

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0023

WASTE DISCHARGE REQUIREMENTS  
FOR  
CITY OF AVENAL  
AND  
MADERA DISPOSAL SYSTEMS, INC.  
FOR  
CONSTRUCTION AND OPERATION  
CITY OF AVENAL MUNICIPAL SOLID WASTE LANDFILL  
KINGS COUNTY

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

1. The City of Avenal owns a municipal solid waste landfill northeast of the intersection of State Road 269 and Hydril Road within the incorporated limits of the City of Avenal in Section 15, T22S, R17E, MDB&M, as shown in Attachment A, which is incorporated herein and made a part of this Order. The waste management facility is operated by Madera Disposal Systems, Inc., a California corporation, and a subsidiary of Waste Connections, Inc. The City of Avenal and Madera Disposal Systems, Inc., are hereafter jointly referred to as Discharger.
2. The 173-acre facility contains three existing unlined waste management unit(s) (Units) covering 44.5 acres, as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Number (APN) 38-26-23.
3. The Discharger proposes to construct an expansion Unit for the discharge of municipal solid waste to an area east, west, and south of the existing Units. The proposed expansion Unit would increase the landfill footprint to approximately 123 acres in area and increase the vertical height 210 feet.
4. On 27 February 1976, the Regional Board issued Order No. 76-023, in which the facility was classified as a Class II-2 waste disposal site for the discharge of Group II and Group III wastes in accordance with the regulations in effect when the order was issued. On 16 March 2001, the Regional Board issued Order No. 5-01-060, in which the facility was reclassified as a Class III landfill that accepts municipal solid waste in accordance with Title 27, California Code of Regulations (CCR), Section 20005, et seq. (Title 27). This Order classifies the proposed expansion Unit as a Class III landfill that accepts municipal solid waste in accordance with Title 27.

### SITE DESCRIPTION

5. The waste management facility is on the western slope of the northwest trending Kettleman North Dome and is constructed within the consolidated to semi-consolidated materials of the Pliocene-Pleistocene Tulare Formation. The Tulare Formation consists of interbedded, claystones, mudstones, sandstones, gravels, and gypsum lenses, of which the lower permeability claystones and mudstones are predominant. Underlying the Tulare Formation is the upper Pliocene San Joaquin Formation that consists of interbedded silt, clay, sandstone, and conglomerates. The beds of the Tulare Formation and San Joaquin Formation dip to the southwest at approximately 30 degrees.
6. The measured hydraulic conductivity of the geologic materials underlying the Units ranges between  $2.28 \times 10^{-5}$  and  $4.57 \times 10^{-7}$  cm/sec.
7. The closest Holocene fault appears to be the Great Valley blind thrust fault that underlies the Kettleman Hills at a depth of approximately four to six miles. Recorded magnitudes of seismic events along the Great Valley blind thrust fault range between 6.5 (near Coalinga) and 6.1 (Kettleman Hills) on the Richter scale. The average ground acceleration for the site is calculated to be 0.43 g.
8. Land uses within 1,000 feet of the facility are residential, agricultural, nature preserve/passive recreational, and general.
9. The facility receives an average of 5.59 inches of precipitation per year as measured at the Avenal Walden Station. The mean pan evaporation is 111 inches per year as measured at the Avenal 9 SSE Station.
10. The 100-year, 24-hour precipitation event is estimated to be 2.58 inches, based on precipitation data from the Coalinga 1SE Station.
11. The waste management 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 065073 0010A.
12. There is one municipal supply well, two agricultural supply wells, and four cathodic protection wells within one mile of the site. No surface springs or other sources of groundwater supply have been observed within one mile of the landfill. No domestic wells exist within 1,000 feet of the existing Units and the proposed expansion Unit.

### WASTE CLASSIFICATION

13. The Discharger discharges municipal solid wastes and nonhazardous solid wastes, as defined in Title 27 CCR Section 20164.

### SURFACE AND GROUND WATER CONDITIONS

14. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
15. Surface drainage is southwesterly toward the Kettleman Plain in the Kettleman Hydrologic Area (558.50) of the Tulare Lake Basin. There are no perennial streams in the Kettleman plain topographically downgradient of the landfill.
16. The landfill is on the western slope of the Kettleman North Dome. The designated beneficial uses of Valley Floor Waters, as specified in the Basin Plan, are agricultural supply, industrial service and process supply, water contact and non-contact water recreation, warm fresh water habitat, preservation of rare, threatened and endangered species, and groundwater recharge.
17. The first encountered groundwater is about 356 to 420 feet below the native ground surface (bgs). Groundwater elevations range from 488 feet MSL to 562 feet MSL. The groundwater occurs in multiple zones and is unconfined to semi-confined, becoming confined down-dip (toward the southwest). The depth to groundwater fluctuates seasonally as much as two feet.
18. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 1,550 and 10,000 micromhos/cm, with total dissolved solids (TDS) ranging between 1,570 and 6,900 mg/l. Groundwater has been age-dated using tritium and carbon-14 methods and shown to be older than 51 years of age and possibly as old as 5,000 to 6,000 years of age.
19. Groundwater flow at the site is minimal due to the low hydraulic conductivity of the bedding, very low infiltration rates, and low hydraulic gradients. The age-dating of groundwater tends to confirm a low-flow system with no recent infiltration of precipitation. Groundwater flow is believed to be along the bedding planes in the direction of strike (south 50 degrees east). Monitoring well pairs in different beds indicate flow to the southeast and possibly the northwest; however, the direction of flow is believed to be southeasterly. Secondary groundwater flow may also be to the southwest, toward the Kettleman Plain, if secondary porosity features exist at depth, which cross the bedding planes. These features (fracture zones and solution zones) have not been observed in

drilling cores. The average groundwater gradient within specific beds is approximately 0.009 feet per foot. The average groundwater velocity is 0.02 feet per year.

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

### **GROUNDWATER MONITORING**

21. Nine groundwater monitoring wells have been installed at the landfill for detection monitoring including MW-1, MW-2, MW-3, MW-4, MW-5, MW-6S and 6D, MW-7, and MW-8 (see Attachment B). Monitoring well MW-2 is dry and monitoring wells MW-1 and MW-6S are nearly dry. Monitoring well MW-5 is 1,000 feet from the Point of Compliance, and, therefore, inappropriate for detection monitoring. The Discharger proposes to abandon monitoring wells MW-2, MW-5, and MW-6S and only use monitoring well MW-1 for groundwater elevation monitoring. The remaining five monitoring wells are located at the Point of Compliance and will be used for downgradient groundwater monitoring. Because groundwater flow at the site is minimal and occurs in multiple zones (see Finding Nos. 17 and 19), no specific well is designated for background water quality monitoring. The Discharger proposes to evaluate groundwater quality at the Point of Compliance wells using intra-well statistics. Background water quality will be determined by the historic dataset for each specific Point of Compliance well.

For the proposed expansion Unit, monitoring wells MW-6D and MW-7 are appropriately located to detect bedding-strike flow to the southeast from the proposed expansion Unit should it occur, and monitoring wells MW-3 and MW-4 are appropriately located to detect down-dip flow from the proposed expansion Unit should it occur. Therefore, no new monitoring wells are proposed for the proposed expansion Unit unless any of the existing wells have to be destroyed to accommodate the footprint of the proposed expansion Unit. This should not be necessary based on the proposed footprint for the proposed expansion Unit. Due to the significant depth to ground water, low permeability bedding, and low infiltration potential, the primary point of compliance for monitoring the proposed expansion Unit will be a pan lysimeter to be installed beneath the low points (below leachate collection sumps and header lines) in the proposed expansion Unit.

The current vadose zone detection monitoring program consists of ten suction lysimeters (LY-1 through LY-10) placed near the boundaries of the existing Units and under the footprint of the proposed expansion Unit. Each lysimeter contains a gypsum block moisture detector and a vacuum lysimeter. No liquids have been recovered from any of the vacuum lysimeters due to the site's low soil moisture content (less than eight percent). The existing lysimeters under the footprint of the proposed expansion Unit will be abandoned as the expansion Unit is constructed and will be replaced with a pan lysimeter. The pan lysimeter is proposed to be constructed of a 60-mil thick synthetic flexible membrane of high-density

polyethylene (HDPE) and a geocomposite drainage layer, and will be constructed below the secondary LCRS beneath the leachate collection pipe trenches and sumps.

Existing landfill gas monitoring probes (P-1 through P-7) are located along the southwestern perimeter of the landfill. The existing landfill gas monitoring probes are monitored quarterly for methane and volatile organic compounds. The Discharger proposes to expand the landfill gas monitoring probes system as the proposed expansion Unit is constructed.

22. The Discharger's detection monitoring program for groundwater at the proposed expansion Unit satisfies the requirements contained in Title 27.
23. 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. Since volatile organic compounds 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.
24. Title 27 CCR Sections 20415(e)(8) 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 CCR Section 20415(b)(1)(B)2.-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
25. The Regional Board may specify a non-statistical data analysis method pursuant to Title 27 CCR Section 20080(a)(1). Section 13360(a)(1) of the California Water Code allows the Regional 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.
26. 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.
27. 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.

28. A release from the existing Units has not been detected in groundwater.

### **CONSTRUCTION AND ENGINEERED ALTERNATIVE**

29. 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).
30. 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.
31. Resolution No. 93-62 also allows the Regional 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.
32. Title 27 CCR Section 20080(b) allows the Regional Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Title 27 Section 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 Title 27 CCR Section 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 Title 27 CCR Section 20080(b)(2).
33. Section 13360(a)(1) of the California Water Code allows the Regional 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.
34. The Discharger proposes a Subtitle D prescriptive standard base liner system (composite liner system) and either a Subtitle D prescriptive liner system or engineered alternative

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

35. The proposed base liner system of the expansion Unit consists of, in ascending order: 1) a six-inch thick compacted soil subgrade; 2) a two-foot thick compacted clay layer (CCL) compacted to exhibit a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec; 3) a 60-mil thick HDPE geomembrane; 4) a minimum 12-inch thick gravel drainage layer (leachate collection and removal system, LCRS); 5) a geotextile filter layer; and 6) a one-foot thick soil operations layer. The leachate collection trenches will be underlain with a secondary 60-mil thick HDPE geomembrane and a secondary drainage layer in intimate contact with the compacted clay layer.
36. Side-slope liners are proposed to be constructed of either: 1) the same materials and in the same sequence and manner as the bottom liner system, except that the 12-inch thick LCRS gravel layer will be replaced with a geocomposite drainage layer to convey leachate to leachate collection trenches and LCRS sumps, the soil operations layer will be 18 inches thick; or 2) a GCL and a 60-mil thick HDPE geomembrane. The side-slope subgrade will be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a surface that is smooth and free from rocks, sticks, and other debris that could damage or otherwise limit the performance of the geosynthetic clay layer and/or geomembrane, and certified in accordance with this Order and the approved CQA Plan.
37. The Discharger adequately demonstrated that the construction of a Subtitle D prescriptive standard liner system on the side-slopes of the proposed expansion Unit would be unreasonable and unnecessarily burdensome when compared to the proposed engineered alternative design. There are limited clay sources on-site or nearby. If clay has to be imported from an off-site location, or if on-site soils have to be mixed with bentonite, the construction of a prescriptive standard compacted clay liner on the side-slopes would cost substantially more than the alternative design. Additionally, the costs to process the on-site materials and then construct a compacted clay liner on steep side-slopes would increase the costs beyond the amount needed to import clay or mix on-site soils with bentonite. The Discharger has also demonstrated that the proposed engineered alternative for the side-slope liner system is consistent with the performance goals of the prescriptive standard and affords at least equivalent protection against water quality impairment.
38. The proposed LCRS at the base of the proposed expansion Unit will consist of a 12-inch thick gravel layer installed above the 60-mil HDPE geomembrane. The base slopes are proposed to be constructed with grades of 2.2 percent to drain leachate to the leachate

collection trenches. The leachate collection trenches, containing perforated collection pipes surrounded by gravel, are proposed to drain leachate to LCRS sumps at the southern boundary of the proposed expansion Unit. The geocomposite drainage layer, proposed to be constructed on the side-slopes, will drain leachate to the LCRS in the base liner system. A secondary LCRS sump, consisting of a 60-mil thick HDPE geomembrane overlain by perforated collection pipes surrounded with gravel, is proposed to be constructed immediately beneath the CCL and beneath the primary LCRS sumps to intercept any leachate that may penetrate the composite liner system. Riser pipes are proposed to be installed within the primary and secondary LCRS sumps to remove leachate. The design leachate flow volume for the proposed expansion Unit is approximately 852 gallons per day.

### **LINER PERFORMANCE DEMONSTRATION**

39. On 15 September 2000 the Regional 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 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.”

In a letter dated 17 April 2001, the Executive Officer notified Owners and Operators of Solid Waste Landfills that “the Regional 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.”

40. In accordance with the Executive Officer’s letter of 17 April 2001, the Discharger submitted a liner system design performance report, dated 18 June 2003, to demonstrate that the proposed liner system design would meet the performance standard contained in Title 27 CCR Section 20310(c) for a Class III landfill. The demonstration utilized leakage rates provided in the U.S. EPA, 2002 report entitled: *Assessment and Recommendations for Improving Performance of Waste Containment Systems*. Based on the efficiency rates provided in the U.S. EPA report, an efficiency rate of 99.96 percent was initially assigned to the proposed geomembrane/CCL liner system. With the implementation of an electrical leak location survey and a secondary LCRS, the efficiency of the proposed liner system was assigned an increased value of 99.999 percent. From the efficiency study, a base liner system leakage potential of  $2.1 \times 10^{-4}$  gallons per acre per day (gpac) was derived. Based on the aforementioned leakage potential, the liner demonstration design performance report purported that leachate leaked from the base liner system will be absorbed within the first several feet of the naturally-occurring geologic materials beneath the liner system. A side-



slope liner system leakage potential was also derived to range between  $2 \times 10^{-4}$  gpad and  $2 \times 10^{-5}$  gpad. The liner demonstration design performance report purported that the aforementioned side-slope leakage potential were negligible.

41. To estimate the concentrations of constituents of concern in groundwater at the landfill's Point of Compliance, a dispersion analysis of the derived leakage rate was conducted and determined that concentrations of constituents of concern would not exceed background levels at the Point of Compliance if a release occurred.
42. The secondary LCRS geocomposite includes a geotextile filter separation layer to prevent clogging from the compacted clay liner's fine-grained materials. The Discharger noted that the clogging potential would be minimal due to the extremely low-flow volumes and seepage rates associated with a liner leak through a clay liner. To prevent damage to the secondary LCRS geosynthetics, the compacted clay liner will consist of a two and one-half foot soil layer in which the upper two feet will comprise the prescriptive compacted clay layer. The first lift will be placed 12 inches thick to avoid damage to the underlying geosynthetics, and the lower six inches therefore, becomes a protective layer.
43. The secondary LCRS will be constructed with a sump to collect leachate and the sump will be accessed by a riser pipe for leachate removal and sampling.
44. A geotextile cushion may or may not be required depending on the diameter and angularity of the gravel clasts and pressures acting on the liner due to refuse loading. The Discharger will evaluate the criteria that would trigger the use of a geotextile cushion (e.g., gravel clasts greater than three-eighths inches in diameter or excessive angularity), and if a geotextile cushion is required, its design will be included in the final design for each cell of the proposed expansion Unit.
45. The performance demonstration includes additional piping in the primary LCRS that can be connected to a landfill gas extraction system at the expansion Unit. The secondary LCRS and pan lysimeter can also be monitored for landfill gas to assess whether landfill gas controls are adequately controlling landfill gas migration.
46. To ensure proper installation of the proposed landfill liner system, the Discharger will perform an electronic leak detection survey (ELDS) over the entire base of the liner system subsequent to placement of the operations layer on the liner and LCRS to detect and repair any liner defects prior to placing waste. In addition to performing the ELDS, the Discharger will place select waste over the operations layer to reduce the potential damage to the base liner during initial refuse filling operations.
47. Based on the results of the dispersion analysis of the derived leakage rate that determined that concentrations of constituents of concern would not exceed background levels at the

Point of Compliance if a release occurred, and the design and construction features of the proposed composite liner system, the Regional Board finds that the Discharger has demonstrated that the proposed composite liner system for the proposed expansion Unit meets the performance standard contained in Title 27. The Discharger has also demonstrated that the proposed alternate side-slope liner system meets the approval criteria set forth in Title 27 CCR Section 20080(b) for engineered alternative designs. The Discharger therefore proposes a liner system which will be designed, constructed, and operated in accordance with the criteria set forth in Title 27 and the provisions in State Water Resources Control Board Resolution No. 93-62 for municipal solid waste.

### **CEQA AND OTHER CONSIDERATIONS**

48. The action to revise the waste discharge requirements for the exiting Units at the facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14 CCR Section 15301, et seq.
49. The City of Avenal certified a final environmental impact report for the facility on 13 October 1994 for an expansion Unit covering approximately 42.5 acres east and southeast of the existing Units increasing the total landfill footprint from 44.5 acres to 87 acres. The City of Avenal filed a Notice of Determination on 24 October 1994 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). The Discharger did not expand into the aforementioned 42.5 acres as proposed in the final environmental impact report. The Regional Board received a new draft environmental impact report for the facility on 14 June 2004, that proposed expanding the landfill footprint from 87 acres to approximately 123 acres in area and increasing the vertical height 210 feet. The new draft environmental impact report was evaluated by Regional Board staff in a 9 July 2004 letter and memorandum, and was found to adequately address those surface water and groundwater bodies that have the potential to be impacted by the proposed expansion Unit, and the proposed measures to mitigate potential impacts to groundwater and surface water that may result from the proposed expansion Unit.
50. The City of Avenal (Lead Agency) certified the latest final environmental impact report for the facility on 20 September 2004. The Avenal Community Development Director filed a Notice of Determination on 22 September 2004, in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). The Regional Board considered the environmental impact report and incorporated mitigation measures from the environmental impact report into these waste discharge requirements designed to prevent potentially significant impacts to design facilities and to water quality.

51. The potential for surface waters to be degraded by the proposed expansion Unit may occur if surface water drains through exposed wastes as a result of poor drainage control facilities, or from washouts and inundation of the wastes due to a 100-year, 24-hour storm event. This Order requires the Discharger to design all drainage control facilities to prevent the inundation of the proposed expansion Unit by a 100-year, 24-hour storm event or lesser storm event and cover the refuse daily with six inches of daily cover soils and/or alternative daily cover materials (see Facility Specifications C.2, C.3, C.7, C.8, and C.15). The surface water drainage control and erosion control facilities proposed by the Discharger for the proposed expansion Unit include at a minimum: perimeter berms, drainage ditches, metal and/or plastic downdrains, temporary and permanent sedimentation/storm water retention basins, interim drainage structures, and a perimeter drainage channel to divert storm water runoff from areas outside of the landfill property or within it, away from wastes. Also, storm water discharges from the Avenal Landfill are currently covered by National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 for Discharges of Storm Water Associated With Industrial Activities. The City of Avenal's Waste Discharge Identification Number (WDID No.) is 5F16I004508. A revised Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Program and Reporting Requirements (MPRR) will be prepared for the proposed expansion Unit in accordance with NPDES General Permit Requirements.
52. A significant impact to groundwater may occur due to the generation of leachate within the refuse. To mitigate the potential for groundwater degradation by leachate, the Discharger is required to construct the proposed expansion Unit with a composite liner system and an LCRS (see Construction Specification D.3. and 4.). The Discharger has demonstrated that the proposed composite liner system is consistent with the performance goals of the prescriptive standard and affords equivalent protection against water quality impairment. Also to minimize the generation of leachate within the refuse, the Discharger is required to design all drainage control facilities to prevent the inundation of the proposed expansion Unit by a 100-year, 24-hour storm event or lesser storm event and cover the refuse daily with six inches of daily cover soils and/or alternative daily cover materials (see Facility Specifications C.2, C.3, C.7, C.8, and C.15). The Discharger is also required to install detection groundwater monitoring wells at the Point of Compliance (see Detection Monitoring Specification E.1. and Monitoring and Reporting Program, Sections C. and D.) and pan lysimeters beneath the leachate collection and removal system sump(s) of the proposed expansion Unit (see Construction Specification D.2.c, Detection Monitoring Specification E.1., and Monitoring and Reporting Program Section D) and landfill gas wells throughout the proposed expansion Unit (see Facility Specification C.11., Detection Monitoring Specification E.1., and Monitoring and Reporting Program Section D.), to monitor for leachate and landfill gas releases from the proposed expansion Unit.
53. This order implements:

- a. *The Water Quality Control Plan for the Tulare Lake Basin, Second 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.
54. Section 13267(b) of the California Water Code provides that: “In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, or is suspected of discharging, or who proposed to discharge within its region, or any 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 of the reports and the benefits to be obtained from the reports.” The monitoring and reporting program required by this Order and the attached “Monitoring and Reporting Program No. R5-2005-0023” are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

### **PROCEDURAL REQUIREMENTS**

55. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
56. The Regional 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.
57. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
58. Any person affected by this action of the Regional 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.swrcb.ca.gov/water\\_laws/index.html](http://www.swrcb.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. 5-01-060 is rescinded, and that the City of Avenal and Madera Disposal Systems, Inc., their 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.
4. 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.
5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
6. 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.
7. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the Unit, could

produce a 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; or
- b. are 'restricted hazardous wastes'; or
- c. impair the integrity of containment structures;

is prohibited.

## **B. DISCHARGE SPECIFICATIONS**

1. Nonhazardous wastes shall be discharged to either:
  - a. The existing unlined Units; or
  - b. The expansion Unit equipped with a composite liner containment system meeting the requirements for both liners and leachate collection and removal systems specified under D. Construction Specifications.
2. The discharge shall remain within the designated disposal area at all times.
3. A minimum separation of five feet shall be maintained between the base of the wastes and the highest anticipated elevation of underlying groundwater, including the capillary fringe.
4. Collected leachate shall be disposed of in accordance with Title 27 and in a manner consistent with its waste classification.
5. Condensate from the landfill gas control systems shall be disposed of in a manner consistent with the chemical characteristics of the wastes.
6. Neither the treatment nor the discharge of wastes shall cause a pollution or nuisance as defined by the California Water Code Section 13050.
7. The waste 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 "packer waste", excluding waste that would pose a danger of physical damage to the liner. The discharge of the first three feet of 'packer waste' to the expansion Unit shall be continuously observed and documented by an appropriate inspector for 'spinouts' resulting from sharp turns and accelerations and decelerations that could cause localized damage to the liner.

8. The operations layer shall be removed at locations where ‘spinouts’ or localized shear damage is suspected and the liner inspected for damage. If the inspection of the liner determines that it has been damaged, the Discharger shall immediately cordon off an area surrounding the damaged liner, and within **48 hours** following the time of the observed liner damage notify the Regional Board. Within seven days of the observed liner damage, the Discharger shall submit a plan to repair the damaged liner in accordance with the approved Construction Quality Assurance Plan as per Construction Specification D.2.a.

### **C. FACILITY SPECIFICATIONS**

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
2. Units and containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping as a result of a 100-year, 24-hour precipitation event.
3. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface water runoff under the 100-year, 24-hour precipitation conditions.
4. The Discharger shall immediately notify the Regional 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.
5. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, construction, and after closure, the minimum amount necessary to irrigate cover vegetation or for uses approved by the Executive Officer.
6. Cover materials shall be graded to divert precipitation from Units, to prevent the ponding of water over wastes, and to resist erosion as a result of a 100-year, 24-hour precipitation event.
7. All drainage control systems shall be designed and constructed to prevent the ponding of water over wastes.
8. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.

9. Units or portions of Units shall be designed, constructed, and operated in compliance with precipitation and flood control provisions and requirements contained in the Standard Provisions and Reporting Requirements referenced in Provision F.4 below.
10. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
11. 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.
12. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
13. 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.
14. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.
15. A minimum thickness of six inches of on-site cover soil shall be maintained over all but the active disposal area of a Unit. This area shall be properly graded and drained to prevent ponding and infiltration. The active disposal area shall be confined to the smallest practicable area based on the anticipated quantity of waste discharge and other waste management operations, and shall be covered daily with a minimum of six inches of on-site soils, or an alternative daily cover material approved by the Executive Officer.
16. Annually, prior to **1 October** and **within 7 days** following a major storm event, all precipitation and drainage control systems shall be inspected. By **31 October** of each year, or **within 30 days** of a major storm event, any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.
17. By **15 November of each year**, or within 45 days of a major storm event, the Discharger shall submit an annual report to the Regional Board describing the results of the inspection(s) and the measures taken to maintain the precipitation and drainage control systems.



#### D. CONSTRUCTION SPECIFICATIONS

1. The Discharger shall submit for Executive Officer review and approval either prior to, or concurrent with, the Construction Quality Assurance Plan as per Construction Specification D.2.a, below, a Design report for the proposed expansion Unit that includes detailed plans, specifications, and descriptions for the liner components, LCRS components, and leak detection system components. The design report shall incorporate design rationale, with supporting calculations, for the of the proposed containment system, and shall describe design details that allow for annual integrity testing of the primary LCRS to demonstrate whether the primary LCRS was designed and is operating to function without clogging, pursuant to Title 27 CCR Section 20340(d).
2. The Discharger shall submit for Executive Officer review and approval **prior to** construction, design plans and specifications for new Units and expansions of existing Units, that include the following:
  - a. A Construction Quality Assurance Plan meeting the requirements of Title 27 CCR Section 20324; 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 postclosure maintenance periods of the Unit, which shall be installed beneath the composite liner system in accordance with Title 27 CCR Section 20415(d).
3. The base liner system of the proposed expansion Unit shall be constructed in accordance with the following composite liner system design that is comprised, in ascending order:
  - a. A six-inch thick compacted soil layer;
  - b. A compacted soil layer that is a minimum of two feet thick with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less and has a minimum relative compaction of 90%;
  - c. A 60-mil thick HDPE geomembrane;
  - d. A minimum 12-inch thick gravel drainage layer over the base liner system to serve as the LCRS;

- e. A geotextile filter layer; and
  - f. A one-foot thick soil operations layer.
4. The side-slope liner system of the proposed expansion Unit shall be constructed:
- a. With the same materials and in the same sequence and manner as the bottom liner system, except that the 12-inch thick LCRS gravel layer will be replaced with a geocomposite layer, and the soil operations layer will be a minimum of 18 inches thick; or
  - b. With an engineered alternative composite liner system that is comprised of the following, in ascending order:
    - 1) A six-inch soil subgrade 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;
    - 2) A GCL that shall exhibit appropriate strength characteristics to accommodate the stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity;
    - 3) A 60-mil thick HDPE geomembrane;
    - 4) A geocomposite layer; and
    - 5) An 18-inch thick soil operations layer.
5. After the operations layer is installed, the entire base liner system shall be tested for the presence of defects using an electronic leak detection survey method (or supplementary method for detecting and repairing defects where use of the survey equipment is impracticable). All detected defects to the liner system shall be repaired before waste is discharged to the expansion Unit. The location and nature of each detected defect shall be noted in the construction report.
6. The Discharger may propose changes to the base and/or side-slope liner system designs 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(s) 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 Board.
7. Construction shall proceed only after all applicable construction quality assurance plans have been approved by Executive Officer.
  8. The leachate collection and removal system shall be designed and operated so that there is no buildup of hydraulic head on the base or side-slope liner systems.
  9. The primary leachate collection and removal system shall include piping that can be connected to the landfill gas extraction system proposed for the expansion Unit, in order to extract landfill gas.
  10. Following the 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 Title 27 CCR Section 20324(d)(1)(C) 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 approved design plans and specifications, and with the prescriptive standards and performance goals of Title 27.
  11. 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.
  12. If monitoring reveals substantial or progressive increases of leachate generation above the design leachate flow volume of 852 gpd (see Finding No. 38) by the expansion Unit or portion of the expansion Unit, such that the depth of fluid on any portion of the LCRS (excluding the leachate removal pump sump) exceeds 30 cm, the Discharger shall immediately notify the Regional 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.
  13. Closure shall not proceed in the absence of closure waste discharge requirements.

**E. DETECTION MONITORING SPECIFICATIONS**

1. 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. R5-2005-0023. A detection monitoring program for the expansion Unit shall be installed, operational, and one year of

- monitoring data collected prior to the discharge of wastes [Title 27 CCR Section 20415(e)(6)].
2. The Discharger shall provide Regional 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.
  3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2005-0023, and the Standard Provisions and Reporting Requirements, dated April 2000.
  4. 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.
  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. R5-2005-0023.
  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. R5-2005-0023 and Title 27 CCR Section 20415(e).
  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 must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) *Methods for the Analysis of Organics in Water and Wastewater* (USEPA 600 Series), (2) *Test Methods for Evaluating Solid Waste* (SW-846, latest edition), and (3) *Methods for Chemical Analysis of Water and Wastes* (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.

9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.
10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
11. **“Trace” results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. **The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent’s actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for

blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

15. Unknown chromatographic peaks shall be reported, 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 practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Title 22 CCR Division 4.5 Chapter 14 Appendix IX for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".
17. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer.
18. 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). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.

19. 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 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). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
20. The Discharger shall use the following non-statistical method for all analytes (non-naturally occurring waste constituents) that are detected in fewer 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 exceedence 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 fewer 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 20.b.3, below if any constituent or constituents were verified to be present.
  - 3) Any analyte that triggers a discrete retest 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 Units at any monitoring point, the Discharger shall **immediately** implement the requirements of **XI. Response To A Release, C. Release Has Been Verified**, contained in the Standard Provisions and Reporting Requirements.

#### **F. 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. R5-2005-0023, 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 Section 20005 et seq. and 40 CFR 258 et seq.)*, dated April 2000, which are hereby incorporated into this Order.
5. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the 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 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 active life, closure, and

- postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
9. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.
  10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional 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 Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.6. and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Board.
  11. 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 to the Executive Officer for review and approval.
  12. The Discharger shall maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill as specified in Title 27 CCR Section 22221, and shall submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board as specified in Title 27 CCR Subchapter 3 Article 1.
  13. The Discharger is required to maintain financial assurance mechanisms for closure and post closure maintenance costs as specified in Title 27 CCR Sections 22205 and 22210. The Discharger is required to submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board, which determines if the mechanism meets the requirements of Title 27 CCR Subchapter 3 Article 1, and if the amount of coverage is adequate.
  14. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

Task

Compliance Date

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2005-0023  
CITY OF AVENAL AND MADERA DISPOSAL SYSTEMS, INC.  
FOR CONSTRUCTION AND OPERATION  
CITY OF AVENAL MUNICIPAL SOLID WASTE LANDFILL  
KINGS COUNTY

-27-

a. Construction Plans

Submit a Design Report that includes detailed plans and specifications for Executive Officer review and approval.  
(see Construction Specification D.1. and D.2.)

**Prior to construction**

b. Construction Report

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.10.)

**Prior to discharge**

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

I, THOMAS R. PINKOS, 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 27 January 2005.

VSM:vsm/rac

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THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL REGIONAL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0023

FOR  
CITY OF AVENAL  
AND  
MADERA DISPOSAL SYSTEMS, INC.  
FOR  
CONSTRUCTION AND OPERATION  
AVENAL MUNICIPAL SOLID WASTE LANDFILL  
KINGS COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2005-0023.

**A. REQUIRED MONITORING REPORTS**

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

**B. REPORTING**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2005-0023 and the Standard Provisions and Reporting Requirements. Reports which do not comply with the required form at 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.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional 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 Semiannual 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>

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in E. Reporting Requirements 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 Regional Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

**C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD**

## 1. **Water Quality Protection Standard Report**

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Executive Officer shall review and approve the Water Quality Protection Standard, or any modification thereto, for each monitored medium.

The report shall:

- a. Identify **all distinct bodies of 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 for the groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27 CCR Section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

## 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 III for the specified monitored medium, and Table V. The Discharger shall monitor all constituents of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

### a. **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 III for the specified monitored medium and Table IV.

### 3. Concentration Limits

The concentration limits for each constituent of concern are as follows:

- a. For anthropogenic (not naturally occurring) constituents, which have no natural, and therefore, no background values, the concentration limit (water quality protection standard) shall be the detection limit of the analytical method(s) used.
- b. For naturally occurring constituents of concern (inorganic constituents of concern), the concentration limit shall be the calculated statistical concentration limit, except, when there is insufficient monitoring data to calculate statistical concentration limits. Concentration limits will be determined using an intra-well statistical approach where eight data points are required for calculation. For all inorganic constituents of concern that have been consistently non-detected, the interim concentration limit shall be equal to the method reporting limit (Practical Quantitation Limit (PQL)) until sufficient monitoring data has been collected to calculate the statistical concentration limit. All inorganic constituents of concern, for which historic monitoring data exist but contain insufficient data (<25% detections) for statistical evaluation, shall have an interim concentration limit equal to 1.5 times the highest concentration to date. Once sufficient monitoring data has been collected (>25% detections for eight data points), a statistical concentration limit will be calculated.

Pursuant to Title 27 CCR Section 20415(e)(10)(B), for each naturally occurring inorganic constituent of concern, statistically significant increases will be determined semiannually based on intra-well comparisons. A comparison will be made between the calculated concentration limits and the detected values for each monitoring well within the ground water monitoring network. The concentration limit (applicable suite of background data) for that constituent shall be updated annually according to a “moving window” formula. The concentration limits will be the resulting upper Shewhart Control Limit (SCL) based on the EPA recommended SCL value of 4.5 for the constituent.

For each annual reporting period subsequent to the initial reporting period, the Discharger shall create the new concentration limit, for that constituent, by taking the prior reporting period’s background data, adding the newest datum, for that constituent for each monitoring well. The new concentration limit will be used to evaluate any significant increases for the next years data. Regarding the “moving window”, the newest two sampling events completed in the previous year will replace the oldest two sampling event in the data set.

Statistical calculations shall be in accordance with a statistical method approved pursuant to Title 27 CCR Section 20415 or an alternate method acceptable to the Executive Officer.

#### **4. Point of Compliance**

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

#### **5. 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, leachate, and the unsaturated zone, in accordance with Detection Monitoring Specifications of Waste Discharge Requirements, Order No. R5-2005-0023. 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. For a new Unit, background analytical data shall be the historic dataset for each constituent of concern and monitoring parameter for each monitoring well. Based on the historic background dataset, the Discharger shall implement data analysis methods allowed by Title 27 CCR Section 20415(e)(8) for each constituent of concern and monitoring parameter for each monitoring well.

All point of compliance 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, and leachate monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through III.

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 V.

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**

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 in accordance with a Detection Monitoring Program approved by the Executive Officer. 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(s) 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.

Tabular data 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. The tabular data shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells and any additional wells added as 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 annually with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table V every five years.

## **2. Unsaturated Zone Monitoring**

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 in accordance with a detection monitoring plan approved by the Executive Officer. 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 V every five years.

The pan lysimeters shall be checked monthly 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 Monitoring**

All Unit 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 **immediately** and analyzed for the constituents listed in Table III. Leachate shall then 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 V. The quantity of leachate pumped from each sump shall be measured and reported monthly as Leachate Flow Rate (in gallons).

Leachate that 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. 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*. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

**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 Order No. R5-2005-0023, and records of all data used to complete the application for Order No. R5-2005-0023. 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 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 addressed by the report, a description of:
      - 1) The time of water level measurement;
      - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
      - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;
      - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
      - 5) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan.
    - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
    - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
    - d. Laboratory statements of results of all analyses evaluating compliance with requirements.

- e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
  - f. A summary and certification of completion of all **Standard Observations** for the Unit(s), for the perimeter of the Unit(s), and for the receiving waters. The Standard Observations shall include:
    - 1) For the Unit(s):
      - a) Evidence of ponded water at any point on the facility (show affected area on map);
      - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
      - c) Evidence of erosion and/or of day-lighted refuse.
    - 2) Along the perimeter of the Unit(s):
      - a) Evidence of liquid leaving or entering the Unit(s), estimated size of affected area, and flow rate (show affected area on map);
      - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
      - c) Evidence of erosion and/or of day-lighted refuse.
  - g. The quantity and types of wastes discharged and the locations in the Unit(s) where waste has been placed since submittal of the last such report.
4. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional 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 constituents of concern and monitoring parameters, and an estimated date that the results will be submitted to the Regional Board; and

- e. Corrective measures underway or proposed, and corresponding time schedule.
5. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board 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, 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, 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. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month reporting periods, shall be submitted in tabular form as well as in a digital file format acceptable to the Executive Officer. The Regional Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [§20420(h)], in that this facilitates periodic review by the Regional 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 map showing the area and elevations in which filling has been completed during the previous calendar year and a comparison to final closure design contours.
  - e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
  - f. An evaluation of the effectiveness of the leachate monitoring/control facilities.

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

Ordered by: \_\_\_\_\_

MONITORING AND REPORTING PROGRAM NO. R5-2005-0023  
CITY OF AVENAL  
AND MADERA DISPOSAL SYSTEMS, INC.  
FOR CONSTRUCTION AND OPERATION  
AVENAL MUNICIPAL SOLID WASTE LANDFILL  
KINGS COUNTY

-12-

THOMAS R. PINKOS, Executive Officer

27 January 2005

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(Date)

VSM:vsm/rac

**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.	Quarterly
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	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 IV)	µg/L	Semiannual
<b>Constituents of Concern (see Table V)</b>		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years



**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)	µg/cm <sup>3</sup>	Semiannual
Methane	%	Semiannual

**PAN LYSIMETER (OR OTHER LYSIMETER TYPE)**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	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 8260B, see Table IV)	µg/L	Semiannual

**Constituents of Concern (see Table V)**

Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years

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

**Continued**

Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

**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	Monthly
pH	pH units	Monthly
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	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 8260B, see Table IV)	µg/L	Semiannual
<b>Constituents of Concern (see Table V)</b>		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

**TABLE IV**

**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 8260B**

Acetone  
Acrylonitrile  
Benzene  
Bromochloromethane  
Bromodichloromethane  
Bromoform (Tribromomethane)  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Dibromochloromethane (Chlorodibromomethane)  
1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
m-Dichlorobenzene (1,3-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans-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)  
Hexachlorobutadiene

**TABLE IV**  
**MONITORING PARAMETERS FOR DETECTION MONITORING**

**Continued**

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 V**  
**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	7131A
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Selenium	7742
Thallium	7841
Cyanide	9010B
Sulfide	9030B

**Volatile Organic Compounds:**

**USEPA Method 8260B**

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 V**

**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  
1,1,1,2-Tetrachloroethane

**TABLE V**

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

**Continued**

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 8270C - 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  
Chlorobenzilate  
p-Chloro-m-cresol (4-Chloro-3-methylphenol)  
2-Chloronaphthalene



**TABLE V**

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

**Continued**

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  
Heptachlor epoxide  
Hexachlorobenzene  
Hexachlorocyclopentadiene  
Hexachloropropene

**TABLE V**

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

**Continued**

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  
1,2,4,5-Tetrachlorobenzene  
2,3,4,6-Tetrachlorophenol  
o-Toluidine  
Toxaphene  
2,4,5-Trichlorophenol

**TABLE V**

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

**Continued**

0,0,0-Triethyl phosphorothioate  
sym-Trinitrobenzene

**Chlorophenoxy Herbicides:**

**USEPA Method 8151A**

2,4-D (2,4-Dichlorophenoxyacetic acid)  
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)  
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)  
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

**Organophosphorus Compounds:**

**USEPA Method 8141A**

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

## INFORMATION SHEET

ORDER NO. R5-2005-0023  
CITY OF AVENAL AND MADERA DISPOSAL SYSTEMS, INC.  
FOR CONSTRUCTION AND OPERATION  
CITY OF AVENAL MUNICIPAL SOLID WASTE LANDFILL  
KINGS COUNTY

The City of Avenal owns the Avenal Municipal Solid Waste Landfill (landfill). The landfill is operated by Madera Disposal Systems, Inc., a subsidiary of Waste Connections, Inc. The City of Avenal and Madera Disposal Systems, Inc., are hereafter jointly referred to as Discharger. The landfill is immediately northeast of and within the incorporated area of the City of Avenal.

The climate in the landfill area is arid, with hot, dry summers and cool winters. The average annual precipitation is 5.59 inches and the mean pan evaporation is estimated to be 111 inches per year. The landfill is not within a 100-year floodplain according to the Federal Emergency management Agency's (FEMA) Flood Insurance rate Map, Community-Panel Number 065073 0010A.

The waste management facility is on the western slope of the northwest trending Kettleman North Dome and is constructed within the consolidated to semi-consolidated materials of the Pliocene-Pleistocene Tulare Formation. The Tulare Formation consists of interbedded, claystones, mudstones, sandstones, gravels, and gypsum lenses of which the lower permeability claystones and mudstones are predominant. Underlying the Tulare Formation is the upper Pliocene San Joaquin Formation that consists of interbedded silt, clay, sandstone, and conglomerates. The beds of the Tulare Formation and San Joaquin Formation dip to the southwest at approximately 30 degrees.

Surface drainage is southwesterly toward the Kettleman Plain in the Kettleman Hydrologic Area (558.50) of the Tulare Lake Basin. There are no perennial streams in the Kettleman plain topographically downgradient of the landfill. The designated beneficial uses of Valley Floor Waters, as specified in the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (Basin Plan), are agricultural supply, industrial service and process supply, water contact and non-contact water recreation, warm fresh water habitat, preservation of rare, threatened and endangered species, and groundwater recharge.

The waste management facility consists of three existing unlined waste management units (Units) covering 44.5 acres. The existing Units are currently classified as Class III landfills that accept or accepted municipal solid waste in accordance with Title 27, California Code of Regulations (CCR), Section 2005, et seq.

The Discharger proposes to construct an expansion Unit for the discharge of municipal solid waste to an area east, west, and south of the existing Units. The proposed expansion Unit would increase the landfill footprint to approximately 123 acres in area and increase the vertical height 210 feet.

The Discharger proposes to install an engineered alternative liner system in the proposed expansion Unit that consists of the following, in ascending order: The proposed base liner system would consist of: 1) a six-inch thick compacted soil subgrade; 2) a two-foot thick compacted clay layer (CCL) compacted to exhibit a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec; 3) a 60-mil thick HDPE geomembrane; 4) a minimum 12-inch thick gravel drainage layer (leachate collection and removal system); 5) a geotextile filter layer; and 6) a one-foot thick soil operations layer.

Side-slope liners are proposed to be constructed of either: 1) the same materials and in the same sequence and manner as the bottom liner system, except that the 12-inch thick LCRS gravel layer will be replaced with a geocomposite drainage layer to convey leachate to leachate collection trenches and leachate collection and removal system sumps, the operations layer will be 18 inches thick; or 2) a GCL and a 60-mil thick HDPE geomembrane. The side-slope subgrade will be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a surface that is smooth and free from rocks, sticks, and other debris that could damage or otherwise limit the performance of the geosynthetic clay layer and/or geomembrane.

The Discharger adequately demonstrated that the construction of a Subtitle D prescriptive standard liner system on the side-slopes of the proposed expansion Unit would be unreasonable and unnecessarily burdensome when compared to the proposed engineered alternative design. The construction of a prescriptive standard compacted clay liner on the side-slopes would cost substantially more than the alternative design. The Discharger has also demonstrated that the proposed engineered alternative for the side-slope liner system is consistent with the performance goals of the prescriptive standard and affords at least equivalent protection against water quality impairment.

There are two irrigation wells and one cathodic protection well within one mile of the site. No surface springs or other sources of groundwater supply have been observed. The first encountered groundwater is about 356 to 420 feet below the native ground surface (bgs). Groundwater elevations range from 488 feet MSL to 562 feet MSL. The groundwater is unconfined to semi-confined, becoming confined down-dip (southwest). The depth to groundwater fluctuates seasonally as much as two feet. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 1,550 and 10,000 micromhos/cm, with total dissolved solids (TDS) ranging between 1,570 and 6,900 mg/l. Groundwater has been age-dated using tritium and carbon-14 methods and shown to be older than 51 years of age and possibly as old as 5,000 to 6,000 years of age.

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

Groundwater flow is minimal at the site due to the low hydraulic conductivity of the sediments, very low infiltration rates, and low hydraulic gradients. The age-dating of groundwater tends to confirm a low-flow system with no recent infiltration of

precipitation. Groundwater flow is believed to be along the bedding planes in the direction of strike (south 50 degrees east). Monitoring well pairs in different beds indicate flow to the southeast and possibly the northwest, however, the direction of flow is believed to be southeasterly. Secondary groundwater flow may also be to the southwest, toward the Kettleman Plain, if secondary porosity features exist at depth, which cross the bedding planes. The average groundwater gradient within specific beds is approximately 0.009 feet per foot. The average groundwater velocity is 0.02 feet per year.

A release from the existing Units has not been detected in groundwater.

Volatile organic compounds are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill. Since volatile organic compounds are not naturally occurring, and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 CCR for the determination of a release of wastes from a Unit. Title 27 CCR does 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. However, Title 27 CCR does not specify a specific method for non-statistical evaluation of monitoring data. The Board may specify a non-statistical data analysis method pursuant to Title 27 CCR Section 20080(a)(1) of. 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.

The specified non-statistical method for evaluation of monitoring data in this Order provides two criteria (or triggers) for making the determination that there has been a release of waste constituents from a Unit. The presence of two waste constituents above their respective method detection limit (MDL), or one 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 waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release in accordance with Title 27 CCR, the detection of two 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 detecting one waste constituent above its MDL as a trigger.

On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste [MSW] regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste is discharged. The majority of the federal MSW regulations

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KINGS COUNTY

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became effective on the “Federal Deadline”, which was on 9 October 1993. With the issuance of Resolution No. 93-62, the State Water Resources Control Board established a statewide policy for the regulation of discharges of municipal solid wastes consistent with Subtitle D. Following the issuance of Resolution No. 93-62, the USEPA deemed the State of California to be an approved state, meaning that compliance with the applicable state regulations constitutes compliance with the corresponding portions of the federal Subtitle D regulations. These requirements are consistent with Resolution No. 93-62 and Subtitle D, and implement the appropriate state regulations in lieu of Subtitle D. The Discharger also needs to comply with all applicable provisions of Subtitle D that are not implemented through compliance with this Order or Title 27 CCR.

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

The City of Avenal certified a final environmental impact report for the facility on 13 October 1994 for an expansion Unit covering approximately 42.5 acres east and southeast of the existing Units increasing the total landfill footprint from 44.5 acres to 87 acres. However, the Discharger did not expand into the aforementioned 42.5-acre expansion Unit as proposed in the final environmental impact report.

The Regional Board received a new draft environmental impact report for the facility on 14 June 2004, that proposed expanding the landfill footprint from 87 acres to approximately 123 acres in area and increasing the vertical height 210 feet. The new draft environmental impact report was evaluated by Regional Board staff in a 9 July 2004 letter and memorandum, and was found to adequately address those surface water and groundwater bodies that have the potential to be impacted by the proposed expansion Unit, and the proposed measures to mitigate potential impacts to groundwater and surface water that may result from the proposed expansion Unit. The final environmental impact report for the expansion Unit was approved by the City of Avenal on 20 September 2004. The Regional Board considered the environmental impact report and incorporated mitigation measures from the environmental impact report into these waste discharge requirements designed to prevent potentially significant impacts to design facilities and to water quality. Revision of the waste discharge requirements updates the requirements to conform with the California Water Code and Title 27 CCR Section 20005 et seq.

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