

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2007-\_\_\_\_\_

WASTE DISCHARGE REQUIREMENTS  
FOR  
WESTERN PLACER WASTE MANAGEMENT AUTHORITY  
FOR  
WESTERN REGIONAL SANITARY LANDFILL FACILITY  
CONSTRUCTION AND OPERATION  
CLASS II AND CLASS III LANDFILLS  
PLACER COUNTY

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

1. Western Placer Waste Management Authority, (hereafter Discharger) owns the Western Regional Sanitary Landfill Facility (facility), a municipal solid waste landfill about 5.5 miles north-northeast of Roseville, in Section 6, T11N, R6E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order by reference. The Discharger is a joint powers organization with members from Placer County, and the cities of Lincoln, Roseville, and Rocklin.
2. The Discharger contracts the operation of the facility to Madera Disposal, Inc. a wholly-owned subsidiary of Waste Connections Inc. Madera Disposal is responsible for all day-to-day operations of the landfill. The Discharger oversees the operations and performs all periodic monitoring and has staff located at the facility.
3. The facility covers approximately 291 acres at 3195 Athens Road, Lincoln, California 95648, of which 231 acres are permitted for disposal activities. The facility consists of two waste management units – a Class II landfill and a Class III landfill. The Class III landfill has 6 modules; Modules 1, 2, 10, 11, 12, and 13. The Class II landfill has 8 modules; future modules 5, 6, 7, 8, and 9, existing modules 14 and 15, and proposed module 16. These waste management units and modules are shown in Attachment B, which is incorporated herein and made part of this Order. Landfill modules are not separate waste management units, but are designations for operations planning. The facility is located on Assessor's Parcel Number (APN) 017-061-074.
4. Effective 18 July 1997, the water quality regulations for Class II and Class III disposal facilities formerly contained in Titles 23 and 27 of the California Code of Regulations (CCR) were re-codified into Chapters 1 through 7, Subdivision 1, Division 2, Title 27, CCR (Title 27).

5. The Discharger proposes to construct a new disposal module, Module 16, during the summer of 2007. On 18 January 2007, staff approved a liner performance demonstration for an engineered alternative that complies with 27 CCR 20080 (b) for Module 16 and future Class II waste management units.
6. Three specific changes are proposed for the Module 16 liner system design:
  - a. The LCRS gravel is being reduced from 12-inches to 9-inches;
  - b. The side slopes are being steepened from 3:1 (horizontal to vertical) to 2:1 H:V, and;
  - c. The geocomposite drainage layer is being omitted from the side slopes.
7. The current WDRs (R5-2002-0218) for the facility stipulate that "*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 Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Board*" (Construction Specifications, part D (2)).
8. Order No. 2002-0218 is being revised to reflect the above changes.

### **FACILITY DESCRIPTION**

9. The facility is located on gently rolling terrain at the base of the Sierra Nevada foothills. Pre-landfill development elevations ranged from approximately 106 feet above mean sea level in the southwest corner of the facility to about 134 feet above mean sea level in the center portion of the facility.
10. Geologic units in the vicinity of the facility include the following from youngest to oldest: Holocene age alluvium and basin deposits; Pleistocene age Riverbank Formation; Pleistocene age Turlock Lake Formation; Pliocene age Laguna Formation; and Miocene-Pliocene age Mehrten Formation.
11. Subsurface sediments beneath the facility include unconsolidated to strongly indurated clays, silts, and sands, with lenses of gravel. The hydraulic conductivity of these sedimentary deposits range from  $1 \times 10^{-4}$  to  $1 \times 10^{-7}$  cm/sec. The sedimentary deposits extend to a depth of approximately 200 feet below ground surface (bgs) and are a part of the Victor and Fair Oaks Formations.

12. There are no known Holocene faults within 200 feet of the facility. The Spenceville fault and Mysterious Ridge Segment are the closest active faults to the facility, 13 miles to the east and 27 miles to the west, respectively. For purposes of developing a representative seismic hazard assessment of the facility a random source third near-field source was identified. The maximum credible earthquake (MCE) determined for the Spenceville fault, Mysterious Ridge Segment and the random source have moment magnitudes ( $M_W$ ) of 6.5, 6.75 and 5.5, respectively. The estimated peak horizontal ground acceleration (PHGA) that could be expected at the site from a  $M_W$  6.5 earthquake on the Spenceville Fault is 0.15g. The estimated PHGA that could be expected at the site from a  $M_W$  6.75 earthquake on the Mysterious Ridge Segment is 0.10g. The random source event ( $M_W$  5.5) produces a PHGA of 0.25g. Therefore, the ground acceleration associated with a MCE event on a random source located 3 miles from the facility was used in the design.
13. The mean annual rainfall for the facility is 17.24 inches as measured at the Sacramento International Airport weather station (1941 to 2000).
14. The average pan evaporation is 60.74 inches per year based on data from the Nicolaus, CA 3SE Station (1978 to 2001).
15. The 1000-year, 24-hour precipitation event is estimated to be 6.0 inches, based on the isohyetal map prepared by the Western Regional Climatic Center (WRCC, 2000).
16. The facility is not located within the estimated flood boundaries for the 100-year flood event based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map.
17. Land uses within 1,000 feet of the facility are agriculture, ranching and light industry.
18. There are 12 off-site water wells within 1 mile of the facility.

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

19. The Discharger proposes to continue to discharge municipal solid waste and wastewater treatment sludge to the Class II landfill. These waste are classified as 'designated,' 'nonhazardous solid waste,' and 'inert waste' using criteria set forth in Title 27. Only 'nonhazardous solid waste,' 'inert waste,' dewatered sewage sludge, and water treatment sludge shall be discharged into the Class III landfill.
20. The area served by the facility includes the cities of Roseville, Auburn, Lincoln, Rocklin, town of Loomis and all the unincorporated areas of Placer County. These encompass the western and southern portions of Placer County.

## **SURFACE AND GROUND WATER CONDITIONS**

21. The Water Quality Control Plan for the Sacramento River Basin and 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.
22. Surface water in the area of the facility drains to the north to Orchard Creek and to the south to Pleasant Grove Creek. Both of these streams eventually flow into the Sacramento River. These surface water bodies consist of intermittent streams that are primarily used for agricultural purposes. Storm water is the only surface water at the facility.
23. The designated beneficial uses of the Sacramento River, as specified in the Basin Plan, are municipal and domestic supply; agricultural irrigation supply; water contact recreation, including canoeing and rafting; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; warm and cold migration of aquatic organisms; warm and cold spawning, reproduction, and/or early development; wildlife habitat; and navigation.
24. The first encountered groundwater varies from approximately 70 to 110 feet below the native ground surface.
25. The groundwater gradient is approximately 0.002 and flows primarily toward the southwest. The average groundwater velocity is 12 feet per year.
26. 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.
27. There are no known springs within the facility or within 1 mile of the facility.
28. The landfill is located on the eastern boundary of the Sacramento Valley groundwater basin. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; water contact recreation, including canoeing and rafting; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; wildlife habitat; and navigation.

## GROUNDWATER MONITORING

29. The groundwater in local domestic and agricultural wells in the vicinity of the landfill has been documented by the U.S. Geological Survey to be of good quality. The groundwater was shown to have generally low total dissolved solids (150 to 250 mg/L), with low chloride (generally 8 to 30 mg/l and low sulfate (2 to 10 mg/l) (USGS, 1977). Chloride concentrations measured in background monitoring wells near the landfill range from 25 to 45 mg/L.
30. The groundwater monitoring network consists of twenty-five (25) monitoring wells.
31. Six (6) wells are associated with corrective action monitoring and sampled quarterly: MW-5, MW-9, MW-10, MW-11R, MW-13, and MW-23R.
32. The detection monitoring program consists of wells MW-2, MW-3, MW-6 through MW-8, MW-12, MW-14 through MW-22 and MW-24. Monitoring wells LW-1 and MW-4 are the up-gradient background monitoring wells. Down-gradient detection monitoring wells Wells MW-19 and MW-20 are sampled quarterly. The remainder of the detection monitoring wells are sampled semiannually during the second and fourth quarters. MW-1 is used for water levels only.
33. Each well monitors the upper-most water-bearing zone and is equipped with a dedicated, variable speed, stainless steel submersible pump.
34. Volatile organic compounds (VOCs) are often detected in a release from a landfill and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill (see Finding No. 39). Since VOCs are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a Unit.
35. Sections 20415(e)(8) and (9) of Title 27 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 §20415(b)(1)(B)2 of Title 27. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
36. The Regional Water Board may specify a non-statistical data analysis method pursuant to Section 20080(a)(1) of Title 27. Section 13360(a)(1) of the California Water Code allows the Regional Water Board to specify requirements to protect underground 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.

37. 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.
38. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there is an indication of 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 may have occurred. Following an indication of a release, verification testing will be conducted at the same location to determine whether there has been a release from the Unit 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.

#### **GROUNDWATER DEGRADATION AND CORRECTIVE ACTION PROGRAM**

39. VOCs have historically been detected in monitoring well MW-9 located near the older, unlined modules. VOCs have also been detected consistently in corrective action monitoring well MW-10 and sporadically in MW-11R, which are down-gradient and up-gradient of well MW-9, respectively. VOCs have also been detected in detection monitoring wells MW-5, MW-13, and background monitoring well MW-23R during past quarterly monitoring events. The detection of VOCs in these wells appears to be a result of significantly lower laboratory detection limits and the concomitant improved definition of the existing VOC plume associated with the older unlined modules which are under corrective action. The Monitoring and Reporting Program in Order No. R5-2002-0218 reclassified wells MW-5, MW-9, MW-10, MW-11R, MW-13 and MW-23R as corrective action monitoring wells.
40. The Discharger has been implementing measures proposed in the 23 September 1997 Corrective Action Program and subsequent addendum. The CAP specifies the following actions: installation of 8 infill gas wells; closure of Modules 1, 2, 10, 11 and 12; quarterly monitoring of wells MW-5, MW-9 through MW-11R, MW-13, and MW-23R; and preparation of an aquifer characteristics report. All of the measures have been implemented with the exception of the closure of Module 12. Module 12 will be closed with Module 13 as one project no later than 18 months from the date of final receipt of waste.

41. During the fourth quarter 1998 monitoring event, chloride was detected in monitoring well MW-19 at concentrations exceeding the chloride concentration limit. Results from a retest conducted in December 1998 confirmed the exceedance. Regional Water Board staff required an evaluation of groundwater quality directly up-gradient of well MW-19 to assess whether a landfill release had occurred. The investigation involved the advancement of four exploratory borings upgradient of Monitoring Well MW-19 to depths from 50 to 105.5 feet and the collection of grab groundwater samples for laboratory analysis. The investigation indicated that a small, potentially transient localized upper zone of saturated sand and clayey sand exists in the area. Monitoring data from the investigation and from ongoing quarterly monitoring data do not indicate evidence of a release. However, these WDRs require that MW-19 and MW-20 continue to be monitored on a quarterly, as opposed to semi-annual, schedule.
42. The Discharger is conducting corrective action monitoring to demonstrate the effectiveness of the CAP per Title 27, Section 20430, as well as concurrent detection monitoring to provide the best assurance of the detection of potential subsequent releases per Title 27, Section 20385(a)(4)(c) and Section 20420. The Discharger must demonstrate that the facility is in compliance with its Water Quality Protection Standard, including any applicable concentration limits greater than background, before the facility can cease corrective action monitoring and return to facility-wide detection monitoring.

#### **LINER PERFORMANCE DEMONSTRATION**

43. On 15 September 2000 the Regional Water Board adopted Resolution No. 5-00-213, "Request For The State Water Resources Control Board To Review The Adequacy Of The Prescriptive Design Requirements For Landfill Waste Containment Systems To Meet The Performance Standards Of Title 27." The State Board responded, in part, that "a single composite liner system continues to be an adequate minimum standard" however, the Regional Water Board "should require a more stringent design in a case where it determines that the minimum design will not provide adequate protection to a given body of groundwater."
44. In a letter dated 17 April 2001, the Executive Officer notified Owners and Operators of Solid Waste Landfills that "the Regional Water Board will require a demonstration that any proposed landfill liner system to be constructed after 1 January 2002 will comply with Title 27 performance standards. A thorough evaluation of site-specific factors and cost/benefit analysis of single, double and triple composite liners will likely be necessary."

45. On 23 August 2006, the Discharger submitted a liner demonstration report for the engineered alternative for the proposed Module 16. The engineered alternative was submitted to demonstrate that the proposed Module 16 Class II liner system would comply with the performance standards of Title 27 for Class II waste management units. Based on comments by the Regional Water Board, the engineered alternative was revised in an addendum letter submitted 6 December 2006. The proposed liner system for Module 16 consists of a 12.5-acre double composite base liner and a 4.5-acre single composite side-slope liner on slopes having an inclination of 2H:1V. The Discharger eliminated the LCRS layer from the 2H:1V side slopes because its calculations showed negligible potential for leachate head buildup on the 2H:1V side slope liner system when using the waste overlying the operations layer as the horizontal drainage layer. The revised engineered alternative demonstrated that the proposed liner system would effectively prevent the migration of wastes from Module 16 and was approved on 18 January 2007.
46. All future Class II modules (Modules 5, 6, 7, 8, and 9) will be constructed with a double-composite base liner system and a single composite side-slope system unless a site-specific demonstration is conducted and indicates that a different design, such as the prescriptive design or an engineered alternative design, complies with the Title 27 performance standards.

### **CONSTRUCTION AND ENGINEERED ALTERNATIVE**

47. On 17 June 1993, the State Water Resources Control Board adopted Resolution No. 93-62 implementing a State Policy for the construction, monitoring, and operation of municipal solid waste landfills that is consistent with the federal municipal solid waste regulations promulgated under Title 40, Code of Federal Regulations, Part 258 (Subtitle D).
48. Resolution No. 93-62 requires the construction of a specified composite liner system at new municipal solid waste landfills, or expansion areas of existing municipal solid waste landfills, that receive wastes after 9 October 1993.
49. Resolution No. 93-62 also allows the Regional Water Board to consider the approval of engineered alternatives to the prescriptive standard. Section III.A.b. of Resolution No. 93-62 requires that the engineered alternative liner systems be of a composite design similar to the prescriptive standard.
50. Section 20080(b) of Title 27 allows the Regional Water Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with §20080(c)(1) and (2), 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 §20080(b), 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 §20080(b)(2) of Title 27.

51. Section 13360(a)(1) of the California Water Code allows the Regional 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.

52. The Discharger proposes a liner system which will be designed, constructed, and operated to prevent migration of wastes from the Unit to adjacent natural geologic materials, groundwater, or surface water during disposal operations, closure, and the post-closure maintenance period in accordance with the criteria set forth in Title 27 for a Class II landfill, and the provisions in State Water Resources Control Board Resolution No. 93-62 for municipal solid wastes.

53. The existing and proposed modules at the facility are described in the following table.

Module	Waste Management Unit (Landfill Classification)	Description of Module	Status
1	Class III	Consists of compacted on-site soils with a hydraulic conductivity ranging from $1 \times 10^{-4}$ to $1 \times 10^{-7}$ cm/sec.  Final cover consisting of the following: 1-foot thick soil vegetative layer, 1-foot thick compacted clay layer ( $3.4 \times 10^{-7}$ cm/s to $6.8 \times 10^{-8}$ cm/s), and a 2-foot soil foundation layer.	Closed
2	Class III	Consists of compacted on-site soils with a hydraulic conductivity ranging from $1 \times 10^{-4}$ to $1 \times 10^{-7}$ cm/sec.  Final cover consisting of the following: 1-foot thick soil vegetative layer, 1-foot thick compacted clay layer ( $3.4 \times 10^{-7}$ cm/s to $6.8 \times 10^{-8}$ cm/s), and a 2-foot soil foundation layer. Intermediate cover on western side slope ( $1.6 \times 10^{-5}$ to $1.6 \times 10^{-6}$ cm/sec).	Closed
10	Class III	Consists of compacted on-site soils with a hydraulic conductivity ranging from $1 \times 10^{-4}$ to $1 \times 10^{-7}$ cm/sec.  Final cover consisting of the following: 1-foot thick soil vegetative layer, 1-foot thick compacted clay layer ( $3.4 \times 10^{-7}$ cm/s to $6.8 \times 10^{-8}$ cm/s), and a 2-foot soil foundation layer. Intermediate cover on western side slope ( $1.6 \times 10^{-5}$ to $1.6 \times 10^{-6}$ cm/sec).	Closed
11	Class III	A portion of the module is lined with on-site soils with a hydraulic conductivity ranging from $1 \times 10^{-4}$ to $1 \times 10^{-7}$ cm/sec. The other portion contains a composite liner consisting of compacted on-site soils overlain by a HDPE liner. The liners are overlain by a blanket LCRS.  Final cover consisting of the following: 1-foot thick soil vegetative	Closed

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Module	Waste Management Unit (Landfill Classification)	Description of Module	Status
		layer, 1-foot thick compacted clay layer ( $3.4 \times 10^{-7}$ cm/s to $6.8 \times 10^{-8}$ cm/s), and a 2-foot soil foundation layer. Intermediate cover on western side slope ( $1.6 \times 10^{-5}$ to $1.6 \times 10^{-6}$ cm/sec).	
12	Class III	Composite liner consisting of the following blanket LCRS, 60-mil HDPE liner, compacted on-site soils.	Active
13	Class III	Composite liner constructed to RCRA, Subtitle D specifications and consisting of the following: Blanket LCRS 60-mil HDPE liner, 2-foot compacted clay layer with a hydraulic conductivity of $7.9 \times 10^{-8}$ cm/s.	Active
14	Class II	<p>Base composite liner system on the module floor consisting of the following: 1-foot thick compacted clay layer with a hydraulic conductivity of <math>1 \times 10^{-7}</math> cm/sec or less soil, GCL, and a smooth 60-mil thick HDPE geomembrane, overlain by a blanket LCRS.</p> <p>The side slope liner consists of a 2-foot thick compacted clay layer with a hydraulic conductivity of <math>1 \times 10^{-7}</math> cm/sec or less overlain by a textured 60-mil thick HDPE geomembrane overlain by a blanket LCRS.</p> <p>Base composite liner system on the module's south facing slope underlain by Module 13 refuse (Attachment D) consisting of the following: Minimum 1-foot thick operations layer, 60-mil HDPE liner, intermediate cover foundation soil layer.</p>	Active
15	Class II	<p>Base double composite liner on the base floor consisting of the following: prepared subgrade; GCL with maximum hydraulic conductivity of <math>5 \times 10^{-9}</math> cm/sec; 60-mil thick textured HDPE geomembrane; geonet leak detection layer; GCL with a hydraulic conductivity less than <math>5 \times 10^{-9}</math> cm/sec; 60-mil double-sided textured HDPE geomembrane; 12-inch thick LCRS; geotextile filter fabric; and 12-inch thick operations layer.</p> <p>The single composite side slope liner consists of the following: prepared subgrade; GCL with maximum hydraulic conductivity of <math>5 \times 10^{-9}</math> cm/sec; 60-mil thick textured HDPE geomembrane; geocomposite leachate drainage layer with heat bonded nonwoven geotextile on both sides and a temporary HDPE geomembrane ultraviolet (UV) protection layer. The UV protection layer will be removed and replaced with a 2-foot thick operations layer prior to the discharge of waste.</p>	Active
5, 6, 7, 8, 9, and 16	Class II	<p>Base double composite liner on the base floor consisting of the following: prepared subgrade; GCL with maximum hydraulic conductivity of <math>5 \times 10^{-9}</math> cm/sec; 60-mil thick double-sided textured HDPE geomembrane; geonet leak detection layer; GCL with a hydraulic conductivity less than <math>5 \times 10^{-9}</math> cm/sec; 60-mil single-sided textured HDPE geomembrane; 9-inch thick gravel LCRS; geotextile filter fabric; and 15-inch thick operations layer.</p> <p>The single composite side slope liner consists of the following: prepared subgrade; GCL with maximum hydraulic conductivity of <math>5 \times 10^{-9}</math> cm/sec; 60-mil thick single-textured HDPE geomembrane; 2-foot thick operations layer prior to the discharge of waste.</p> <p>Final cover system consisting of the following: 1-foot thick soil vegetative layer, geocomposite drainage net, 60-mil HDPE liner, GCL with a hydraulic conductivity less than <math>5 \times 10^{-9}</math> cm/sec, and a 2-foot soil foundation layer.</p>	Permitted. To be constructed.

54. All containment structures shall be designed and constructed under the direct supervision of a California registered civil engineer or certified engineering geologist and shall be certified by that individual as meeting the prescriptive standards and performance goals of Title 27 prior to waste discharge.
55. The base grade elevations have been developed to provide a minimum of at least 10 feet of separation between groundwater (including capillary rise) and waste materials. The separation between current groundwater levels and waste, including capillary fringe, is in excess of 36 feet based on 2006 groundwater elevation data.
56. Final landfill slopes will be inclined no steeper than 3.5 H:1V with intermediate, 15-foot wide benches every 50 vertical feet. Minimum final surface slopes will be 3 percent.
57. The LCRS in Module 16 and in future modules 5, 6, 7, 8, and 9 will consist of a 9-inch thick gravel blanket drain sloping at 2 percent to a central perforated header pipe sloped at 1 percent to the LCRS sump. The central header collection pipes have been and will continue to be placed within the 9-inch thick gravel blanket drain. The pipes in existing Modules 13 and 14 are 4 and 6-in. diameter, HDPE SDR 17 with slotted perforations. The pipes for the future modules will be 6-in. diameter, HDPE SDR 11 with perforations. The LCRS gravel, or an equivalent drainage media, will provide a minimum hydraulic conductivity of 1 cm/sec. The LCRS gravel will be overlain by a filter geotextile.
58. Each future module will have a leachate sump. Each leachate sump will be accessed through two, 18-in. diameter, HDPE SDR 11 slope riser pipes. One of the riser pipes will house a dedicated leachate pump. The second riser will provide redundant access and a second pumping point if rapid withdrawal of leachate is ever needed. The existing Modules 13 and 14 have a single, 12-in. diameter, HDPE SDR 17 side slope riser pipe. A separate 2-in. diameter HDPE SDR 11 pipe will be constructed in each LCRS sump to provide access for annual LCRS testing and periodic cleanout, if necessary. Current leachate generation from Modules 11, 12, 13 and 14 is on the order of 44,500 gallons per month.
59. Using the Hydrologic Evaluation of Landfill Performance (HELP) Model, the Discharger calculated peak daily head on the liner for Module 16 was 3.0 inches. The peak daily leachate production was calculated to be 3,717 gallons per acre per day (gpad). This value was doubled and used to design the LCRS.
60. Leachate extracted from the sumps is conveyed through a series of pipes to the City of Roseville sewer main via a manhole located north of the flare station. A new

leachate discharge line will be constructed for the western modules as they are developed.

61. Each of the LCRS sumps in the future modules will be designed with a leak detection monitoring sump below the primary base liner system. The leak detection monitoring sump will be excavated into the subgrade below the LCRS sump at the lowest point of the module floor. Access to the leak detection sump will be via a slope riser pipe. The leak detection side slope riser pipe will be 6-in. diameter, HDPE SDR 11 pipe. The liquid (if any) in the leak detection monitoring sump will be manually monitored on a monthly basis. Any liquids in the leak detection monitoring sump will be removed with a pump via the slope riser pipe.
62. The leak detection sump will consist of a 24-inch thick zone of gravel providing a minimum hydraulic conductivity of 1 cm/sec. The leak detection sump will be in between the primary and secondary composite liners of the double composite liner system.
63. The existing landfill gas extraction system consists of 52 operating interior vertical extraction wells, 2 interior horizontal extraction wells, 70 perimeter migration control extraction wells, PVC laterals, subheaders and HDPE header pipes, two pneumatic condensate sumps, and a flare station. The flare station consists of three centrifugal blowers, a compressor and an enclosed ground flare currently configured for 2,500 standard cubic feet per minutes (SCFM) of landfill gas. The current flare is permitted for 2,500 SCFM of landfill gas. In addition to the controls mentioned, there is also a power plant on-site that uses the landfill gas.
64. The landfill gas system will expand as the landfill expands. Additional vertical extraction wells, horizontal extraction wells, and support structures and facilities will be added as landfill expansion continues. The flare will be modified to accept the currently permitted 2,500 SCFM of landfill gas flow when the demands of the system exceed current flow capabilities. Calculations show that landfill gas generation will reach a maximum of approximately 4,500 SCFM.
65. The landfill gas condensate is tested at least annually. If testing indicates the condensate should be classified as hazardous waste, then the Discharger will contract with a licensed hazardous waste hauler to dispose of the condensate. Otherwise, the condensate is disposed of within the City of Roseville's sanitary sewer system. The amount of condensate disposed ranges from 10 to 800 gallons per day (gpd), with a mean of 200 gpd.

### **OPERATION OF THE FACILITY**

66. A new module is constructed and ready for waste placement at the time the current module reaches planned waste grades. As one module is being filled with waste, the adjacent module is being excavated for use as daily cover. Once the module is excavated, the base liner system is constructed near the time the current module receiving waste is near fill plan grades. The landfill sequencing plan is described as follows: fill Modules 12, 13, 14 and 15; excavate and construct Module 16; fill Module 16 to interim grades; excavate and construct Module 5; fill Module 5 to interim grades; excavate and construct Module 6; fill Modules 5, 6, 12, 13, 14, and 15; excavate and construct Module 7; fill Module 7 to interim grades; excavate and construct Module 8; fill Module 8 to interim grades; excavate and construct Module 9; and fill Module 9 and remaining modules to final permitted heights.
67. Each ten to twenty acre module is excavated below grade. Refuse is placed in lifts of ten feet and is spread in two foot thick layers on a 3:1 maximum slope working face 70 to 100 feet wide. The top of each lift is covered daily with a minimum six-inch soil layer or other approved alternative cover. One foot of soil is placed on any area that will not receive wastes for 180 days. Surface grading is maintained at all times to insure lateral runoff and prevent ponding over areas in which waste is buried.
68. Storm water runoff that has contacted landfill wastes and leachate collected by the LCRS are discharged to the City of Roseville sewer system.
69. The Discharger's current plans indicate that the Class II and Class III landfills will reach capacity by the year 2036. The gross total airspace associated with the revised landfill grades is estimated as 40 million cubic yards. This is the total airspace, including the base liner and final cover systems' volumes.

### **CLOSURE, POST-CLOSURE MAINTENANCE, AND FINANCIAL ASSURANCE**

70. The RWD/JTD submitted by the Discharger contains a preliminary closure and post-closure maintenance plan (PCPCMP) for the landfill. The PCPCMP includes information required by Title 27 CCR Section 21769(b), and includes a lump sum estimate of the cost of carrying out all actions necessary to close each Unit, to prepare detailed design specifications, to develop the final closure and post-closure maintenance plan, and to carry out the first thirty years of post-closure maintenance. The total amount of the closure cost estimate is \$16,846,912, and the amount of the post-closure maintenance cost estimate is \$7,374,807. The Regional Board hereby approves these cost estimates. This Order requires that the Discharger maintain financial assurance with the CIWMB in at least the amount of these cost estimates.

71. The Discharger has also submitted a cost estimate for corrective action of all known or reasonably foreseeable releases as required by Title 27 Section 22221. The amount of the approved cost estimate is \$638,181. This Order requires that the Discharger maintain financial assurance with the CIWMB in at least the amount of this cost estimate.
72. Title 27 CCR Sections 21780(c)(3) and (d)(1) [sections promulgated by the CIWMB] require the Discharger to submit the final closure and post-closure maintenance plan, or for the closure of discrete units, the partial final closure and post-closure maintenance plan, at least two years prior to the anticipated date of closure. This Order requires that the Discharger obtain WDRs from the Regional Board with closure and post-closure maintenance requirements prior to final closure of the facility.

#### **CEQA AND OTHER CONSIDERATIONS**

73. In January 2000, a supplemental draft EIR was prepared to evaluate several proposed operational changes at the existing facility including increasing the permitted height of the landfill, increasing the excavation depth, extending the operational hours, and adding lighting to accommodate evening operations. A supplemental final Environmental Impact Report (SEIR) was prepared in July 2000 to address public comments and feedback from the previous Draft SEIR. The Western Placer Waste Management Authority Board of Directors certified the SEIR on 10 August 2000.
74. On 9 October 1991, the United States Environmental Protection Agency (EPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal MSW regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate landfills at which MSW is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline," 9 October 1993.
75. 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, Parts 257 and 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.

76. 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."

77. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. \_\_\_\_" 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**

78. 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 facility for the discharges of waste to land stated herein.

79. 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.

80. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

81. 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/water\\_laws/index.html](http://www.waterboards.ca.gov/water_laws/index.html) and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. R5-2002-0218 is rescinded, and that Western Placer 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' is prohibited. The discharge of designated wastes to the Class III landfill 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.
4. The discharge to the landfill units of solid waste containing free liquid or moisture in excess of the waste's moisture holding capacity, is prohibited.
5. The discharge to landfill units of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids), except dewatered sewage or water treatment sludge as provided in Section 20220(c) of Title 27, is prohibited.
6. The disposal of containerized liquids at this facility is prohibited.
7. The discharge of wastes which have the potential to cause corrosion or decay, or otherwise reduce or impair the integrity of containment structures or which, if commingled with other wastes in the unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
  - a. require a higher level of containment than provided by the unit,
  - b. are restricted hazardous wastes, or
  - c. impair the integrity of containment structures, is prohibited.
8. The discharge of waste constituents to the unsaturated zone or to groundwater is prohibited.



9. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

## **B. DISCHARGE SPECIFICATIONS**

1. Wastes shall only be discharged into waste management units specifically designed for their containment and/or treatment, as described in this Order.
2. Municipal solid waste shall be discharged to either (1) that portion of a module which received wastes prior to October 1993 (i.e., that active portion of the module which is within the boundaries of the Existing Footprint), or (2) to an area equipped with a containment system which meets the additional requirements for both liners and leachate collection systems specified below.
3. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order. If the Discharger is unable to remove and relocate the waste, the Discharger shall submit a report to the Regional Water Board explaining how the discharge occurred, why the waste cannot be removed, and any updates to the waste acceptance program necessary to prevent re-occurrence.
4. Dewatered sewage or water treatment sludge may be accepted for disposal at the Class III landfill if the sludge contains at least 20 percent solids (primary sludge) or 15 percent solids (secondary sludge), is mixed with refuse at a minimum solids-to-liquid ratio of 5:1 by weight, and does not exceed the initial moisture holding capacity of the solid waste. Any waste that contains liquid in excess of the moisture holding capacity of the waste in the Class II landfill or which contains liquid in excess of the moisture holding capacity as a result of waste management operations, compaction or settlement shall only be discharged to another Unit with containment features equivalent to a surface impoundment. Dewatered sewage or water treatment sludge may be used as alternative daily cover if it is blended with soil or other approved material, at a quarterly rate of 25% sludge to 75% soil or approved material.
5. A minimum separation of 10 feet shall be maintained between wastes or leachate and the highest anticipated elevation of underlying groundwater including the capillary fringe.
6. Prior to the discharge of waste to a landfill, all wells within 500 feet of the unit shall have sanitary seals which meet the requirements of the Placer County Division of Environmental Health or shall be properly abandoned. A record of the

sealing and/or abandonment of such wells shall be sent to the Regional Water Board and to the State Department of Water Resources.

7. Leachate generation by a landfill module LCRS shall not exceed 85% of the design capacity of the sump pumps. If leachate generation exceeds this value or if liquid is detected in the underlying leak detection layer then the Discharger shall immediately cease the discharge of sludges and other high-moisture wastes to the landfill module and shall notify the Regional Water Board in writing within seven days. Notification shall include a time table for remedial or corrective action necessary to reduce leachate production.
8. The Discharger shall conduct the periodic load checking program as described in the August 2002 Load Checking Program report. The load checking program shall ensure that 'hazardous wastes' and 'designated wastes' are not discharged to any Class III Landfill at the facility and that 'hazardous wastes' are not discharged to any Class II Landfill at the facility. The program shall also ensure that wastes exceeding moisture limitations are not discharged to Landfill units.

### **C. FACILITY SPECIFICATIONS**

1. New landfill units and lateral expansions shall not be within jurisdictional waters of the United States (wetlands) unless the Discharger has successfully completed, and the Regional Water Board has approved, all demonstrations required for such discharge under 40 CFR 258.12(a).
2. 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, which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
3. Intermediate cover shall be applied to areas of the landfill where filling is not anticipated within 180 days. Intermediate cover shall consist of one foot of compacted soil with a permeability less than  $1 \times 10^{-5}$  cm/sec or an approved engineered alternative. On landfill modules that are expanding in height over single composite liners (Modules 12, 13, and 14) the operator shall place an additional 12 inches of intermediate cover over areas where filling has not occurred, or Discharger anticipates will not occur, for a period of two years. This requirement shall not be imposed on the eastern slopes of Modules 12, 13, and 14 if gas control, leachate or stormwater collection appurtenances or slope stability would be adversely impacted. The active disposal area shall be confined to the smallest area practical based on the anticipated quantity of waste discharge and other waste management facility operations.

4. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, and construction.
5. Landfill leachate shall be conveyed to an offsite wastewater treatment plant for disposal.
6. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
7. 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, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
8. Gas control measures shall be implemented for a Class II landfill module upon the detection of methane and gas-phase concentrations of volatile organic compounds (VOCs) in the leak detection layer. The gas control measures shall be sufficient to prevent the gas-phase migration of VOCs from the Class II modules.
9. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 1000-year, 24-hour precipitation conditions for Class II WMUs and 100-year, 24-hour precipitation conditions for Class III WMUs.
10. 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 and to prevent surface drainage from contacting or percolating through wastes.
11. The Class II Landfill shall be designed to withstand the maximum credible earthquake without damage to the foundation, or to the structures which control leachate, surface drainage, erosion, or gas.
12. 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. GENERAL CONSTRUCTION SPECIFICATIONS**

1. The Discharger shall submit for review and approval **prior to** construction, design plans and specifications for new Units and modules of existing Units, that include the following:
  - a. A Construction Quality Assurance Plan meeting the requirements of §20324 of Title 27; and
  - b. A geotechnical evaluation of the area soils, evaluating their use as the base layer; and
  - c. An unsaturated zone monitoring system, which is demonstrated to remain effective throughout the active life, closure, and post-closure maintenance periods of the Unit, which shall be installed beneath the composite liner system in accordance with §20415(d) of Title 27.
2. 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 Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Regional Water Board.
3. If the Discharger proposes to construct a liner system in which a GCL is placed on top of a subgrade, the subgrade for the bottom and the side slopes of the Unit shall be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.
4. Construction shall proceed only after all applicable construction quality assurance plans have been approved.
5. Following completion of construction of a Unit or portion of a Unit, and prior to discharge onto the newly constructed liner system, the final documentation required in §20324(d)(1)(C) of Title 27 shall be submitted 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.

6. 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.
7. LCRSs shall be designed, constructed, and maintained to collect at least twice the anticipated daily volume of leachate generated by the module and to prevent the buildup of hydraulic head on the underlying liner at any time. The depth of fluid in any LCRS sump shall be kept at or below the minimum needed to ensure safe pump operation, but shall be no greater than the depth of the LCRS sump plus 3 inches in new expansion modules and sump depth plus 12 inches in modules 11, 12, 13, 14, and 15.
8. If monitoring of any Module reveals substantial or progressive increases of leachate generation above the design leachate flow volume (see Finding No. 59 for Module 16) by the Unit or portion of the Unit, such that the depth of fluid on any portion of the LCRS (excluding the feeder channels and leachate removal pump sump) exceeds the values listed in General Construction Specifications D.7, the Discharger shall immediately notify the Regional Water Board and provide a written notification within seven days. The notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.

#### **E. CLASS II LANDFILL CONSTRUCTION SPECIFICATIONS**

1. The engineered alternative for Module 16, and all future modules (5, 6, 7, 8, and 9) is a double-composite base liner and a single composite side-slope liner system unless a site-specific demonstration is conducted and indicates that another design complies with the Title 27 performance standards. The double-composite liner system for base areas of the landfill will consist of the following components, from bottom to top: prepared subgrade; geosynthetic clay liner (GCL) with manufacturer guaranteed maximum hydraulic conductivity of  $5 \times 10^{-9}$  cm/sec; secondary 60-mil thick high density polyethylene (HDPE) double-sided textured geomembrane; geonet leak detection layer with heat bonded non woven geotextile on both sides; a GCL providing a hydraulic conductivity of no greater than  $5 \times 10^{-9}$  cm/sec; primary 60-mil thick HDPE, single-sided textured geomembrane; 9-inch thick leachate collection and removal system (LCRS) gravel providing a minimum hydraulic conductivity of 1 cm/sec; geotextile filter; and 15-inch thick operations layer.

2. The containment system for side slope areas of Module 16, and all future modules (5, 6, 7, 8, and 9) will consist of the following components, from bottom to top: prepared subgrade; GCL with manufacturer guaranteed maximum hydraulic conductivity of  $5 \times 10^{-9}$  cm/sec; 60-mil HDPE geomembrane (single sided textured, textured side placed down); and 24-inch thick operations layer.
3. The containment system for side slopes of the Class II landfill where it abuts the Class III landfill (transition area) shall vary as a function of the type of the existing Class III landfill liner system (see Attachment E which is attached hereto and incorporated by reference). Each module-specific continuation shall be analyzed during construction level design of each module. However, a minimum of a composite liner system shall be constructed at the interface between the Class II landfill and Modules 2, 10 and 11 which do not have composite liners. Class III Modules 12 and 13 were constructed with composite liners and have an LCRS system. Therefore, a minimum of a geomembrane may be employed to separate Class II waste from Class III waste in Modules 12 and 13.
4. At closure, each landfill unit shall receive a final cover which is designed and constructed to function with minimum maintenance and consist, at a minimum, of the following from top to bottom: A 1-foot thick vegetative layer; a drainage layer consisting of a geocomposite drainage net; a geomembrane primary barrier layer; a geosynthetic-clay liner layer providing a hydraulic conductivity of not more than  $5(10)^{-9}$  cm/sec; and a 2-foot thick foundation layer. The permitted final cover elevations shown on Attachment F (which is attached hereto and incorporated by reference) shall not be exceeded.
5. Closed landfill modules shall be graded to at least a three-percent (3%) grade and maintained to prevent ponding.

## **F. DETECTION MONITORING SPECIFICATIONS**

1. The Discharger shall submit for review and approval a groundwater detection monitoring program demonstrating compliance with Title 27 for any Unit expansion.
2. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. R5-2007-\_\_\_\_\_. A detection monitoring program for a new Unit shall be installed, operational, and one year of monitoring data collected prior to the discharge of wastes [27 CCR §20415(e)(6)].

3. 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, and a minimum 48 hour notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.
4. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2007-\_\_\_\_\_, and the Standard Provisions and Reporting Requirements, dated April 2000.
5. The Water Quality Protection Standard for organic 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., US-EPA methods 8260 and 8270). The presence of 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.
6. 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. R5-2007-\_\_\_\_\_.
7. 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. \_\_\_\_\_ and §20415(e) of Title 27.
8. The Discharger shall maintain the existing 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.
9. 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, 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.

10. 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.
11. 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.
12. **"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.
13. **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.
14. 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.

15. 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.
16. 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.
17. 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 §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 the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to §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".
18. 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.

19. The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with §20415(e)(8)(E) of Title 27, 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 (i.e., 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.
20. 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. 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 contains 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 contains 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 20.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Regional 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 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 Finding 22, 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.

21. 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.

#### **G. CORRECTIVE ACTION MONITORING**

1. The Corrective Action Monitoring Program shall be used to assess the nature and extent of the release from the landfill and to evaluate the effectiveness of the corrective action program and the landfill cover.
2. In accordance with the Corrective Action Monitoring Program, the Discharger shall collect and analyze all data necessary to assess the effectiveness of the Corrective Action in reducing the impacts of the release on groundwater quality. A sufficient number of monitoring wells shall be installed to delineate the release.
3. The Discharger shall comply with the monitoring provisions for the Corrective Action Program (CAP) as described in Section 20430(d) of Title 27. The program shall include the detection monitoring program as well as an annual report evaluating the ground water and unsaturated zone data of the past year(s) in an effort to demonstrate the effectiveness of the CAP.

#### **H. PROVISIONS**

1. The Discharger shall maintain a copy of this Order at the facility 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. R5-2007-\_\_\_\_\_, 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 (27 CCR §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 appropriate Regional 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 maintain legible records of the volume and type of waste discharged at the landfill and the manner and location of discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Regional Water Board and of the State Water Resources Control Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Water Board.
8. 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.
9. The Discharger shall provide proof to the Regional Water Board **within sixty days after completing final closure** that the deed to the landfill facility property, or some other instrument that is normally examined during a title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that:
  - a. the parcel has been used as a municipal solid waste landfill;
  - b. and use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in WDRs for the landfill; and
  - c. in the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a

release, then the responsibility for carrying out such work falls to the property owner.

10. 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 active life, closure, and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
11. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor groundwater, leachate from the landfill unit, the vadose zone, and surface waters per MRP No. R5-2007-\_\_\_\_ throughout the post-closure maintenance period.
12. The post-closure maintenance period shall continue until the Regional Water Board determines that remaining wastes in the landfill will not threaten water quality. Other agencies may need to approve other aspects of the post-closure maintenance period.
13. 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.
14. 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 H.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.
15. The Discharger shall establish cost estimates for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill, and submit these estimates for review and approval.
16. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in the amount of the approved cost

estimate. The Discharger shall submit the approved cost estimate and proposed financial assurance mechanism meeting the requirements of Chapter 6, Title 27 to the Financial Assurances Section of the California Integrated Waste Management Board (CIWMB). If the CIWMB determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism for at least the amount of the approved cost estimate.

17. The Discharger shall update the preliminary closure and post-closure maintenance plan (PCPCMP) any time there is a change that will increase the amount of the closure and post-closure maintenance cost estimate. The updated PCPCMP shall be submitted to the Regional Board, the Local Enforcement Agency, and the CIWMB. The PCPCMP shall meet the requirements of Title 27 CCR Section 21769(b), and include a lump sum estimate of the cost of carrying out all actions necessary to close each Unit, to prepare detailed design specifications, to develop the final closure and post-closure maintenance plan, and to carry out the first thirty years of post-closure maintenance. A final (or partial final) closure and post-closure maintenance plan shall be submitted prior to closure and closure shall not be conducted in the absence of closure WDRs.
18. The Discharger shall obtain and maintain assurances of financial responsibility for closure and post-closure maintenance costs in the amount of the cost estimates in the approved preliminary or final closure and post-closure maintenance plan, as applicable. The Discharger shall submit a proposed financial assurance mechanism for closure and post-closure maintenance meeting the requirements of Chapter 6, Title 27 to the Financial Assurances Section of the CIWMB. If the CIWMB determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism for at least the amount of the approved cost estimate.
19. 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>	
(1) Submit monitoring system and program	<b>4 months prior to start of construction of any landfill expansion</b>

- |  |  |
|--|--|
| (2) Submit design plans, specifications, construction schedule, and construction quality assurance plan (General Construction Specification D.1 and D.4) | <b>2 months prior to start of construction of liner system</b>   |
| (3) Submit any modifications to design plans, specifications, construction schedule, and construction quality assurance plan                             | <b>2 weeks prior to beginning construction of liner system</b>   |
| (4) Submit as-built plans, construction quality assurance, and certification report  | <b>2 weeks prior to discharge of wastes (for closure construction, within 2 months after completion)</b> |

#### **B. Construction Report**

Submit a construction report upon completion demonstrating construction was in accordance with approved construction plans for review and approval (see Construction Specification D.5)

**Prior to discharge**

#### **C. Annual Testing of Leachate Collection and Removal System**

Present results of annual LCRS testing for the landfill

**In Annual Monitoring Summary Report**

#### **D. Corrective Action**

Close Modules 12 and 13 as one project.

**Within 18 months of final receipt of waste**

20. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports



specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and/or stamp of the seal.

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 \_\_\_\_\_.

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

JSH: 4/12/07