 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.
2. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility maintenance personnel, who shall be familiar with its contents, and to regulatory agency personnel.
3. 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.

4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2011-0061, which is incorporated herein and made part of this Order.
5. 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 (27 Section 20005 et seq. and 40 CFR 258 et seq.)*, dated April 2000, which is hereby incorporated into this Order.
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 Central Valley 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 determine 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 closure and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
9. The fact that it would be 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 violation of the Order.
10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley 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 Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in Provision G.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 Central Valley Water Board.
11. The Discharger shall conduct an annual review of the financial assurance for initiating and completing corrective action, and submit a report for Executive Officer review and approval by **30 July of each year**. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Central Valley Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.
12. The Discharger shall conduct an annual review of the financial assurance for closure and post-closure maintenance, and submit a report for Executive Officer review and approval by **30 July of each year**. The assurances of financial responsibility shall provide that funds for closure and post-closure maintenance shall be available to the Central Valley Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.

13. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule.

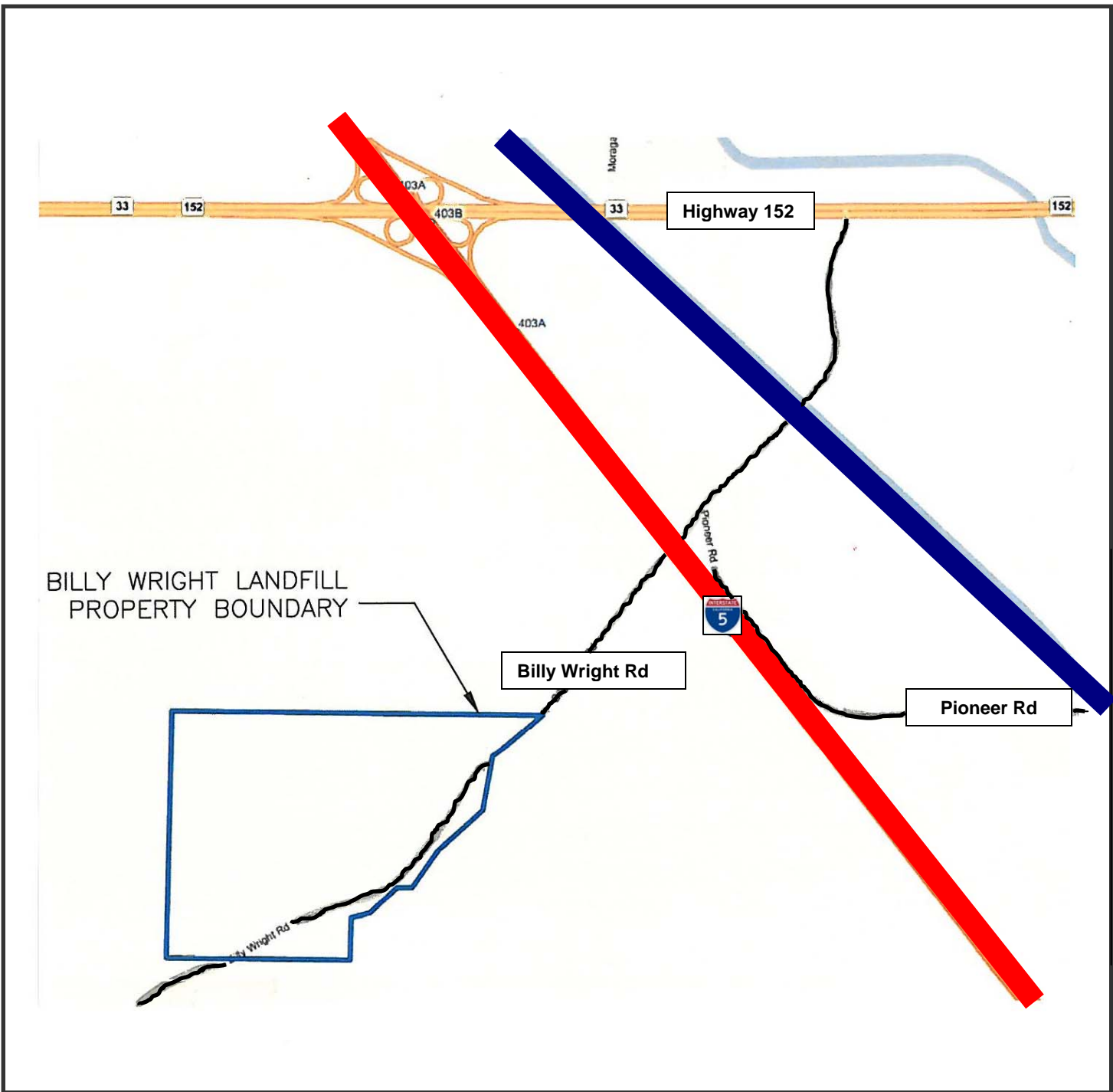
<u>Task</u>	<u>Compliance Date</u>
<b>A. Construction Plans</b>	
Submit construction and design plans for Executive Officer review and approval. (see Construction Specification D.2)	<b>At Least 90 Days Prior to Construction</b>
<b>B. Construction Report</b>	
Submit a construction report upon completion demonstrating construction was in accordance with approved construction plans for Executive Officer review and approval. (see Construction Specification D.7)	<b>Prior to discharge</b>
<b>C. Financial Assurance Review</b>	
1. Annual Review of Financial Assurance for initiating and completing corrective action (see Provision F.11.)	<b>30 July each year</b>
2. Annual Review of Financial Assurance for closure and post-closure maintenance (see Provision F.12.)	<b>30 July each year</b>

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provision of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement or issue a complaint for Administrative Civil Liability.

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 5 August 2011.

*Original signed by:*

\_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer



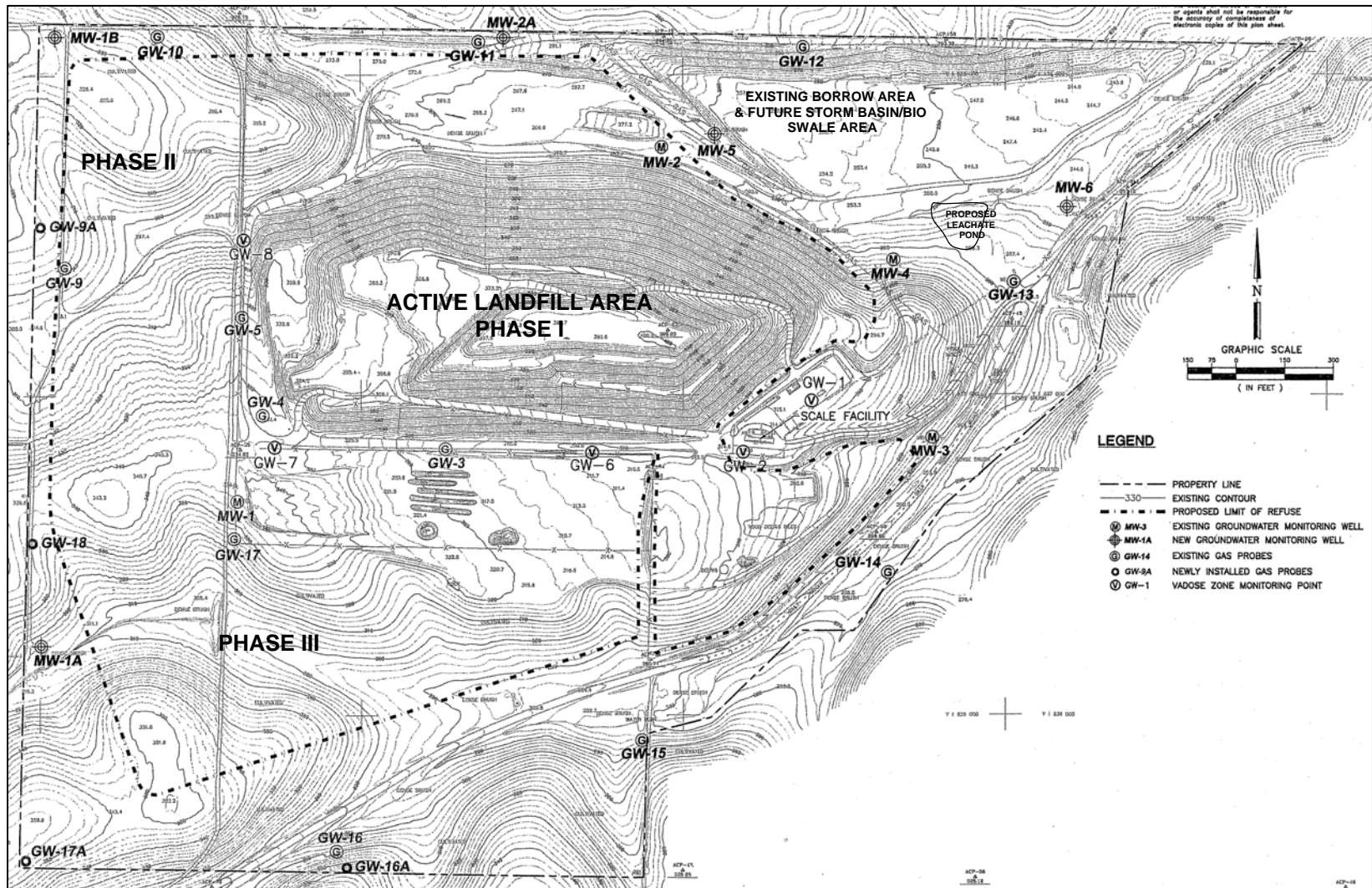
**ATTACHMENT A**

**LOCATION MAP**

ORDER NO. R5-2011-0061

WASTE DISCHARGE REQUIREMENTS  
FOR  
MERCED COUNTY REGIONAL WASTE MANAGEMENT  
AUTHORITY  
FOR  
OPERATION AND CONSTRUCTION  
BILLY WRIGHT SOLID WASTE LANDFILL  
MERCED COUNTY





**ATTACHMENT B**

**SITE PLAN**

ORDER NO. R5-2011-0061

WASTE DISCHARGE REQUIREMENTS  
 FOR  
 MERCED COUNTY REGIONAL WASTE MANAGEMENT AUTHORITY  
 FOR  
 OPERATION AND CONSTRUCTION  
 BILLY WRIGHT SOLID WASTE LANDFILL  
 MERCED COUNTY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2011-0061  
FOR  
MERCED COUNTY REGIONAL WASTE MANAGEMENT AUTHORITY  
FOR  
OPERATION AND CONSTRUCTION  
BILLY WRIGHT SOLID WASTE LANDFILL  
MERCED COUNTY

The Merced County Regional Waste Management Authority (hereafter 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 CFR 258)*, dated April 2000, as ordered by Waste Discharge Requirements Order No. R5-2011-0061. 40

**A. REQUIRED MONITORING REPORTS**

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section <b>D.1</b> )	See Table I
2. Unsaturated Zone Monitoring (Section <b>D.2</b> )	See Table II
3. Leachate Zone Monitoring (Section <b>D.3</b> )	See Table III
4. Surface Water Monitoring (Section <b>D.4</b> )	See Table IV
5. Facility Monitoring (Section <b>D.5</b> )	As necessary
6. Annual Monitoring Summary Report (Section <b>E.5</b> )	Annually
7. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary

**B. REPORTING**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2011-0061 and the Standard Provisions and Reporting Requirements. Reports which 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 E. Reporting Requirements, below.

**Report Due Dates**

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the California Regional Water Quality Control Board (Central Valley Water Board) in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Monthly	Quarterly	Last Day of Month	<b>by Quarterly Schedule</b>
Quarterly	Quarterly	31 March	<b>31 July</b>
		30 June	<b>31 July</b>
		30 September	<b>31 January</b>
		31 December	<b>31 January</b>
Semiannually	Semiannually	30 June	<b>31 July</b>
		31 December	<b>31 January</b>
Annually	Annually	31 December	<b>31 January</b>
5-Year	Every 5 years	31 December	<b>31 January</b>

The Discharger shall submit an **Annual Monitoring Summary Report** to the Central Valley Water Board covering the previous monitoring year. The annual report shall contain the information specified in Section E.5 Reporting Requirements, below, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley 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**

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points for each monitored medium. The Water Quality Protection Standard, or any modification thereto, shall be submitted in a report for review and approval.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** 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 zone(s).

The Water Quality Protection Standard shall be certified by a California registered civil engineer or professional 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**

The constituents of concern 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 constituents of concern for all Units at the facility are those listed in Tables I through VI for the specified monitored medium. The Discharger shall monitor all constituents of concern every five years.

### **3. Monitoring Parameters**

Monitoring parameters are constituents of concern 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.

### **4. Concentration Limits**

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27(e)(8);
- b. By an alternate statistical method meeting the requirements of §20415(e)(8)(E) of Title 27.

### **5. 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.

### **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 monitoring program provisions of Title 27 for groundwater and the unsaturated zone, in accordance with Detection Monitoring Specification E.2 and E.3 of Waste Discharge Requirements, Order No. R5-2011-0061. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

All monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, unsaturated zone monitoring devices, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through VI.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table VI.

The Discharger may, with the approval of the Executive Officer, 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 detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with a Detection Monitoring Program approved by the Executive Officer. The detection monitoring system shall be certified by a California-licensed professional registered civil engineer or professional 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 determine 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 quarterly and submitted annually.

Groundwater samples shall be collected from the monitoring wells that are part of the approved groundwater monitoring system. Samples 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 Schoeller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table VI every five years.

## **2. Unsaturated Zone Monitoring**

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provision of Section 20415 and 20420 of Title 27 in accordance with an approved Detection Monitoring Program. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

Unsaturated zone samples shall be collected from the monitoring devices of the approved unsaturated zone monitoring system. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in Table II. All monitoring parameters shall be graphed so as to show historical trends at each monitoring point. Samples for the constituents of concern specified in Table II shall be collected and analyzed in accordance with the methods listed in Table VI every five years.

The pan lysimeters shall be checked quarterly for liquid and monitoring shall also include the total volume of liquid removed from the system. Unsaturated zone monitoring reports shall be included with the corresponding semiannual groundwater monitoring and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

## **3. Leachate Zone Monitoring**

All leachate collection and removal system sumps shall be inspected monthly for leachate generation. Upon detection of leachate in a previously dry leachate collection and removal system, leachate shall be sampled **within two days** and analyzed for the constituents listed in Table III. Leachate shall also be sampled and analyzed annually during the fourth quarter thereafter, with a retest during the following second quarter if constituents are detected that have not been previously detected. Leachate samples shall be collected and analyzed for the listed constituents in accordance with the methods and frequency specified in Table III. The constituents of concern list shall include all constituents listed in Table VI. The quantity of leachate pumped from each sump shall be measured and reported monthly as Leachate Flow Rate (in

gallons).

Leachate which seeps to the surface from the Unit shall be sampled and analyzed for the constituents listed in Table III upon detection. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

#### 4. **Surface Water Monitoring**

The Discharger shall maintain and operate a surface water detection monitoring system where appropriate that complies with the applicable provisions of §20415 and §20420 of Title 27 and has been approved by the Executive Officer.

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. All surface water monitoring samples shall be collected and analyzed for the constituents of concern specified in Table VI every five years. All monitoring parameters shall be graphed so as to show historical trends at each sample location.

#### 5. **Facility Monitoring**

##### a. **Facility Inspection**

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., below. 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 the repairs.

##### b. **Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events* (i.e., a storm that causes continuous runoff for at least one hour). Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report 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 containment facilities and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs. Minor damage and subsequent repairs shall be reported in the next self-monitoring report.

## **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 postclosure period.

Such legible records shall show the following for each sample:

- a. 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;
  - b. Date, time, and manner of sampling;
  - c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
  - d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
  - e. Calculation of results; and
  - f. 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 if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.
  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 ensure that monitoring results provide a reliable indication of water quality;
  - 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 for ACTIVE landfill units shall be conducted **weekly** during the wet season (1 October to 30 April) and **monthly** during the dry season (1 May to 30 September). Standard observations for INACTIVE or CLOSED landfill units shall be conducted **monthly** during the wet season (1 October to 30 April) and **quarterly** during the dry season (1 May to 30 September). 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); and
  - b) Evidence of erosion and/or of day-lighted refuse.
- 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); and
  - b) Evidence of erosion and/or of day-lighted refuse.
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 Central Valley 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 Constituents of Concern listed in Table III of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
  - e. Corrective measures underway or proposed, and corresponding time schedule.
5. The Discharger shall submit an **Annual Monitoring Summary Report** covering the reporting period of the previous monitoring year. This report shall contain:
  - a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five 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 form as well as in a digital file format. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Section 20420(h) of Title 27], in that this facilitates periodic review by the Central Valley 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. An evaluation of the effectiveness of the leachate monitoring/control facilities including the results of the annual testing of leachate collection and removal systems required under VIII.P of the Standard Provisions and Reporting Requirements.

The Discharger shall implement the above monitoring program on the effective date of this Program.

*Original signed by:*  
Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer  
  
August 5, 2011  
\_\_\_\_\_  
(Date)

**TABLE I**  
**GROUNDWATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Groundwater Elevation	Ft. & hundredths, M.S.L. <sup>(1)</sup>	Quarterly
Temperature	OC <sup>(2)</sup>	Semiannual
Electrical Conductivity	µmhos/cm <sup>(3)</sup>	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units <sup>(4)</sup>	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L <sup>(5)</sup>	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L <sup>(6)</sup>	Semiannual
<b>Constituents of Concern (see Table VI)</b>		
Total Organic Carbon	mg/L	Every 5 years
Inorganics (dissolved)	mg/L	Every 5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	Every 5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	Every 5 years
Chlorophenoxy Herbicides (USEPA Method 8151)	µg/L	Every 5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	Every 5 years

(1). Feet and hundredths of a foot above mean sea level.

(2). Degree Celsius.

(3). Micromhos per centimeter.

(4). Nephelometric turbidity units.

(5). Milligrams per liter.

(6). Micrograms per liter.

**TABLE II**  
**UNSATURATED ZONE DETECTION MONITORING PROGRAM**

**SOIL-PORE GAS**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Monitoring Parameters</b>		
Volatile Organic Compounds (USEPA Method TO-14)(15)	µg/cm <sup>3</sup> (1)	Semiannual
Methane	%	Semiannual

**PAN LYSIMETERS, SUCTION LYSIMETERS AND OTHER VADOSE ZONE MONITORING DEVICES**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Electrical Conductivity	µmhos/cm (1)	Semiannual
pH	pH units	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L (2)	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate – Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L (3)	Semiannual
<b>Constituents of Concern (see Table VI)</b>		
Total Organic Carbon	mg/L	Every 5 years
Inorganics (dissolved)	mg/L	Every 5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	Every 5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	Every 5 years
Chlorophenoxy Herbicides (USEPA Method 8151)	µg/L	Every 5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	Every 5 years

(1). Micromhos per centimeter.

(2). Milligrams per liter.

(3). Micrograms per liter.

**TABLE III**  
**LEACHATE DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Total Flow	Gallons	Monthly
Flow Rate	Gallons/Day	Monthly
Electrical Conductivity	µmhos/cm <sup>(1)</sup>	Annually
pH	pH units	Annually
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L <sup>(2)</sup>	Annually
Chloride	mg/L	Annually
Carbonate	mg/L	Annually
Bicarbonate	mg/L	Annually
Nitrate - Nitrogen	mg/L	Annually
Sulfate	mg/L	Annually
Calcium	mg/L	Annually
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Sodium	mg/L	Annually
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L <sup>(3)</sup>	Annually
<b>Constituents of Concern (see Table VI)</b>		
Total Organic Carbon	mg/L	Every 5 years
Inorganics (dissolved)	mg/L	Every 5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	Every 5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	Every 5 years
Chlorophenoxy Herbicides (USEPA Method 8151)	µg/L	Every 5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	Every 5 years

(1). Micromhos per centimeter.

(2). Milligrams per liter.

(3). Micrograms per liter.

**TABLE IV**  
**SURFACE WATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm <sup>(1)</sup>	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units <sup>(2)</sup>	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L <sup>(3)</sup>	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Chloride	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L <sup>(4)</sup>	Semiannual
<b>Constituents of Concern (see Table VI)</b>		
Total Organic Carbon	mg/L	Every 5 years
Inorganics (dissolved)	mg/L	Every 5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	Every 5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	Every 5 years
Chlorophenoxy Herbicides (USEPA Method 8151)	µg/L	Every 5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	Every 5 years

(1). Micromhos per centimeter.  
 (2). Nephelometric turbidity units.  
 (3). Milligrams per liter.  
 (4). Micrograms per liter.

**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:**

**USEPA Method 8260**

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)

**USEPA Method 8260**

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 (1,1 -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)

**TABLE V**  
**MONITORING PARAMETERS FOR DETECTION MONITORING**  
**Continued**

Hexachlorobutadiene  
Hexachloroethane  
Methyl bromide (Bromomethene)  
Methyl chloride (Chloromethane)  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Methyl ethyl ketone (MEK: 2-Butanone)  
Methyl iodide (Iodomethane)  
Methyl t-butyl ether  
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-Trichloroethane (Methylchloroform)  
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**

<b><u>Inorganics (dissolved):</u></b>	<b><u>USEPA Method</u></b>
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	200.8
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	200.8
Lead	200.8
Mercury	7470
Nickel	6010
Selenium	200.8
Thallium	200.8
Cyanide	E335.4
Sulfide	376.2

**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)



**TABLE VI**

**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

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, 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)  
1,3-Dichloropropane (Trimethylene dichloride)  
2,2-Dichloropropane (Isopropylidene chloride)  
1,1 -Dichloropropene  
cis- 1,3-Dichloropropene  
trans- 1,3-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  
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

**TABLE VI**

**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

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-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)  
4-Bromophenyl phenyl ether  
Butyl benzyl phthalate (Benzyl butyl phthalate)  
Chlordane  
p-Chloroaniline

**TABLE VI**

**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

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-Dimethylphenol (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

**TABLE VI**

**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

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-Nitrosopyrrolidine  
5-Nitro-o-toluidine  
Pentachlorobenzene  
Pentachloronitrobenzene (PCNB)  
Pentachlorophenol  
Phenacetin  
Phenanthrene  
Phenol  
p-Phenylenediamine  
Polychlorinated biphenyls (PCBs; Aroclors)  
Pronamide  
Pyrene  
Safrole

**TABLE VI**

**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

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 8151**

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 8141**

Atrazine  
Chlorpyrifos  
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)  
Diazinon  
Dimethoate  
Disulfoton  
Ethion  
Methyl parathion (Parathion methyl)  
Parathion  
Phorate  
Simazine

## INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2011-0061  
FOR MERCED COUNTY REGIONAL WASTE MANAGEMENT AUTHORITY  
FOR OPERATION AND CONSTRUCTION  
BILLY WRIGHT SOLID WASTE LANDFILL  
MERCED COUNTY

The waste management facility is owned by Merced County Regional Waste Management Authority (hereafter Discharger) and operated by the Merced County Public Works Department. The facility is approximately eight miles west of the City of Los Banos and 1 mile south of Highway 152.

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) adopted Order 5-00-052 on 17 March 2000, which classified the Unit as a Class III landfill as defined in Title 27, California Code of Regulations, Section 20005 et seq. (hereafter Title 27). The proposed Order revises the existing Waste Discharge Requirements to provide for the expansion of the waste management Unit with an engineered alternative composite liner system.

The facility contains one inactive and one active unlined waste management unit (Unit) covering 39.8 acres. The total permitted area of the facility is approximately 172.7 acres, of which approximately 101.8 acres will comprise the proposed expansion area for future Units. Remaining land will be utilized for the scale facility, retention basins, a composting facility, a resource recovery area, a proposed transfer station, and buffer zones.

The facility is underlain by marine sedimentary rocks, which include mudstone with lesser fine-grained sandstone, concretionary and fossiliferous sandstone, and gypsum of the Late Cretaceous Panoche and/or Moreno Formations.

Depth to first encountered groundwater ranges from approximately eight to 44 feet below the native ground surface. Groundwater elevations range from 257 feet mean sea level (MSL) to 294 MSL.

The existing groundwater detection monitoring system consists of eight groundwater monitoring wells. The surface water detection monitoring system consists of three surface water monitoring points.

Several Volatile organic compounds (VOCs) have been detected in downgradient monitoring wells below water quality criteria on a sporadic basis, including: chloroethane, 1,1-dichloroethane, 1,2-dichloroethane, dichlorodifluoromethane, dichloromethane, trichloroethylene. In addition, several inorganic constituents of concern have been sporadically detected at concentrations above tolerance limits, including: nitrate, chloride, and sulfate. Concentration of these constituents have been below tolerance limits in recent monitoring events.

Section 20080(b) of Title 27 allows the Central Valley Water Board to consider the approval of an engineered alternative to the prescriptive standard liner design. In order to approve an engineered alternative in accordance with Sections 20080(c)(1) or (2) of Title 27, the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Section 20080(b) of Title 27, or would be impractical and would not promote attainment of applicable performance standards.

The Discharger demonstrated that the proposed engineered alternative liner system is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Section 20080(b)(2) of Title 27.

The proposed waste containment system consists of, from the bottom up for the base liner: a prepared subgrade; a geosynthetic clay liner over subgrade; a double-sided textured 60-mil high density polyethylene (HDPE) geomembrane; a 12-ounce geotextile cushion; a 9-inch thick LCRS granular drainage layer; an eight-ounce geotextile; and a one foot of protective cover soil. The proposed side slope liner design consists, from bottom up of: a prepared subgrade; a geosynthetic clay liner; a single-sided textured 60-mil high density polyethylene (HDPE) geomembrane (textured side down); a 16-ounce geotextile cushion; and an 18-inch thick protective cover soil.

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.

This order updates the waste discharge requirements for the facility in conformance with the California Water Code and Title 27, and the revisions and policies adopted thereunder, for operation and construction.

This order requires full containment of wastes and does not permit degradation of surface water or groundwater. Further antidegradation analysis is therefore not needed. The discharge is consistent with the antidegradation provisions of State Water Resource Control Board Resolution No. 68-16.