

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2010-0016

WASTE DISCHARGE REQUIREMENTS  
FOR  
CONSTRUCTION, OPERATION, AND DETECTION MONITORING  
SAN JOAQUIN COUNTY DEPARTMENT OF PUBLIC WORKS  
NORTH COUNTY LANDFILL  
CLASS III LANDFILL  
SAN JOAQUIN COUNTY

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

1. The San Joaquin County Department of Public Works (hereafter "Discharger") owns and operates the North County Landfill, an active, Class III Municipal Solid Waste (MSW) landfill in northeastern San Joaquin County. The landfill is on East Harney Lane near Atkins Road, approximately nine miles east of Lodi, as shown in Attachment A, which is incorporated herein and made part of this Order. The landfill is on a 320-acre site in Section 21, T3N, R8E, MDB&M, corresponding to Assessor Parcel Numbers 065-120-02, 065-120-03, 065-120-08, and 065-120-09.
2. On 26 September 2008, the Discharger submitted an Amended Joint Technical Document (JTD) describing significant changes at the facility since 2002, and future construction plans, as follows:
  - a. Construction of compositely-lined disposal module M-4;
  - b. Installation of landfill gas (LFG) controls;
  - c. A proposal to accept treated wood waste;
  - d. Plans for vertical expansion of the landfill, including geotechnical review of landfill design;
  - e. Revised Preliminary Closure and Post-Closure Maintenance Plan (PCP/PCMP); and
  - f. Proposed Solid Waste Facilities Permit revisions.

These revised waste discharge requirements (WDRs) include updated findings and requirements for the facility based on information in the amended JTD and in accordance with California Code of Regulations (CCR), title 27, division 2 (Title 27) regulations. Previous WDRs Order R5-2002-0219 therefore no longer adequately regulates the facility.

3. The landfill has been in operation since 1991, accepting primarily household and commercial wastes from the City of Lodi and surrounding areas. The facility includes a 185-acre landfill unit and associated precipitation and drainage controls; monitoring systems; LFG extraction facilities; access roads; office and

maintenance building; scale house; pump station; and a materials recovery facility (MRF), as shown in Attachment B, which is incorporated herein and made part of this Order.

- The landfill currently consists of three waste disposal modules (M1, M3, and M4) constructed on 53 acres along the western side of the unit, as shown in Attachment B. Seven additional modules (M5 through M11) will be constructed on an as-needed basis on the remaining 132 acres of the unit area. The Discharger currently estimates that Module M5 will be constructed in 2012. The development status of the landfill may be summarized as follows:

Module	Year Constructed	Size, acres	Location	Status
1 <sup>1</sup>	1991	27	NW	Inactive
3	1995	14	West-NW	Partially Active
4	2003	12	West-Central	Active
5 - 11	--- <sup>2</sup>	132	SW, East Half	Not yet constructed

- Includes area originally planned for Module 2, which was never constructed.
- Future modules to be constructed on as needed basis.

#### **SUBTITLE D**

- On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated MSW landfill regulations under the Resource Conservation and Recovery Act (RCRA) known as "Subtitle D" (Code of Federal Regulations, title 40, part 258). Subtitle D applies to all California Class II and III landfills that both (a) accepted MSW and (b) accepted any waste on or after the effective date of Subtitle D (9 October 1991). Limited exceptions include (a) MSW landfills that ceased accepting wastes prior to the federal deadline (may only be required to comply with the closure requirements); (b) MSW landfills that were constructed prior to the federal deadline (may, to extent of pre-deadline footprint, be exempt from the design requirements); and (c) small rural landfills per 40 CFR 258.1(f) (in California, exempt from the design requirements).

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

- The landfill accepts wastes defined as "inert" and "nonhazardous" under Title 27, sections 20230 and 20220, respectively. The landfill also accepts MSW as defined in Title 27, Section 20164. Recyclable wastes are generally diverted to the MRF.
- Approximately 400 tons per day (144,000 tons per year) of wastes, including MSW, commercial wastes, and construction and demolition debris, were

discharged to the landfill in 2008. About 5.3 million cubic yards (CY) of waste are estimated to be in place at the landfill.

8. The JTD includes a proposal to accept "treated wood waste" (TWW), a hazardous waste under California Health and Safety Code (CHSC), division 20, chapter 6.5, article 5, Section 25150.7; and CCR, title 22, chapter 34, Section 67386.2 (see Information Sheet, Attachment 1). Title 22 allows TWW to be disposed of in any portion of an MSW landfill that is compositely lined, provided that the WDRs allow such disposal and that the TWW is handled in accordance with specified alternative standards consistent with the CHSC, Title 22 and the California Water Code. These WDRs allow the landfill to accept TWW provided that the Discharger complies with those standards. See Discharge Prohibition A.9 and Discharge Specifications B.7 through B.10.
9. The landfill is a "new" waste management unit under Title 27, Section 20080(d), since it did not operate on or before 27 November 1984. The landfill is a Class III landfill unit under Title 27, article 3, subchapter 2, chapter 3.

#### **SITE DESCRIPTION**

10. The site is in the Central Valley alluvial plain near the edge of the Sierra Nevada Foothills. The surrounding terrain is low rolling pastureland with an average grade of about 1/2% toward the west. Surface elevations range from about 105 feet MSL in the southwest corner of the site to about 125 feet MSL in the southeast corner of the site.
11. Land uses within the landfill vicinity include agriculture, livestock grazing, dairies, industrial, and low-density residential development. Other uses in the area include water conveyance, roads, utility easements, and a migrant labor housing facility.
12. An August 2004 Department of Water Resources (DWR) well survey identified 37 active municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the site. The wells ranged from about 100 to 700 feet deep and averaged about 225 feet deep. Three onsite supply wells were also identified, including one domestic, one agricultural and one industrial well. No wells were identified within 1000 feet of the landfill.
13. The site is not within a 100-year floodplain based on the Federal Emergency Management Agency's Flood Insurance Rate Map, Community Panel Number 060-299-0330A, effective May 15, 1980.

#### **SURFACE AND STORM WATER**

14. Surface drainage in the area is to South Paddy Creek (an intermittent stream that crosses the site immediately north of the landfill); thence to Paddy Creek (about 2.8 miles west of the site); Bear Creek; and Disappointment Slough, which is tributary to the San Joaquin River.

15. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition (hereafter Basin Plan) designates beneficial uses; establishes water quality objectives; contains implementation plans and policies for protecting waters of the basin; and incorporates by reference, plans and policies adopted by the State Water Resources Control Board.
16. The beneficial uses of the San Joaquin River (between Sack Dam and the mouth of the Merced River) are municipal and domestic supply; agricultural supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; migration of aquatic organisms; spawning, reproduction and/or early development; and wildlife habitat.
17. The site receives an average of 16.5 inches per year of precipitation as determined from Rainfall Depth Duration Frequency data provided by the State Department of Water Resources for the Linn Ranch Station about two miles north of the site. The 100-year, 24-hour precipitation event for this station is 3.3 inches. The estimated mean Class A pan evaporation rate is about 65 inches per year.
18. Storm water run-on is diverted around the site by means of a perimeter berm and outboard ditch within a 100-foot setback from the site boundary. Some landfill runoff is also captured in the ditch. Storm water discharge locations at the site include two outfalls from the landfill perimeter ditch to the wetlands mitigation area and (via culvert) South Paddy Creek, one on the eastern side of the site near the NE corner of future Module 11, and the other on the western side of the site near the NW corner of existing Module 1. Two other (inactive) culverts along the perimeter ditch are planned as future storm water discharge locations as the landfill is developed. See Attachment B: Site Map. Storm water discharges to South Paddy Creek are monitored under the General Industrial Storm Water Permit.
19. Runoff from existing landfill modules and undeveloped areas of the unit is directed via onsite ditches to an interim sedimentation basin (ISB) in the northeast part of the site. Water collected in module excavation areas and other low spots is pumped into ISB drainage system. See Finding 54. The ISB includes an overflow pipe that, during periods of heavy precipitation, discharges via culvert to the outboard drainage ditch. The remaining water in the ISB dissipates through percolation, evaporation, and/or use in site operations (e.g., dust control).
20. All landfill drainage facilities, including overside drains, perimeter ditches, culverts, and the ISB were designed to handle a 24-hour, 100-year storm event. See Finding 53.

## GEOLOGY

21. The regional geology in the site area represents a transition area between Cretaceous to Quaternary Period alluvial deposits of the Great Valley flood plain and Jurassic Period metamorphic rocks of the Sierra Nevada foothills. The valley deposits thin out within a few miles east of the site where the surface geology is primarily foothill terrain dominated by dissected alluvial uplands and exposed, uplifted bedrock.
22. There are no known Holocene faults within 1000 feet of the facility. The closest active fault is the Bear Mountains fault zone within the Foothills Fault system about 18 miles (29 km) east of the site in the Sierra foothills. Recorded magnitudes of seismic events along this fault zone range up to 5.8 on the Richter scale (1975 Oroville event). The Foothills Fault system has been characterized as producing a maximum credible earthquake of 6.5.
23. The Central Valley Coast Range Fault, approximately 54 km from the site, has a maximum probable earthquake (MPE) of 6.4, and the San Andreas Fault, approximately 126 km distant has an MPE of 8.0; peak horizontal ground accelerations associated with each MPE event are .10g and .09g, respectively.
24. Surface soils at the site consist of interbedded silts and clays to about 3 feet bgs, underlain by a thin (i.e., ½ foot) layer of hardpan. Beneath the surface soil layers, soils consist of laterally discontinuous Riverbank (northern half of site) and Turlock Lake (southern half of site) formation alluvium, including silts, clays, sand and gravel layers. These deposits show coarsening-up patterns typical of Pleistocene Age alluvial stream deposits flanking the eastern Sierra foothills.

## UNSATURATED ZONE

25. The lowest elevation of solid waste in the landfill is about 60 feet MSL, corresponding to the base of M3. The lowest elevation of leachate in the landfill is about 56 feet MSL, corresponding to the base of the LCRS sump for M3.
26. The estimated capillary rise in the unsaturated zone is estimated to be less than five feet based on soil type. The minimum separation from waste to groundwater, taking into account the estimated capillary rise, is about 83 feet. See Findings 25 and 34.
27. Hydraulic conductivities ranging from  $1 \times 10^{-6}$  cm/sec to  $1 \times 10^{-8}$  cm/sec (based on testing of remolded laboratory samples) have been measured in the upper 10 feet of the unsaturated zone, which contains a greater percentage of clay and silt than in underlying layers (e.g., 30 to 60 feet bgs), where higher hydraulic conductivities (ranging from  $1 \times 10^{-4}$  to  $2 \times 10^{-7}$  cm/sec based on permeameter and laboratory testing) have been measured. See Finding 24.

Landfill Gas

28. In 2003, the Discharger installed a methane migration monitoring system, as required by the Local Enforcement Agency under Title 27 solid waste regulations (Section 20919 et seq.). Previous WDRs required that the system also be used to monitor soil gas for volatile organic compounds (VOCs). The system has since been expanded and presently includes 17 triple completion monitoring wells (i.e., SGs-1, 2, 3, and 8 through 22) installed along the site perimeter with nested probes screened in the upper, intermediate, and lower portions of the unsaturated zone. In addition to methane migration monitoring system wells, the site includes four singly completed soil gas monitoring wells (SGs-4, 5, 6 and 7) historically installed at the site along the interior perimeter of landfill modules M1 and M3 and screened in the upper portion of the unsaturated zone. Section E.1 of Monitoring and Reporting Program (MRP) No. R5-2010-0016 specifies the monitoring points and parameters for soil gas monitoring under this Order.
29. Subsequent LFG monitoring showed generally less than 1.0% methane by volume in all probes, except those within the site interior immediately adjacent to the landfill (i.e., not perimeter migration monitoring wells) where maximum methane concentrations ranged from 9.5% by volume in SG-2S to 59.7% by volume in SG-6, and carbon dioxide was detected up to 44.6% in SG-6. Fewer VOCs and lower VOC concentrations (generally less than 100 ppbv or non-detect) were similarly detected in the site perimeter wells compared to SG-6, where, for example, detected VOCs (e.g., Freon 12) were generally greater than 100 ppbv, but less than 1,000 ppbv. Since initiation of LFG extraction in June 2006 (see Finding 38), the concentration of methane in well SG-6 has been reduced to less than 2% by volume.
30. The unsaturated zone monitoring system consists of suction lysimeters installed beneath the landfill modules during their construction. There are currently eight lysimeters (VZs-1 through 8) installed at the locations shown in Attachment C. Lysimeter monitoring prior to 2000 showed elevated concentrations of general minerals and low concentrations of several VOCS in pore water at Module 1, such as follows:

Module 1		
Lysimeter Monitoring Results, January 1995		
<i>Constituent</i>	<i>Concentration</i>	
	<u>Background</u>	<u>Detection</u>
General Minerals, mg/L	<u>VZ-1</u> <sup>1</sup>	<u>VZ-3</u> <sup>1</sup>
Chloride	25	500
Bicarbonate Alkalinity	63	380
Total Dissolved Solids (TDS)	750	2,100

VOCs, µg/L		
Carbon Disulfide	<.5	5.1
1,2-Dichloroethane	<.5	3.9
Trichlorofluoromethane	<.5	1.5
1,1,1-Trichloroethane	<.5	1.9
Trichloroethene	<.5	0.6
Tetrachloroethene	<.5	1.1

1. Similar constituents and elevated concentrations also detected in VZs-2 and 4.

Neither the background nor any of the detection lysimeters have produced a sufficient amount of liquid for sampling since 2003. VZ-3 has been dry since April 2000. Provision G.8.b requires that Discharger investigate all lysimeters at the site and submit a status report as to their condition, including plans for repair or replacement, as necessary.

31. The quality of liquid detected in the leachate collection sumps of the landfill modules during the First Half 2008 was as follows:

<i>Constituent</i>	Leachate Monitoring Results, First Half 2008		
	<u>Module 1</u>	<u>Module 3</u>	<u>Module 4</u>
General Minerals, mg/L			
Chloride	590	500	260
Bicarbonate Alkalinity	790	730	1,100
TDS	2,400	2,100	1,600
VOCs, µg/L <sup>1</sup>			
Acetone	31	14	20
Benzene	0.68	< 0.4	8.8
1,1-Dichloroethane	1.1	0.91	2.9
1,2-Dichloroethane	1.4	1.6	4.3
1,4-Dichlorobenzene	3.4	3.0	2.4
Cis-1,2-DCE	1.6	0.78	2.9
MTBE	8	11	50
Tert-Butyl Alcohol	220	150	110
Vinyl Chloride	3.0	2.9	19

1. Listing includes most, but not all, VOCs detected in the module sumps during the monitoring period.

MRP Section D requires that the discharger monitor leachate semiannually for the above leachate monitoring parameters.

### GROUNDWATER

32. The beneficial uses of the ground water at the site are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
33. The upper water-bearing zone (UWBZ) at the site is unconfined or semi-confined and occurs in the alluvial deposits of the Turlock Lake and/or Laguna formations (see Finding 24). The overall permeability of these deposits is estimated to be about  $9 \times 10^{-3}$  cm/sec based on slug testing data from the boring for well G-1 (see Table 3, *Geologic and Hydrogeologic Report*, Appendix C, JTD).
34. The average depth to groundwater at the site is about 154 feet bgs (-36.5 feet MSL) with about six (+/-3) feet of seasonal variation. The groundwater gradient is typically about 0.004 ft/ft toward the southwest (or west-southwest), corresponding to a groundwater flow velocity of about 13.5 ft/yr. At times the measured flow direction has shown substantial historical variation, however, and/or has not been consistent site-wide, indicating possible onsite or offsite influences (e.g., onsite sedimentation basin, localized pumping).
35. There are currently seven groundwater monitoring wells at the site (see Attachment B), including one upgradient (G-1 on eastern site perimeter), one side gradient (G-2 on the western site perimeter), and four down gradient (Gs-3D, 4, 5 and 6, all along the western site perimeter). Monitoring of side gradient well G-2 was discontinued in 1997 and the status of the well is not known. Provision G.8.c requires that the Discharger investigate well G-2 and submit a status report as to its condition, including plans for repair or replacement, as necessary.
36. Historical monitoring data for the landfill shows generally good water quality in the UWBZ, as follows:

<b>Constituent</b>	<b>Concentration</b>			
	(mg/L, except where noted)			
	<u>Upgradient</u>		<u>Downgradient</u>	
	<u>Historical</u> <sup>1</sup>	<u>2008</u> <sup>2</sup>	<u>Historical</u> <sup>1</sup>	<u>2008</u> <sup>2</sup>
Chloride	17	29	8	7
Bicarbonate Alkalinity	91	150	94	120
TDS	201	220	172	160
Specific Conductance, µmhos/cm	267	364	230	199

1. Based on annual average.  
 2. Based on First Half 2008 monitoring results.

Time series plots of the data do not indicate any clear exceedances over upgradient concentrations, but show moderately higher concentrations of bicarbonate alkalinity in both the upgradient and downgradient wells in recent

years compared to historical averages, a possible impact from carbon dioxide in LFG.

37. A release to groundwater consisting of low to trace concentrations of VOCs, primarily BTEX (benzene, ethylbenzene, toluene, and xylenes) compounds, was confirmed in down gradient well G-4 in July 2002. Subsequent evaluation monitoring found that the VOC impacts to groundwater did not extend down gradient to well G-6. By January 2003, maximum VOC impacts at G-4 had attenuated to trace concentrations. The EMP concluded that the VOC impacts were sporadic and likely associated with LFG. No VOCs have been detected in any of the wells since 2006

#### Corrective Action

38. In 2006, the Discharger installed an LFG extraction system in accordance with a May 2005 Corrective Action Plan (*Corrective Action Plan For the Prevention of Future Groundwater Impact by Landfill Gas at the North County Recycling Center and Sanitary Landfill*). The system (which became operable in June 2007) was intended to control off-site migration of landfill gas and to address concerns regarding LFG as a suspected source of VOCs sporadically detected in groundwater. The system included installation of 7 vertical extraction wells in existing modules M1 and M3; 2 LCRS risers between M1 and M3; horizontal wells installed in collection trenches in expansion module M4; and associated collection system piping, condensate handling facilities, blowers and a flare station. The plan anticipated that future modules would be constructed with LFG extraction facilities similar to Module 4 and tied into the system.
39. Based on the two semiannual monitoring events since startup of the LFG collection system in 2007, lower LFG constituent concentrations have been detected in interior well SG-6 compared to prior to system startup, including methane (<30% by volume), and carbon dioxide (<30% by volume) and VOCs (generally <100 ppbv). See Finding 29.

#### LANDFILL OPERATIONS

40. Refuse is spread and compacted in approximately two-foot lifts until 14 feet above surrounding refuse, as determined by laser. The top slope of the working face is usually graded (also by laser) to a 4% minimum slope for drainage.
41. The discharger uses onsite borrow for daily and intermediate cover soil. Tarps are also employed as alternative daily cover (ADC). Cover soil is obtained from excavation of the next module and/or from existing onsite stockpiles. A refuse to soil ratio of approximately 5:1 is maintained for daily cover, which is applied at the working face in 6-inch minimum lifts. Intermediate cover of 12-inches minimum thickness is placed in areas that will be inactive for at least 180 days per Title 27, CCR Section 20705.

Leachate and Condensate Management

- 42. Since 2002, the discharger has been pumping collected landfill leachate and LFG condensate back to the landfill, subject to approvals in previous WDRs, which incorporated liquids restrictions in Title 27 and Subtitle D regulations. In the Second Half 2008, approximately 124,000 gallons of leachate (including LFG condensate) were pumped from and returned to the landfill.
- 43. As described in the JTD, LFG condensate is pumped into the LCRS and handled like leachate. Leachate is pumped from the landfill sumps and/or AGTs to dedicated infusion points on the upper elevations of the compositely lined landfill Modules. No liquid is returned to Module 1, however, since it does not comply with Subtitle D. These WDRs allow the Discharger to continue returning landfill leachate and condensate to the landfill, provided that compliance with the applicable liquids restrictions is maintained. See Discharge Prohibition A.3 and Discharge Specification B.4.

**LANDFILL DESIGN AND CONSTRUCTION**

**Existing Modules**

Module 1

- 44. Module 1 (referred to as Modules 1 and 2 in previous WDRs) was constructed in 1991 with a non-prescriptive, non-composite containment system, as follows:

<u>Component</u>	<u>Base Liner</u>	<u>Side Slopes</u>
Operations Layer	≥ 2' soil	
Filter Fabric	Geotextile <sup>1</sup>	----- <sup>2</sup>
LCRS	Geonet	
Base Liner	60-mil HDPE <sup>3</sup>	
Foundation Layer	≥ 6" compacted soil	

- 1. 10 oz/yd<sup>2</sup> non-woven fabric.
- 2. No LCRS on side slopes.
- 3. HDPE smooth on both sides.

The module predated Subtitle D regulations and was therefore not required to have a Subtitle D composite liner (see Finding 5). Further, previous WDRs (Order No. 91-021) included a finding that natural geologic factors at the site (e.g., groundwater separation, soil type) were sufficiently protective of groundwater such that a Chapter 15 containment system was not required (see Title 27, Section 20260). Although not required under regulation, a 60-mil HDPE base liner and geonet LCRS were included in the design for additional protection.

45. Module 1's LCRS included perforated HDPE collection pipe (3-inch laterals and 6-inch headers) in gravel-filled troughs overlying the blanket layer of filter fabric/geonet. The foundation layer was graded at a 1.4% cross slope toward a leachate collection sump on the western side of the module. The system was plumbed for gravity drainage to the sump, which was constructed with a single composite liner. The sump was installed with a manually operated pump and no automatic flow recordation. The sump was plumbed to a 3,000 gallon above ground storage tank (AGT) in the southwest corner of the module.

To ensure compliance with Discharge Specification B.5, Facility Specification C.4 requires that all manually operated LCRS sumps, including Module 1's, be upgraded to the automatic controls specified for new modules in Construction Specification D.2.d. Provision G.8.a requires that the Discharger submit a work plan and schedule for implementing these upgrades.

46. The interface between Modules 1 and 3 consisted of an anchor trench/berm approximately 3 feet in height.

### Module 3

47. Module 3 was constructed in 1995 with a Subtitle D-compliant, engineered alternative design (EAD) to the Title 27 prescriptive standard for an MSW landfill, approved under previous WDRs (Order No. 95-068), as follows, from top to bottom:

<u>Component</u>	<u>Base Liner</u>	<u>Side Slopes</u>
Operations Layer	≥ 2' soil	
Filter Fabric	Geotextile <sup>1</sup>	
LCRS	Geonet	
Base Liner	60-mil HDPE <sup>2</sup>	80-mil HDPE <sup>2</sup>
	GCL	
Foundation Layer	≥ 6" compacted soil	

1. 10 oz/yd<sup>2</sup> non-woven fabric.
2. HDPE single-side textured, placed smooth side up.

Module 3's LCRS was the same basic design as Module 4's (See Construction Specification D.2), but with a manually operated sump pump. Also, the collection sump for Module 3 was plumbed to the same AGT as Module 1. As with Module 1, Facility Specification C.4 requires that Module 3 sump be upgraded to the automatic controls specified for new modules in Construction Specification D.2.d, while Provision G.8.a requires submission of a work plan and schedule for implementing the required upgrade.

Module 4

48. A 17 April 2001 letter issued by the Board’s Executive Officer to solid waste landfill owners and operators required a liner performance appraisal for any liner system to be constructed after 1 January 2000, regardless of any liner expansion previously authorized in waste discharge requirements. The performance appraisals were required to include a demonstration that liner systems to be constructed will comply with Title 27 performance standards.
49. In response to the Executive Officer’s April 2001 letter, the Discharger submitted a 14 May 2002 performance demonstration report for Module 4 and future modules (*Liner Performance Demonstration for Module 4 and Future Modules at the North County Sanitary Landfill*, prepared by EMCON/OWT, Inc.), which (after revision in response to Board staff comment) was incorporated into a September 2002 *Report of Waste Discharge* (RWD). The RWD proposed an EAD to the Title 27 prescriptive standard Subtitle D composite liner for Module 4 and future modules (see Construction Specifications D.1 and D.2).
50. The results of the Module 4 performance demonstration are summarized in the following table:

Data Source	Leachate Head	Leak Rate <sup>1</sup>	LCRS Flow Rate <sup>2</sup>			
			Blanket		LCRS Piping	
	Base Liner		Gravel	Geonet	Lateral	Header
	Inches		Gal/acre/day		Gal/min	
Title 27	<12	0.81	---	---	56.6	145.8 <sup>3</sup>
Model	2.4	0.0007	7,295	4,660	28.3	72.9
Design	---	---	---	---	120	500

1. Assumed geomembrane defect rate of one hole (1 cm diameter each) per acre of liner placed based on best industry practice CQA.
2. Based on anticipated or “worst case” peak conditions (e.g., high precipitation, infiltration and runoff during initial waste filling operations) using Hydraulic Evaluation of Landfill Performance (HELP) Model, Version 3
3. Twice anticipated peak daily flow rates derived from HELP model.

The performance demonstration showed that the expected leachate head for the proposed design (2.4 inches) was within the maximum allowed under Title 27 for a MSW landfill (12 inches), and that the calculated leakage rate for the proposed design (0.0007 gal/acre/day) was much less than that for a Title 27 prescriptive MSW landfill (0.81 gal/acre/day). The LCRS lateral and header pipe capacities for the proposed design, 120 gal/min and 500 gal/min, respectively, also exceeded

Title 27 standards (56.2 gal/min and 145.8 gal/min, equal to twice the computed anticipated peak leachate flow rates). The results of site-specific unsaturated zone modeling (using V-Leach software) based on the above data indicated concentrations in groundwater below laboratory detection limits (i.e., < 1.0 µg/L) for all modeled constituents after 100 years.

51. Previous WDRs Order No. R5-2002-0219 approved the above EAD for Module 4 and future modules. Module 4 was constructed in 2004 consistent with the approved EAD and LCRS design. Construction of the module was documented in the November 2003 report *Final Construction Quality Assurance Report for Module 4 at the North County Recycling Center and Sanitary Landfill*, prepared by Vector Engineering, Inc.

#### Grading and Drainage

52. Modules 1 through 4 included the following grading features:
- a. 3H:1V interior excavation slopes;
  - b. 3H:1V exterior slopes;
  - c. Side slope benching every 50 vertical feet (20-foot wide benches).
53. Precipitation and drainage controls installed on the modules included:
- a. Top decks graded at 5% minimum for drainage.
  - b. Soil berms along top deck perimeter to direct runoff to corner drop inlets.
  - c. Overside (O/S) drains to capture top deck and side slope bench runoff.
  - d. Side slope benches graded at 2% with central "V" drains to intercept and convey runoff to O/S drains.
  - e. Soil berms and outboard ditch within 100-foot setback area along east, west, and south site perimeter to divert run-on and convey runoff to natural drains.
54. Runoff from the landfill is handled as follows:
- a. Inactive modules (i.e., M1, northern portion of M3) - runoff directed east into ISB ditch system.
  - b. Active modules (i.e., M4, southern portion of M3) - runoff directed south to temporary pond in future Module 5 and 6 excavation areas.
  - c. Future Module 5 and 6 areas - water from excavation area periodically pumped out to ditch that flows to ISB.
  - d. Future Modules 7 through 11 areas – Runoff from these areas either flows directly to the ISB ditch system, or collects in low areas and is pumped into the ISB ditch system as part of site maintenance. The ISB ditch system drains to ISB.

### Future Modules

55. Future module development will be in a sequential, counter-clockwise order. Each new module will be constructed in advance of filling the prior module to final refuse grade. The latter will occur before filling of the new module begins. Existing facilities in the eastern area of the site (e.g., MRF and gas wells SG-5, 6 and 7) will be decommissioned prior to development of that area.
56. The Discharger plans to construct future modules consistent with existing approvals for Module 4, or as separately proposed and approved for a new module. Specific designs and construction plans will be submitted for approval as each module is proposed for development. Construction Specifications D.1 through D.4 of these WDRs require that new modules be constructed in accordance with either the Title 27 prescriptive standard design or the approved EAD and performance demonstration for Module 4. Construction Specification D.4 further allows for the Executive Officer to approve less than significant changes to these designs, but requires Board approval of substantive changes.

### Vertical Expansion Plan

57. The JTD submitted by the Discharger incorporates the Discharger's Vertical Expansion Plan (VEP) for the landfill (December 2007 report *30% Design Report for Vertical Expansion of the North County Recycling Center and Sanitary Landfill*, prepared by Shaw Environmental, Inc.). Vertical expansion is proposed as a component of a revision of the Facility Operating Permit. The VEP would increase the height of the landfill modules as follows:

Module	Fill Elevation, Feet MSL <sup>1</sup>		Fill Thickness, Ft <sup>1, 2</sup>	
	Avg. Base	Previous Maximum	Proposed Maximum	
1	87	190	235	148
3	65	190	230 <sup>3</sup>	165
4	64	190	300	228
5 - 11	66	190	320	254

1. Maximum elevation includes cover material.
2. Maximum difference between proposed final grade and base elevation contours.
3. Fill height reduced from 260 feet MSL based on results of geotechnical analysis (see Finding 58).

Existing Modules 1 through 4 would be filled to the proposed maximum fill thickness (148 – 228 ft MSL) prior to filling at Module 5, which, in turn, would then be filled to its maximum thickness (254 ft MSL) before initiating operations in Module 6, and so on.

Existing grading plans for module slopes would be retained (e.g., 3H:1V interior and exterior, 20-foot wide benching every 50 vertical feet) and existing precipitation and drainage controls would be extended (and sized, as necessary) to handle the increased flows (and flow velocities) associated with the vertical expansion during a 100-year storm event. See Findings 52 and 53.

The VEP would increase the landfill capacity by approximately 72% from 20.9 million yd<sup>3</sup> to 35.9 million yd<sup>3</sup>, based on a May 2009 aerial survey. Based on the existing disposal volume (5.3 million yd<sup>3</sup>) and projected disposal rates, the landfill would reach capacity in the year 2055.

### Geotechnical Analysis

58. Geotechnical issues evaluated for the vertical expansion plan included (a) the potential for puncture of the geomembrane liner from the overlying LCRS gravel; (b) the ability of LCRS pipes to withstand increased loads (e.g., wall crushing, buckling and deflection); (c) leachate production and head buildup on liner; (d) LCRS geonet and pipe flow capacities; (e) LCRS sump design and capacity; leachate storage and disposal; and slope stability analysis. The results indicated the need for modification of the design of Module 3 and future modules, as follows:
- a. Existing Modules--Reduce maximum fill height of Module 3 to accommodate vertical loading limits of existing (4 inch, 15.5 SDR) LCRS piping. Other modules within design limits. See Discharge Specification B.1.c.
  - b. Future Modules--Cushion against liner puncture and use stronger LCRS piping to accommodate planned vertical loads. See Construction Specification D.4
59. Slope stability analysis identified the following critical cross sections:
- a. Module 1: N-S section of the northern slope.
  - b. Module 3: E-W section of the western slope.
  - c. Module 4: E-W section of the western slope.
  - d. Module 4 and future modules:
    - 1) N-S section of the southern slope (Modules 6 and 7) where the landfill toe buttress is minimal; and
    - 2) NE-SW section of the NE slope (future Module 11) where the base liner slopes toward the perimeter.
  - e. Interim slopes: N-S section of the central part of the landfill after completion of Module 10, before construction of Module 11.
60. Static slope stability analysis performed on the above critical cross sections (using Slide software developed by Rocscience, Inc.) employed two-dimensional limit equilibrium analysis and the method of slices. Both force and moment equilibrium

were considered using the Morgenstern-Price method. Critical interface failure envelopes were developed for the modules based on the results of laboratory shear testing (up to maximum expected loads) and other factors. Computed static factors of safety ranged from 1.5 (Module 1) to 2.0 (Module 3), while computed yield accelerations ranged from 0.055g (Module 4) to 0.11g (Modules 1 and 3), indicating that all critical slopes would be stable under static conditions. Dynamic slope stability analysis was also conducted based on both probabilistic and deterministic approaches that yielded the following sets of conditions:

- a. Probabilistic Approach
  - 1) Spectral Period < 0.4 Seconds - MPE = 6.4 at 54 km, PGA = 0.098g (Central Valley Coast Range Fault System).
  - 2) Spectral Period > 0.4 Seconds - MPE = 8.0 at 126 km, PGA = 0.085g (San Andreas Fault System)
- b. Deterministic Approach
  - 1) Small earthquake – MPE < 6.5, PGA = 0.115

Calculated dynamic factors of safety ranged from 1.04 (interim slope) to 1.43 (Modules 4 through 11). Since all dynamic factors of safety were below the 1.5 minimum specified under Title 27, Section 21750(f)(5)(D), a more rigorous analysis of the data (i.e., deformation analysis) was performed using the Makdisi-Seed method (1977). The maximum calculated displacement by this method was 0.17 inches (interim slope), well within the maximum specified under Title 27 for seismic slope stability (6 inches).

### **CLOSURE AND POSTCLOSURE MAINTENANCE**

61. As described in the PCP/PCMP (Appendix B, JTD), landfill closure activities will include grading and cover installation; improvements to precipitation and drainage controls; additional/modified leachate and LFG control facilities; installation of LFG and groundwater monitoring systems; removal of structures and other closure-related activities.
  - a. After reaching final refuse elevations, the landfill will be contiguously graded as a single unit. Landfill grades will be generally the same as those for the individual modules described in Finding 52 (e.g., 5% minimum slopes on top deck, 3H:1V maximum exterior slopes, benching).
  - b. Landfill precipitation and drainage controls will also be generally the same as those for the individual modules described in Findings 52 through 53 (e.g., top deck grading and berms, bench drains, O/S drains etc.), except as follows:
    - 1) There will be no ISB. Runoff from the eastern fill area will be discharged via the perimeter drain to the wetlands mitigation area and South Paddy Creek in the northern part of the site.

- 2) Runoff from the western fill area (i.e., Modules 1 through 6) will be directed to the outboard ditch and discharged offsite via culverts previously noted (see Finding 18 and Attachment B).
62. The Discharger may propose partial landfill closure upon reaching final elevations on some, but not all modules. In such case, the Discharger will submit a partial FCPMP(s) for the modules proposed for closure in accordance with Title 27 requirements.
63. The PCP/PCMP includes a conceptual plan for the landfill cover consisting of GCL in lieu of one foot of compacted clay for the LHC layer, an engineered alternative to the prescriptive design under Title 27. The plan states that demonstration for any such EAD proposal will be included in the Final Closure Plan when it is submitted. Construction Specification D.10 requires that any such cover proposal address the requirements of Title 27 and Subtitle D, including the requirement that the cover not create a “bathtub effect”.
64. Landfill postclosure maintenance/monitoring activities will include final cover maintenance; leachate management; maintenance and monitoring of LFG facilities; groundwater, vadose zone, and surface water monitoring; maintenance of precipitation and drainage controls; and other postclosure related activities.

## FINANCIAL ASSURANCES

### Closure

65. The Discharger is required to demonstrate financial assurances (F/As) for closure to the California Integrated Waste Management Board (CIWMB) pursuant to Title 27, Section 22205, since the landfill operated after January 1, 1988. The total estimated cost of closure provided in the PCP/PCMP after vertical expansion of the landfill is \$14,006,200 in 2008 dollars. The Discharger has established an enterprise fund account (San Joaquin County Resolution No. R-90-1190) funded from solid waste revenues as the mechanism for landfill closure F/A.
66. Section 22206 of Title 27 requires that the closure F/A demonstration be, at a minimum, in the amount of the current closure cost estimate. The latter is the minimum enterprise account funding balance required by the CIWMB under Section 22225 of Title 27. The following table summarizes the status of closure F/A provided to the CIWMB as of a September 2008 and F/A demonstration parameters for vertical expansion of the landfill:

Parameter	Closure F/A Demonstration	
	Before Vertical Expansion <sup>1</sup>	After Vertical Expansion <sup>2</sup>
Landfill Capacity (yd <sup>3</sup> )	20,900,000	36,900,000

Closure Cost Estimate (\$)²	5,608,551	14,006,200
Cumulative Filled (yd³)	5,240,928	---³
% Capacity	25.3	---³
Minimum Required Fund Balance (\$)	819,768	---³
Actual Fund Balance (\$)	1,715,813	---³

1. Based on September 2008 demonstration to CIWMB.
2. After issuance of Solid Waste Facilities Permit by LEA authorizing vertical expansion.
3. As updated annually in closure F/A demonstration to CIWMB.

Provision H.5.a of these WDRs requires that the Discharger maintain closure financial assurances in at least the amount of the minimum balance required by the CIWMB.

#### Postclosure

67. The Discharger is required to demonstrate F/A for postclosure maintenance to the CIWMB pursuant to Section 22212(b), since the landfill operated after January 1, 1988. The total estimated annual cost for postclosure maintenance and monitoring provided in the FCPMP after vertical expansion of the landfill, including 20% contingency, is approximately \$596,300 in 2008 dollars (see Finding 64). The estimated 30-year cost for landfill postclosure activities, including 20% contingency, is \$17,859,000 in 2008 dollars. Provision E.25.b requires that the Discharger provide updated cost estimates, as necessary under these WDRs, for postclosure maintenance and monitoring, while Provision H.5.b requires that the Discharger provide and maintain updated F/As to the CIWMB in the amount of such updated cost estimates, as approved by the Regional Water Board.
68. In 1993, the CIWMB approved a Pledge of Revenue Agreement (*No. 93-605*) proposed by the Discharger as the postclosure F/A mechanism per Section 22228 to cover the estimated annual cost of landfill postclosure maintenance and monitoring. This agreement is still in effect.
69. The Discharger is required to demonstrate F/A for third party corrective action to the CIWMB pursuant to Title 27 Section 22220(b), since the landfill operated after July 1, 1991. Title 27 Section 22221(a) requires that such corrective action funding be sufficient to address a known or reasonably foreseeable release, as approved by the Regional Water Board. In October 2008, Regional Water Board staff approved an estimate of \$1,520,265 in 2008 dollars submitted by the Discharger for corrective action F/As, based on costs necessary to address VOC impacts to groundwater from a reasonably foreseeable release of LFG from the landfill. In January 2009, the CIWMB approved the corrective action F/As mechanism (a Pledge of Revenue) provided by the Discharger.

Provision E.25.c requires that the Discharger provide an updated cost estimate, as necessary under these WDRs, for corrective action, while Provision H.5.c requires that the Discharger provide and maintain updated F/As to the CIWMB in the amount of the updated cost estimate, as approved by the Regional Water Board. Provision G.11 further requires that initially, and at least every five years thereafter, the Discharger submit a report to the Regional Water Board's Executive Officer as to the ongoing viability of F/A instruments and, on an annual basis, evidence of acceptance by the CIWMB of its required annual demonstration under Title 27.

### **CEQA AND OTHER CONSIDERATIONS**

70. The action to revise the WDRs is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with Title 14, CCR Section 15301 for existing facilities.
71. The San Joaquin County Board of Supervisors certified a final environmental impact report (EIR) addressing plans for vertical expansion of the landfill (*San Joaquin County Department of Public Works, Final Environmental Impact Report for North County Recycling Center and Sanitary Landfill*, prepared by Jones & Stokes; State Clearinghouse No. 2006062113) on 5 December 2006. The San Joaquin County Clerk filed a Notice of Determination on 11 December 2006 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 report found that the vertical expansion project would not have a significant impact on landfill waste containment facilities and controls nor on water quality provided compliance with applicable state and federal regulations and permit requirements is maintained (i.e., Subtitle D, Title 27, NPDES storm water, landfill WDRs). These WDRs implement such regulations. See Finding 74.
72. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the Regional Water Board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports." The monitoring and reporting program required by this Order (MRP No. R5-2010-0016, attached) is necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

73. On 17 June 1993 (and as amended 21 July 2005), the State Water Resources Control Board adopted Resolution No. 93-62 implementing a State Policy for the construction, monitoring, and operation of MSW landfills that is consistent with the federal MSW regulations promulgated under Title 40, Code of Federal Regulations, Part 258 (Subtitle D). Title 27 incorporates *State Water Resources Control Board (SWRCB) Resolution No. 93-62*.
74. This Order implements:
  - a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*;
  - b. Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;
  - c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and
  - d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993 and amended 21 July 2005.

### PROCEDURAL REQUIREMENTS

75. 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.
76. The 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.
77. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
78. Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with CWC Section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of the Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality)

or will be provided upon request.

**IT IS HEREBY ORDERED**, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 2002-0219 is rescinded, and that the San Joaquin County Department of Public Works, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted there under, shall comply with the following:

**A. DISCHARGE PROHIBITIONS**

1. With the exception of TWW handled in accordance with this Order, 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, Section 20164.
2. The discharge of wastes outside of a Unit (or portions of a Unit specifically designed for their containment) is prohibited.
3. The following discharges of leachate and/or gas condensate liquids to the landfill are prohibited:
  - a. Liquids not generated by the landfill.
  - b. Discharges to Module 1 or any future module or unit not constructed with a Subtitle D composite liner (or approved EAD) and an LCRS.
  - c. Any discharge that could result in leachate seeps, excessive head on the liner, or leachate runoff from the unit.
  - d. Wet cell operations.
4. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
5. The discharge of treated or untreated wastewater or groundwater to any surface water or any surface water drainage course is prohibited without a National Pollutant Discharge Elimination System (NPDES) permit authorizing the discharge.
6. The landfill shall not cause pollution or a nuisance, as defined by the California Water Code, Section 13050, and shall not cause degradation of any water supply.
7. The discharge shall not cause the release of pollutants, or waste constituents in a manner which causes a condition of nuisance, degradation, contamination, or pollution of groundwater, unsaturated zone, or surface water

to occur, as indicated by the most appropriate statistical or nonstatistical data analysis method and retest method listed in this Order.

8. 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.
9. TWW shall not be discharged to landfill modules that are leaking. Upon confirmation of a leachate release (or of a LFG release containing one or more TWW constituents) from the landfill to the unsaturated zone and/or groundwater, all TWW discharges to that module shall be ceased until such time as corrective action measures result in cessation of the leak/release. Such cessation of waste discharge shall be noted in solid waste reporting under MRP Reporting Requirement H.2.a.ii. (See also Discharge Specifications B.8 and B.10.)
10. The waste discharge prohibitions herein shall supersede any conflicting or contradictory provisions in the April 2000 Standard Provisions and Reporting Requirements (SPRR) applicable to waste discharge to an active or closed landfill. See also SPRR Section I.E.

## **B. DISCHARGE SPECIFICATIONS**

1. The discharge of solid waste to the landfill shall be limited to the following:
  - a. The existing landfill footprint (i.e., Modules 1, 3, and/or 4);
  - b. Lateral expansions of the existing footprint within the unit area constructed with a Subtitle D composite-liner and LCRS or approved EADs per under Construction Specifications D.1 through D.3; and;
  - c. Vertical expansion over B.1.a and/or B.1.b up to the maximum fill elevations listed in Finding 57 of this Order, including cover material, as supported by geotechnical analysis (Findings 58 and 59) and approved by the Local Enforcement Agency.
2. The discharge shall remain within the designated disposal area at all times.
3. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
4. Consistent with liquids restrictions in Title 27, Section 20340(g) and Subtitle D (40 CFR 258.28), the return of landfill leachate and/or LFG condensate back to the landfill shall be limited to those modules constructed with a Subtitle D composite liner (or equivalent approved EAD) and LCRS (i.e., Modules 3, 4

and any lateral expansions constructed in accordance with Construction Specifications D.1 through D.5). See Discharge Specification VI.E, SPRR.

5. The LCRS sump shall be designed and operated so as to prevent/minimize both (1) leachate head build-up on the baseliner beyond the limits of the sump; and (2) leachate storage within the sump. See also Construction Specifications VIII.O and Q, SPRR.
6. Waste discharged within the initial two feet of the unit, or any lateral expansion of the unit, as measured from the top of the operations layer over the liner system, shall consist only of "packer waste"; that is, waste free of objects that could pose a danger of physical damage to the liner system.
7. The discharge of TWW to the landfill may include, but is not limited to, waste wood that has been treated with chromated copper arsenate (CCA), pentachlorophenol, creosote, acid copper chromate (ACC), ammoniacal copper arsenate (ACA), ammoniacal copper zinc arsenate (ACZA), or chromated zinc chloride (CZC).
8. The discharge of TWW to the landfill shall be limited to modules equipped with a Subtitle D composite liner and LCRS, or approved EADs, as prescribed in Construction Specifications D.1 through D.4. (TWW may therefore be discharged to modules M3, M4 and future Subtitle D-compliant modules, but shall not be discharged to module M1.)
9. TWW must be managed to ensure consistency with CHSC Sections 25143.1.5 and 25150.7.
10. Except as noted in B.10.b below, the Discharger shall comply with the alternative management standards applicable to TWW set forth in CCR, title 22, chapter 34, Section 67386.11 (copy attached to Information Sheet), as prescribed under these WDRs, or other State or Local permit relevant to TWW operations, as follows:
  - a. Alternative Management Standards
    - (1) Discharge Specification B.8 above.
    - (2) TWW handling at the landfill shall be in accordance with the prohibitions of Section 67386.3 (see Information Sheet, Attachment I).
    - (3) Ensure that any management of the TWW at the landfill prior to disposal complies with CCR, title 22, chapter 34.
    - (4) Discharge Prohibition A.9. The landfill shall notify the Department of Toxic Substances Control (DTSC) and Regional Water Board of the following:

- i. Cessation TWW discharges to any module from which such a leak or release has been confirmed and;
- ii. Resumption of TWW discharges to any module where corrective action measures result in cessation of the leak/release (e.g., where sufficient repairs to the containment system have been implemented and the Executive Officer has approved suspension or termination of corrective action measures under Monitoring Specification E.32).

(5) Handle TWW in a manner consistent with all applicable requirements of the California Occupational Safety and Health Act of 1973, including all rules, regulations, and orders relating to hazardous waste.

b. Limited Exemption

In accordance with CHSC Section 25143.1.5(b), TWW removed from electric, gas or telephone service (e.g., treated poles, pilings, posts) shall be exempt from all of the above alternative management standards except B.10.a(1), provided that it complies with this standard. See also Discharge Specification B.9.

**C. FACILITY SPECIFICATIONS**

1. The Discharger shall immediately notify the Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures. See also Facility Specification VII.D, SPRR.
2. Water and leachate used for facility maintenance shall be limited to the minimum amount necessary for dust control and construction. Any such application of leachate shall be subject to restrictions of this Order applicable to liquid wastes (see Discharge Prohibition A.3 and Discharge Specification B.1).
3. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with this Order, including, but not limited to, the landfill cover, cover grade, containment system, leachate controls, precipitation and drainage controls, monitoring wells, gas extraction system, and related landfill facilities.
4. To reduce the potential for a leachate release and ensure that all LCRS sumps are operated in compliance with Discharge Specification B.5, all modules with manually-operated LCRS sumps (i.e., Modules 1 and 3) shall, **within two years** of adoption of this Order, be upgraded to meet the sump pump specifications described in Construction Specification D.2.d (i.e., automatic

sump pump, alarms, flow meter, and recordation device). See Provision G.8.a.

5. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled as needed to prevent adverse health effects, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
6. All wells within 500 feet of the waste management units shall have sanitary seals that meet the requirements of the San Joaquin County Environmental Health Department or shall be properly abandoned. A record of the sealing and/or abandonment of such wells shall be sent to the Regional Water Board and to the State Department of Water Resources.
7. The Discharger shall maintain a copy of this Order and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.

**D. CONSTRUCTION SPECIFICATIONS**

1. Lateral expansions of the existing Unit (i.e., new modules) shall be constructed in accordance with one of the following composite liner designs:
  - a. Title 27 Prescriptive Standard – Subtitle D Composite Liner and LCRS (top to bottom):

<u>Component</u>	<u>Base Liner</u>	<u>Side Slopes</u>
Operations Layer	Soil	
LCRS	1' gravel drainage blanket	
Base Liner	40 mil synthetic FML or 60-mil HDPE <sup>1</sup>	
	≥ 2' compacted clay soil ( $k < 1 \times 10^{-7}$ cm/sec) <sup>2</sup>	
Foundation Layer	≥ 1' compacted soil <sup>3</sup>	

1. In direct and uniform contact with the underlying clay soil layer.
2. Minimum relative compaction of 90%.
3. See Construction Specification D.3.

- b. Title 27 Engineered Alternative Design (EAD) – Approved per Module 4 Performance Demo (from top to bottom):

<u>Component</u>	<u>Base Liner</u>	<u>Side Slopes</u>
Operations Layer	≥ 2' soil	
Filter Fabric	Geotextile <sup>1</sup>	Geocomposite <sup>2</sup>

LCRS	¾-foot gravel drain layer
Base Liner	60-mil HDPE <sup>3</sup>
	GCL <sup>4</sup>
Foundation Layer	≥ 1' compacted subgrade ≥ 1/2'

1. 8 oz/yd<sup>2</sup> non-woven fabric.
2. Consists of geonet with overlying and underlying filter fabric.
3. Textured on both sides.
4. Shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep, shear, and bearing capacity.

2. Lateral expansions of the existing Unit (i.e., new modules) shall be constructed in accordance with the following LCRS design:
  - a. Foundation layer - graded at 2.2% cross slope toward collection sump.
  - b. Blanket layer –
    - 1) ≥ ¾-foot thick layer of rounded gravel over base liner
    - 2) Geocomposite (or equivalent combination of geonet and filter fabric) over slide slopes.
  - c. French drain – perforated HDPE pipes installed in gravel filled troughs above the base liner, including the following:
    - 1) 4-inch diameter laterals installed at 1% minimum slope. Laterals shall be equipped pipe risers at each end for inspection and cleaning, if necessary, and a wire rope to enable video camera inspection of the lines.
    - 2) 6-inch diameter header pipe at a minimum 2% slope.
  - d. Collection Sump – The collection sump shall be constructed as follows, from top to bottom:

	<u>Component</u>	<u>Specification</u>
Tank <sup>1</sup>	Gravel	Sump gravel
	Volume	
	Pump	Automatic with high and low alarms, flow meter
Filter Fabric		Geotextile <sup>2</sup>
Primary Composite Liner		60-mil HDPE/GCL
Secondary LCRS <sup>3</sup>		Geonet

Secondary Composite Liner	60-mil HDPE/GCL
Foundation Layer	≥ 1' compacted subgrade

1. Sump shall be equipped with an automatic pump, flow meter, and recordation device, allowing instantaneous measurement of rate and volumes removed. High and low liquid level sensors and associated alarms shall also be included in design.
  2. 8 oz/yd<sup>2</sup> non-woven fabric.
  3. 12-inch HDPE riser included for leachate monitoring and removal.
3. The foundation layer in the above composite liner designs (D.2.a and D.2.b) shall be constructed as follows:
- a. Project CQA shall include preparation of the foundation surface so as to minimize the risk of liner puncture and leak detection testing. In both of the above designs, the foundation layer shall consist of select fine-grained soil materials compacted as follows:
    - 1) In lifts of 6 inches or less; and
    - 2) To 90% of maximum dry density at 0 to 4% wet of optimum moisture content, in accordance with the approved CQA plan; and
    - 3) To a minimum hydraulic conductivity of  $1 \times 10^{-5}$  cm/sec; or
    - 4) In accordance with the following gradation criteria:
      - i. A maximum size of 3/8-inch; and
      - ii. At least 30% of the material, by dry weight, passing the No. 200 U.S. Standard sieve; and
      - iii. A gradation series (i.e., well-graded) that is amenable to compaction.
  - b. Additionally, for the EAD (D.2.b), the subgrade for the bottom and side slopes shall be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a smooth surface free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.
4. The Discharger may propose changes to the liner system design prior to construction provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design, including, but not necessarily limited to, changes affecting the landfill containment system; LCRS; precipitation and drainage controls; final cover; and/or slope stability shall require re-evaluation as an EAD and approval by the Board.

5. The design and construction of all landfill module LCRS and containment system components shall incorporate adequate factors of safety to handle the increased vertical loads associated with vertical expansion. Consistent with geotechnical analysis of the proposed EAD (see Finding 58), the construction specifications for future modules shall incorporate the following recommendations to prevent damage to the LCRS and liner from vertical loading:
  - a. Protection From Liner Puncture -- Use of 3/8-inch diameter, rounded gravel in the LCRS blanket layer and/or cushion with geotextile (16-oz/yd<sup>2</sup>).
  - b. Protection From LCRS Pipe Failure (e.g., buckling, deflection, rupture) -- Use thicker (i.e., 13.5 SDR) perforated HDPE pipe in French drain. Also use select gravel bedding and backfill in LCRS troughs

Construction specifications in addition to, or in lieu of, the above may be incorporated into the design provided that the Discharger demonstrates, to the satisfaction of the Executive Officer, that the proposed construction specifications will not result in (1) Reduced factors of safety and/or protection associated with the design; and (2) Any change inconsistent or incompatible with Construction Specifications D.1 through D.4 above.

6. The Discharger shall, **at least 90 days prior to construction of new modules** or units, submit for Executive Officer review and approval the following:
  - a. A construction design report, including plans, drawings and a construction quality assurance (CQA) plan per Section 20324 of Title 27;
  - b. A geotechnical evaluation of the area soils, evaluating their use as the foundation layer;
  - c. A proposed 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, Section 20415(d); and
  - d. A revised groundwater detection monitoring program, as necessary, to monitor the new module so as to maintain compliance with Title 27.
7. Construction shall proceed only after all applicable CQA plans have been approved by Executive Officer.
8. Following the completion of construction of a lateral expansion of a unit, and prior to discharge onto the newly constructed liner system, final documentation required under Section 20324(d)(1)(C) of Title 27 shall be submitted to the Executive Officer for review and approval. Such documentation shall contain sufficient information and test results to verify that construction was in

accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27. A registered civil engineer or a certified engineering geologist shall certify the report.

9. A third party independent of both the Discharger and the construction contractor shall perform all of the CQA monitoring and testing during the construction of a liner system.
10. Any proposal for final cover included in the FCP shall meet the requirements of Title 27 and Subtitle D, including the requirement that that the permeability of the LHC layer be no greater than that of the base liner or underlying natural geologic materials (whichever is less) in order to prevent a "bathtub effect". See Section 21090(a)(2), Title 27; Section 258.60(a)(1), Subtitle D.
11. Closure or partial closure of the unit shall proceed only after submission of a FCP meeting the requirements of Title 27 to, and adoption of closure WDR by, the Regional Water Board.
12. LFG extraction facilities necessary to control LFG shall be installed as each new module is constructed and developed. New modules shall be tied into the existing LFG extraction system in order to help control LFG.

#### **E. MONITORING SPECIFICATIONS**

1. The Discharger shall comply with the background and detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with MRP No. R5-2010-0016. Background monitoring shall be conducted for the purpose of establishing and updating concentration limits as part of the Water Quality Protection Standard (WQPS) per Title 27 Section 20400(a). Detection monitoring shall be conducted for the purpose of detecting a release from the unit (or from individual modules in the unit) per Section 20420.
2. In the event of a release from the unit, the Discharger shall comply with the evaluation and corrective action monitoring provisions of Title 27 and MRP No. R5-2010-0016. Evaluation monitoring shall be conducted for the purpose of assessing the nature and extent of the release and designing corrective action measures. Corrective action monitoring shall be conducted for, and for assessing the progress of corrective action in returning to compliance with the WQPS (Title 27 Section 20430(d)).
3. The Discharger shall provide Board staff a minimum of one week notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum 48 hour notification prior

to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.

4. The Discharger shall comply with the WQPS as specified in MRP No. R5-2010-0016 and the SPRR.
5. The concentrations of the COCs in waters passing the Point of Compliance shall not exceed concentration limits established in accordance with MRP No. R5-2010-0016. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the WQPS using procedures specified in the Section 20415(e) of Title 27.
6. The Discharger shall maintain and implement a Sample Collection and Analysis Plan (SCANP) that includes the following elements:
  - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
  - b. Sample preservation information and shipment procedures;
  - c. Sample analytical methods and procedures; Sample quality assurance/quality control (QA/QC) procedures; and
  - d. Chain of custody control.

The SCANP shall also be consistent with Monitoring Specifications E.7 through E.15 below.

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. 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
  - a. Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series),
  - b. Test Methods for Evaluating Solid Waste (SW-846, latest edition), and;
  - c. Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved SCANP.
9. Specific methods of collection and analysis must be identified. 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 by both 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. **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.
15. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation

limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (e.g., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

### **Monitoring Data Analysis**

16. All monitoring data analysis methods shall be consistent with the performance standards specified in Section 20415(e)(9) and sampling standards specified in Section 20415(e)(12).
17. Any PQL validated pursuant to 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. Any Section 20415(e)(7) technical report submitted by the Discharger shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy.
18. The statistical method shall account for data below the PQL with one or more statistical procedures that are protective of human health and the environment.
  - a. For any given constituent monitored at a background or down gradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (i.e., a trace detection) shall be identified and used in appropriate statistical or nonstatistical tests.
  - b. 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".

### **Concentration Limits**

19. Concentration limits (CLs) for monitoring shall be developed consistent with Monitoring Specifications E.20 through E.23 below.
20. For inorganic COCs for which at least 10% of the data from background samples equal or exceed their respective MDL (i.e., naturally occurring COCs), the Discharger shall use one of the following statistical data analysis methods for determination of CLs and detection of a release:
  - a. Upper Tolerance or Prediction Limit (e.g., Parametric or Gamma);

- b. Control chart (e.g., CUSUM);
  - c. Analysis of Variance (ANOVA); and/or
  - d. Other Methods
    - 1) Any statistical method per USEPA's Unified Guidance (2009);
    - 2) Any alternative statistical method authorized under Section 20415(e)(8) and approved by the Executive Officer under Section 20415(e)(7).
21. For **inorganic COCs** for which less than 10% of the data from background samples equal or exceed their respective MDL (i.e., nonstatistical COCs), including those not detected in background, the CL shall be the PQL.
22. CLs for **inorganic COCs** shall be periodically updated, as necessary, to reflect current background conditions.
- a. Statistical CLs
    - 1) Background data shall be screened for trends prior to calculating CLs to ensure that the data represents a single statistical population (i.e., one that does not show appreciable variation per Section 20415(e)(10)). If a significant trend is identified that reflects changes in background conditions, data prior to development of the trend shall not be included in updating CLs. Otherwise CLs shall include prior historical data.
    - 2) Statistical CLs shall also take into account any seasonality in the data.
    - 3) Borderline statistical CLs (e.g., those for which less than 20% of the data from background samples equal or exceed their respective MDL) should be periodically rechecked per E.20 to verify that they are still statistical.
  - b. Nonstatistical CLs
    - Borderline nonstatistical CLs (e.g., those for which almost 10% of the data from background samples equal or exceed their respective MDL) should be periodically rechecked per E.21 to verify that they are still nonstatistical.
23. For VOCs and all other organic COCs, the CL shall be the MDL.

#### Release Triggers

24. Any inorganic COC (statistical or nonstatistical) that exceeds its CL shall provide a preliminary indication [or, for a retest, measurably significant evidence] of a release at that monitoring point.
25. For VOCs and other organic COCs, the trigger for detection of a release shall be as follows:

- a. From the COC or monitoring parameter list, identify each analyte in the current sample that exceeds its respective MDL. The Discharger shall conclude that the exceedance provides a preliminary indication [or, for a retest, provides measurably significant evidence] of a release (existing or new) at that monitoring point, if either:
    - 1) The data contain two or more analytes that equal or exceed their respective MDLs; or
    - 2) The data contain one analyte that equals or exceeds its PQL.
26. If the above statistical or non-statistical trigger procedures used for monitoring data analysis for a given media provide a preliminary indication of a release (i.e., new release or a previously unconfirmed constituent of the existing release) at a given monitoring point, the Discharger shall immediately notify Regional Water Board staff by phone or e-mail of a preliminary indication of a release, and, within 30 days of such indication, conduct confirmation (retest) sampling, subject to the following.
- a. Exceedances for constituents that have been previously confirmed as part of a release at a given monitoring point, including regularly-detected and sporadically detected (e.g., as a result of seasonal or lateral fluctuations in the plume) COCs, shall be considered confirmed without notification and retest.
  - b. Exceedances for any constituent for which the Discharger fails to conduct a retest will be considered confirmed without retest unless and until the Discharger demonstrates its absence through subsequent monitoring per Section 20420(k)(7).

#### Discrete Retest

27. Confirmation sampling shall consist of taking two new (retest) samples from the monitoring point where the release is preliminarily indicated. 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.
- a. As soon as the retest data are available, the Discharger shall apply the same tests [i.e., E.24 for inorganic COCs or E.25 for organic COCs], to separately analyze each of the two suites of retest data at the monitoring point where the release is preliminarily indicated.
  - b. If either (or both) of the retest samples trips the applicable trigger above, then the Discharger shall conclude that there is measurably significant evidence of a release at that monitoring point for the analyte(s) indicated in the validating retest sample(s) and shall:
    - 1) Immediately notify the Regional Water Board about the constituent verified to be present at the monitoring point, and follow up with written

notification submitted by certified mail within seven days of validation;  
and

2) Proceed in accordance with E.28 and/or E.29, below, as applicable.

28. Exceedances that the Discharger demonstrates per Section 20420(k)(7) are the result of sample corruption, laboratory interferences, error, natural variation in the water quality, statistical evaluation, or other cause not associated with a release from the unit shall not provide a preliminary indication of a release, or, in the case of a discrete retest, confirm a release. Retesting may be necessary, however, to make such demonstration or, such as in the case of error or laboratory interferences, to obtain valid monitoring data.
29. Any COC confirmed by retest as part of a release (new or existing) shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.
30. Notwithstanding the results of preliminary and/or confirmation testing under E.26 and E.27 above, the Discharger shall consider whether there is significant physical evidence of a release from the Unit per Title 27, Section 20385(a)(3), which states:

*Significant physical evidence of a release includes unexplained volumetric changes in surface impoundments, unexplained stress in biological communities, unexplained changes in soil characteristics, visible signs of leachate migration, and unexplained water table mounding beneath or adjacent to the Unit and any other change to the environment that could reasonably be expected to be the result of a release from the Unit. . .*

If the Discharger determines that there is either measurably significant or physically significant evidence of a release from the Unit at any monitoring point, the Discharger shall immediately implement the *Response to a Release* requirements contained in Section XI of the SPRR.

#### Corrective Action Progress

31. In the event of a release, the data analysis methods shall also include trend analysis; an evaluation of the water chemistry; and preparation of contaminant contour plots to monitor the nature of the release and effectiveness of corrective action measures, as specified in the MRP.
32. Prior to termination of corrective action measures required under Section 20430(c), the discharger shall demonstrate, pursuant to Section 20430(f), and 40 CFR 258.58(e)(2) for an MSW landfill, that the constituents of the release have been reduced to levels below concentration limits throughout the entire

zone affected by the release. During this “proof period”, the Discharger shall demonstrate that:

- a. The concentration of each constituent in each sample from each monitoring point remained at or below its concentration limit for at least three years, beginning immediately after the suspension of corrective action measures; and
- b. The individual sampling events for each monitoring point must have been evenly distributed throughout the proof period and have consisted of at least four sampling events per year per monitoring point (i.e., quarterly monitoring).
- c. At the end of the proof period, a single data analysis method (statistical or nonstatistical, as appropriate) shall be used for each monitoring parameter at each monitoring point to determine whether that parameter has been reduced to levels at or below concentration limits at that monitoring point.

The Discharger shall notify the Board and obtain Executive Officer approval prior to (1) suspending corrective action measures prior to making the above demonstration; and (2) terminating corrective action measures after making the above demonstration.

33. Any proposal for concentration limits greater than background (CLGBs) shall be accompanied by the requisite demonstration under Section 20400(c) (i.e., that it is technologically or economically infeasible to achieve the background value for that constituent and that the constituent will not pose a substantial present or potential hazard to human health or the environment). Approval of CLGBs shall require approval of revised WDRs by the Regional Water Board.

## **F. REPORTING REQUIREMENTS**

1. The Discharger shall comply with the reporting requirements specified in this Order, MRP No. R5-2010-0016, and the SPRR.
2. The Discharger shall immediately notify the Regional Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
3. If monitoring reveals substantial or progressive increases of leachate generation above the design leachate flow by the Unit or portion of the 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 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.

4. 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 Water Board office by telephone as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within two weeks. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
5. The Discharger shall report by telephone any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Regional Water Board within seven days, containing at least the following information:
  - a. A map showing the location(s) of seepage;
  - b. An estimate of the flow rate;
  - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
  - d. Verification that samples have been submitted for analyses of the COCs and Monitoring Parameters, and an estimated date that the results will be submitted to the Regional Water Board; and
  - e. Corrective measures underway or proposed, and corresponding time schedule.
6. All reports and transmittal letters shall be signed by persons identified below:
  - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
  - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
  - d. A duly authorized representative of a person designated in a, b or c above if;
    - 1) The authorization is made in writing by a person described in a, b, or c of this provision;
    - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit,

superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

- 3) The written authorization is submitted to the Regional Water Board.
  - i. 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 notify the Regional Water Board in writing of any proposed change in ownership or responsibility for construction or operation of the landfill. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Water Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory requirements contained in Reporting Requirement G.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Water Board.
8. The discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

California Regional Water Quality Control Board  
Central Valley Region  
11020 Sun Center Drive, Suite 200  
Rancho Cordova, CA 95670

(or the current address if the office relocates)
9. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with MRP No.

R5-2010-0016, as required by California Water Code sections 13750 through 13755 of the California Water Code.

## **G. 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 the MRP No. R5-2010-0016, which is attached to and made part of this order. A violation of the MRP is a violation of these waste discharge requirements.
4. The Discharger shall comply with the Standard Provisions and Reporting Requirements (SPRR), dated April 2000, which are hereby incorporated into this Order. The SPRR contain important provisions and requirements with which the Discharger must comply. A violation of any of the SPRR is a violation of these waste discharge requirements.
5. 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.
6. 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.
7. If the Discharger or Regional Water Board determines that the corrective action program is not adequate (i.e., does not satisfy the provisions of Section 20430), the Discharger shall, within 90 days of making the determination, or of receiving written notification from the Regional Water Board of such determination, submit an amended report of waste discharge (RWD) to make appropriate changes to the program. The amended RWD shall include the following:
  - a. A discussion as to why existing corrective action measures have been ineffective or insufficient.
  - b. A revised evaluation monitoring plan if necessary to further assess the

- nature and extent of the release.
- c. A discussion of corrective action needs and options.
  - d. Proposed additional corrective action measures, as necessary.
  - e. A plan to monitor the progress of corrective action measures consistent with the MRP.
  - f. Cost estimates for implementing additional corrective action, including monitoring.
  - g. An implementation schedule.
8. Consistent with required facility monitoring under MRP Section B, the Discharger shall investigate the following monitoring facilities and, by **31 March 2010**, submit a facility status report that includes the items identified below:
- a. LCRS Sumps
    - 1) A report describing current condition and operational controls.
    - 2) A work plan and schedule for upgrading manually operated sumps (i.e., Modules 1 and 3), as necessary, to comply with Facility Specification C.4 of this Order.
  - b. Lysimeters
    - 1) A report as to condition and operational status, including, but not limited to, those lysimeters typically reported as dry (e.g., VZs-1 through -3).
    - 2) A work plan and schedule for repair or replacement of any lysimeter found not to be in good working order.
  - c. Monitoring Well G-2
    - 1) A report as to condition and operational status, including monitoring history of the well.
    - 2) A work plan and schedule for repair or replacement of the well, as necessary.
9. By **30 April 2010**, the Discharger shall submit for approval an updated preliminary closure and postclosure maintenance plan (PCPMP) to reflect current operations (including vertical expansion plans, if approved by LEA) and requirements under these WDRs, including MRP No. R5-2010-0016. The PCMP shall meet the requirements of Title 27 Section 21769(b) applicable to an active landfill. The updated plan shall include updated third party cost estimates for the following items, as necessary:
- a. Landfill closure (e.g., grading, installation of cover)
  - b. Postclosure Maintenance (e.g., cover repairs, facility maintenance,

groundwater monitoring)

- 1) Annual estimate
  - 2) 30-year estimate
- c. Corrective Action – Lump sum cost estimate for corrective action measures to address a known or reasonably foreseeable release per Title 27 Section 22220(b).

Copies of the updated PCMP shall also be provided to the Local Enforcement Agency and the CIWMB.

10. The Discharger shall obtain and maintain assurances of financial responsibility that comply with Title 27, Sections 22207 (Closure Fund), 22212 (Post-Closure Fund), and 22220 et seq. (Corrective Action Fund) and 40 CFR parts 257 and 258. The financial assurance (F/A) instrument(s) shall be submitted to the CIWMB, Financial Assurance Division, which determines if the instrument(s) meet the requirements of Chapter 6, Title 27. The Discharger shall provide adequate funding for the following:
- a. Landfill closure in at least the amount of the minimum fund balance required by the CIWMB under Section 22225 based on current approved closure cost estimates under Provision E.25.a;
  - b. Landfill postclosure maintenance and monitoring in at least the amount of the approved cost estimates under Provision E.25.b; and
  - c. Corrective action in at least the amount of the approved cost estimate under Provision E.25.c.
11. **Within 120 days** of adoption of this Order, the Discharger shall submit to the Executive Officer evidence that instrument(s) or mechanism(s) are in place for required F/As under this Order (i.e., closure, post-closure maintenance, and corrective action). The most recent acceptance letter from the CIWMB, Financial Assurance Division (required to be included in the Annual Report submitted under MRP Section H.2.e.iii) may suffice for this purpose.
- By **30 November 2010** and **every five years** thereafter (or earlier if requested by the Executive Officer), the Discharger shall also submit for the Executive Officer's review and approval a report as to the status of required F/As. The report shall identify the following:
- a. Required F/As for the facility, including type and current amount;
  - b. F/A instrument(s) or mechanism(s) provided to satisfy the required F/As;
  - c. Validity and ongoing viability of instrument(s)/mechanism(s) in D.4.b, including any needed changes.

12. By 31 July 2012, the Discharger shall submit, for the Executive Officer's approval, an updated Water Quality Protection Standard (WQPS) Report for each monitored media under this Order (i.e., unsaturated zone, groundwater, and surface water). The report shall include updated Constituents of Concern, Concentration Limits, Monitoring Points, Points of Compliance, and Compliance Periods, consistent with the requirements of this Order, including MRP Section C.
13. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.
14. 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.
15. The Regional Water Board will review this Order periodically and will revise these requirements when necessary.

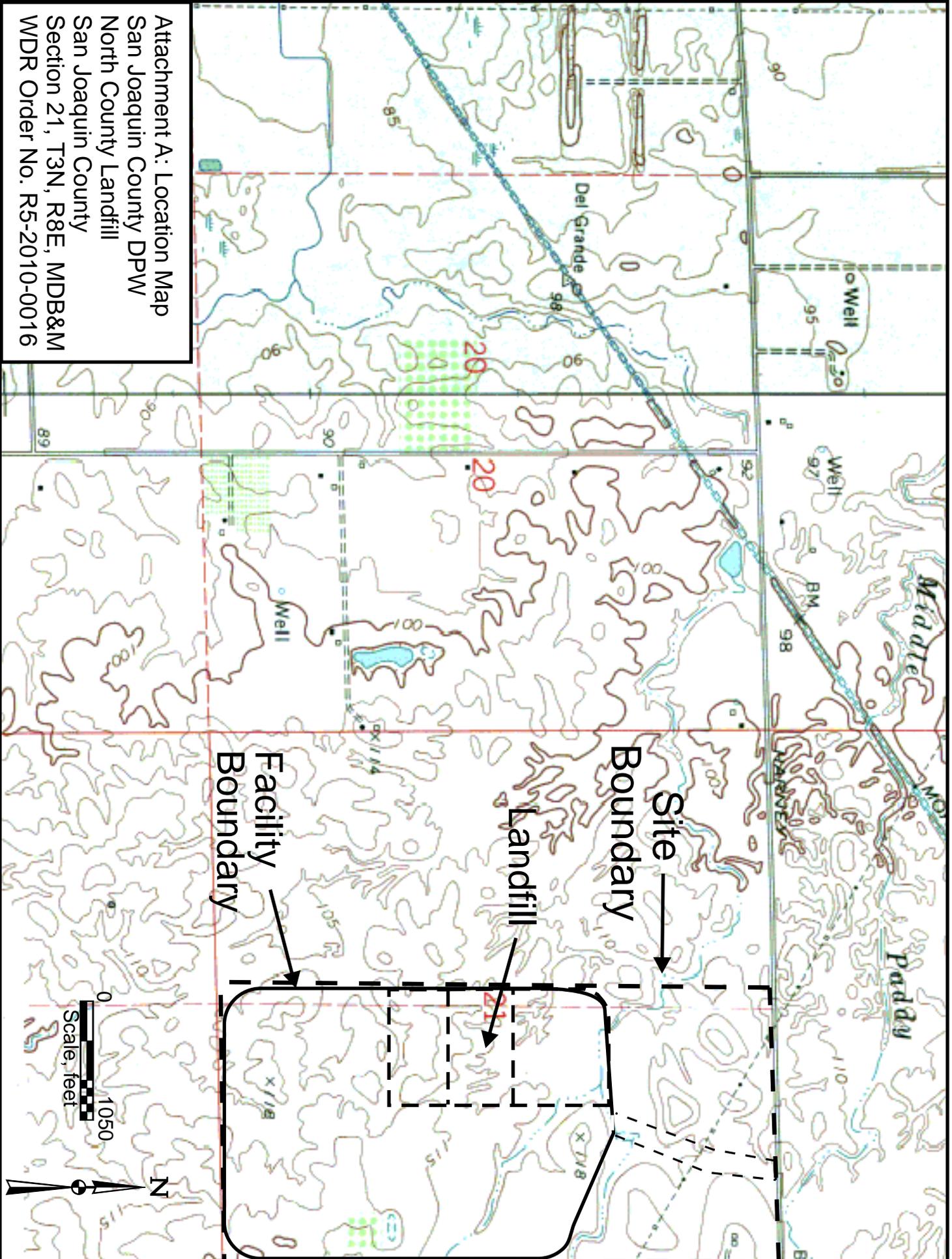
I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 January 2010.

Original Signed By

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PAMELA C. CREEDON, Executive Officer

Attachments  
JDM: 2 February 2010



Attachment A: Location Map  
 San Joaquin County DPW  
 North County Landfill  
 San Joaquin County  
 Section 21, T3N, R8E, MDB&M  
 WDR Order No. R5-2010-0016

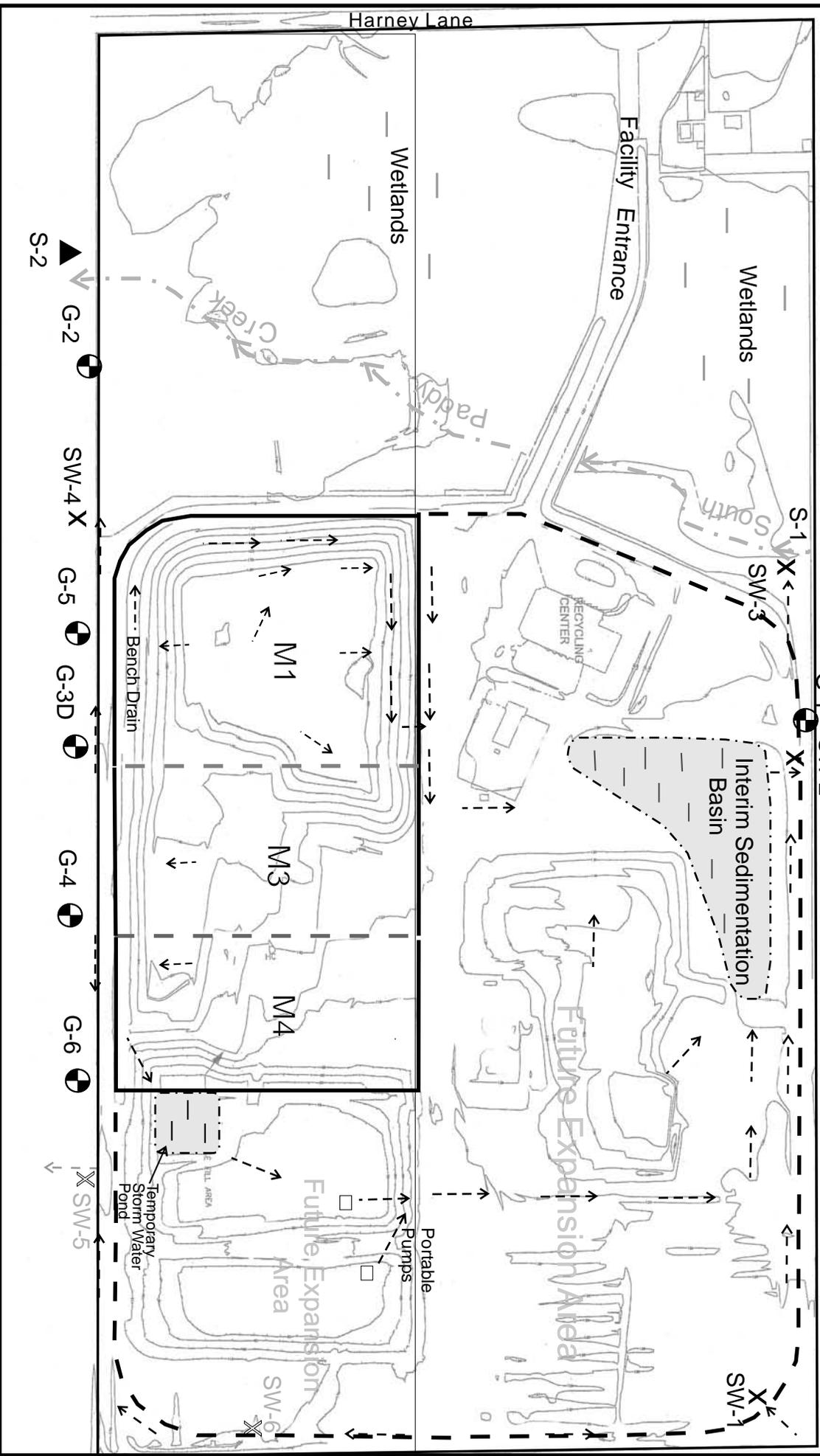


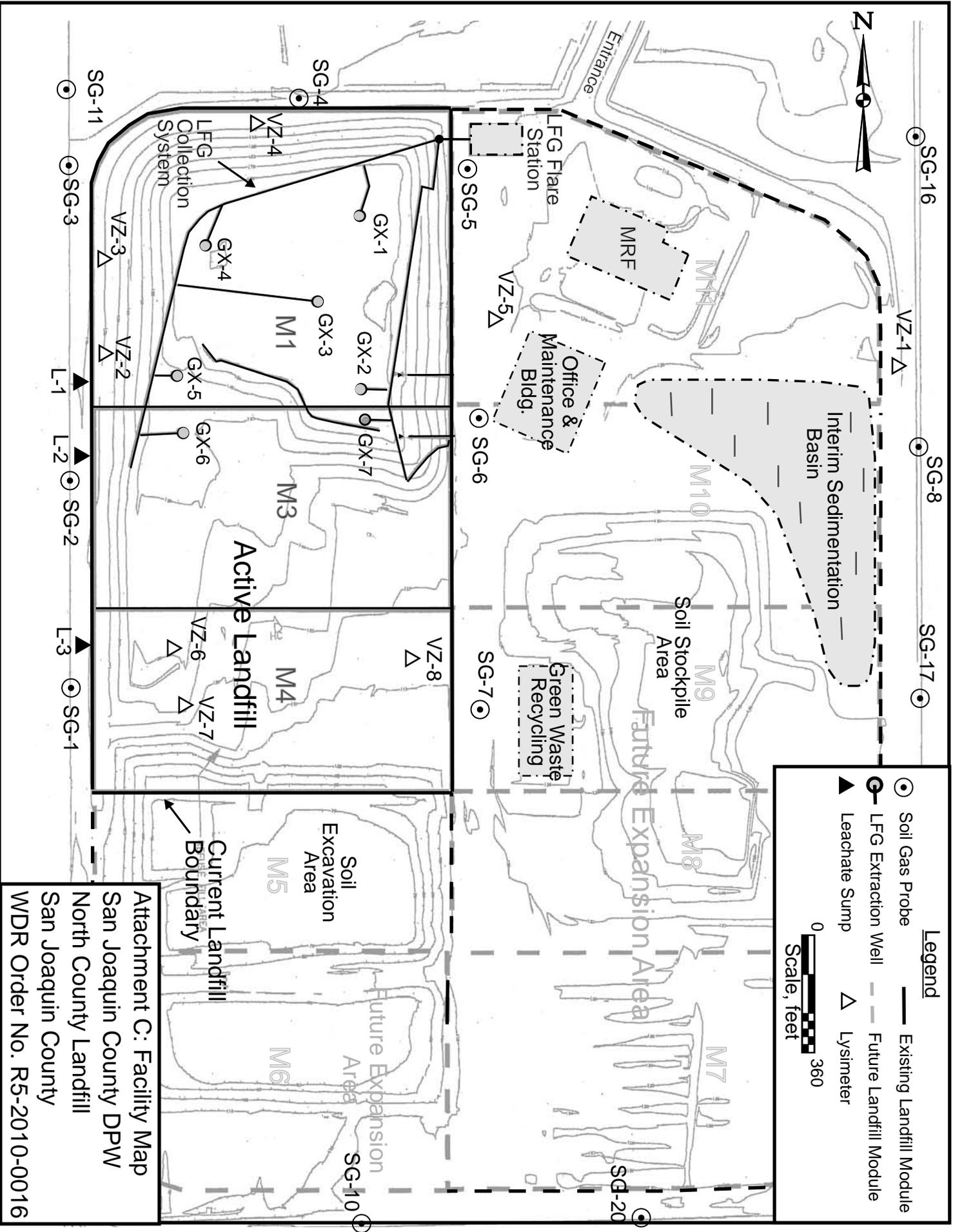
**Legend**

- Existing Landfill Boundary
- - - Facility Boundary
- Site Boundary
- ← - - - Storm Water Flow
- ⊕ Groundwater Monitoring Well
- ▲ Surface Water Monitoring Point
- X Storm Water Monitoring Point



Attachment B: Site Map  
 San Joaquin County DPW  
 North County Landfill  
 San Joaquin County  
 WDR Order No. R5-2010-0016





SG-16

SG-8

SG-17

SG-20

VZ-1

SG-5

SG-6

SG-7

SG-10

SG-4

SG-3

SG-2

SG-1

VZ-4

VZ-3

VZ-2

VZ-8

GX-4

GX-5

GX-6

GX-7

GX-1

GX-2

GX-3

GX-10

M1

M3

M4

M5

M6

M7

M8

M9

M10

LFG Collection System

Office & Maintenance Bldg.

Green Waste Recycling

Soil Stockpile Area

Future Expansion Area

Excavation Area

Future Expansion Area

Current Landfill Boundary

**Legend**

- Soil Gas Probe
- LFG Extraction Well
- ▲ Leachate Sump
- △ Lydimeter
- Existing Landfill Module
- - - Future Landfill Module

0 360  
Scale, feet

Attachment C: Facility Map  
 San Joaquin County DPW  
 North County Landfill  
 San Joaquin County  
 WDR Order No. R5-2010-0016

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2010-0016  
CONSTRUCTION, OPERATION, AND DETECTION MONITORING  
SAN JOAQUIN COUNTY DEPARTMENT OF PUBLIC WORKS  
NORTH COUNTY LANDFILL  
CLASS III LANDFILL  
SAN JOAQUIN COUNTY

This monitoring and reporting program (MRP) is issued pursuant to California Water Code section 13267 and incorporates requirements for landfill monitoring and maintenance contained in California Code Regulations title 27, division 2 (Title 27), Waste Discharge Requirements (WDRs) Order No. R5-2010-0016, and the April 2000 Standard Provisions and Reporting Requirements (SPRR). Compliance with this MRP is ordered by the WDRs. The Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Executive Officer.

Pursuant to Sections 20415(b)(1)(B) and 20420, the Discharger shall maintain water quality monitoring systems for background and detection monitoring, as set forth below.<sup>1</sup>

**MRP SUMMARY TABLE**

<b>Section</b>	<b>Requirement</b>	<b>Frequency</b>
A	Standard Observations	Weekly
B	Facility Monitoring:	
	1. Maintenance Inspections	Monthly
	2. After Significant Storm Events	Within 7 Days After Event
	3. Site Winterization	Annually
C	Water Quality Protection Standard	Update as necessary
D	Leachate Monitoring	
	1. LCRS Sumps	Monthly/Semiannually
	2. Secondary Sumps	Quarterly/Semiannually
E	Unsaturated Zone Monitoring	
	1. Soil Gas	Quarterly
	2. Pore Liquid	Semiannually
F	Groundwater Monitoring	
	1. Elevation	Quarterly
	2. Background Monitoring	Semiannually
	3. Detection Monitoring	Semiannually
	4. Constituents of Concern (COCs)	Every 5 years
G	Surface Water Monitoring:	
	1. Storm Water	Semiannually

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1. Regulatory sections quoted in the text and titles of this MRP refer to Title 27 unless otherwise noted.

<b>Section</b>	<b>Requirement</b>	<b>Frequency</b>
H	2. South Paddy Creek Reporting	Semiannually
	1. Records	Continuous
	2. Semiannual Report	Semiannually
	3. Annual Monitoring Summary	Annually
	4. COC Monitoring Report	Every 5 years
	5. Other Reports	See Section H.5

**A. STANDARD OBSERVATIONS**

**1. Definition**

Standard Observations shall include the following:

- a. For the Unit:
  - 1) Evidence of ponded water at any point on the facility (show affected area on map);
  - 2) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
  - 3) Evidence of erosion and/or of day-lighted refuse.
- b. Along the perimeter of the Unit:
  - 1) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
  - 2) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
  - 3) Evidence of erosion and/or of day-lighted refuse.
- c. For receiving waters:
  - 1) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area;
  - 2) Discoloration and turbidity - description of color, source, and size of affected area;
  - 3) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;
  - 4) Evidence of water uses - presence of water-associated wildlife;
  - 5) Flow rate; and
  - 6) Weather conditions - wind direction and estimated velocity, total precipitation during recent days and on the day of observation.

**2. Monitoring Requirements**

Standard observations of the site (e.g., landfill cover, perimeter ditches, sedimentation basin, South Paddy Creek) shall be performed **weekly** and recorded in field logs. Any landfill leachate seeps detected during these inspections (or at any other time) shall be reported in accordance with WDR Reporting Requirement F.5, and any leachate that enters a module excavation area or facility drainage system shall be sampled and analyzed for the COCs referenced in Table C.1 herein.

**B. FACILITY MONITORING**

The discharger shall inspect the landfill and associated facilities (e.g., cover, precipitation and drainage controls, gas extraction system, monitoring wells, access roads), as necessary, to ensure that such facilities are functioning properly and are in adequate maintenance and repair. Any damage to the landfill facilities observed during these inspections shall be flagged and repaired. Facility inspections and repairs shall be conducted in accordance with the following schedule:

<b>Purpose</b>	<b>Inspection Frequency</b>	<b>Complete Repairs<sup>1</sup></b>
1. Regular Maintenance	Monthly	Within 30 days
2. Storm Response	Within one week of significant storm event <sup>2</sup>	Within two weeks of storm event
3. Site Winterization	By September 30 of each year	By October 31 of each year

1. If necessary repairs cannot be completed within specified time frame, the Discharger shall, within 7 days, notify the Regional Water Board and provide a schedule for completing them.
2. A "significant" storm event shall be one that produces 1.4 inches or more of precipitation within a 24-hour period, as measured at the Linn Ranch Station.

The results of these inspections, including documentation of any significant damage and/or repairs (e.g., field logs, site map showing location of damage, before and after photos) shall be included in the semiannual monitoring report for the period and summarized in the Annual Report. If no inspection and/or repairs were conducted as required above, the report shall so state, providing the reason and circumstances (e.g., no significant storm event during monitoring period).

**C. WATER QUALITY PROTECTION STANDARD (Section 20390)**

The Water Quality Protection Standard (WQPS) shall consist of all COCs, Concentration Limits (CLs) for each COC, Monitoring Points, Point of Compliance, and the Compliance Period.

**1. Constituents of Concern (Section 20395)**

The COC list includes all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The COCs for all monitored waters at the site (i.e., unsaturated zone, groundwater, and surface water) shall be as listed in Tables

G.1 and G.2, which are incorporated herein and made part of this Order by reference. The COC list groups are as follows:

<b>Table C.1</b>		
<b>Constituents of Concern</b>	<b>Units</b>	<b>Test Method</b>
Field Parameters		As specified in Table G.1
Inorganic:		
General Minerals	mg/L	See Table G.1
Dissolved Metals	µg/L	See Table G.1
Organic:		
Volatile Organic Compounds	µg/L	USEPA Method 8260B
Semi-Volatile Organic Compounds	µg/L	USEPA Method 8270
Organophosphorus Pesticides	µg/L	USEPA Method 8141A
Chlorinated Herbicides	µg/L	USEPA Method 8151
Organochlorine Pesticides	µg/L	USEPA Method 8081A
Polychlorinated Biphenols (PCBs)	µg/L	USEPA Method 8082

**2. Concentration Limits (Section 20400)**

Statistical CLs shall be developed and updated using historical background monitoring data. Data analysis shall be in accordance with WDR Monitoring Specifications E.20 and E.22.a using an “interwell comparisons” approach (e.g., comparing downgradient with upgradient, or downstream with upstream). CLs for nonstatistical COCs shall be developed and updated, as applicable, in accordance with WDR Monitoring Specifications E.21, E.22.b, and E.23.

a. Unsaturated Zone

CLs not yet developed due to lack of liquid recovery from lysimeters. CLs shall be developed (and updated thereafter) once a sufficient amount of background monitoring data has been collected under Section E.2 herein.<sup>1</sup>

b. Groundwater

1) Statistical CLs

CLs for general minerals (specified in Table G.1) were calculated using the interwell tolerance method. CLs for dissolved metals have not yet been developed due to limited background monitoring data (9 events). Interim CLs for 11 out of 24 dissolved metals tentatively identified as statistical COCs are listed in Table G.1. Revised CLs for these dissolved metals shall be developed once additional background monitoring has been conducted for these constituents per Section F.2.c herein.

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1. WDR Provision G.8.b requires that the Discharger investigate the lysimeters and submit a workplan for any repairs that may be necessary to ensure that they are in good working order.

2) Nonstatistical CLs

Interim CLs for the remaining 13 dissolved metals (i.e., those not detected in any of the 9 monitoring events) and CLs for VOCs and other organic COCs were set equal to the PQL.

c. Surface Water

CLs for statistical COCs shall be based on either of the following:

- 1) Concurrent upstream monitoring data; and/or
- 2) Statistical analysis of historical upstream monitoring data (assumed for interim CLs under this Order).

Interim statistical CLs based on available monitoring data from sampling point S-1 are provided in Table G.1. Revised CLs for these dissolved metals shall be developed once additional background monitoring has been conducted for these constituents under Section G.2 herein.

3. **Monitoring Points (Section 20405)**

The monitoring points for unsaturated zone, groundwater, and surface water monitoring shall be as specified in Sections E.2; F.2 and 3; and G.2, respectively.

4. **Compliance Points**

a. Unsaturated Zone

The compliance points for the unsaturated zone shall consist of all existing and future lysimeters installed along the landfill perimeter, as referenced in Section E.2 herein.

b. Groundwater

The compliance points for groundwater monitoring shall consist of all groundwater monitoring wells installed along the landfill perimeter, as referenced in Section F.3 herein and described as follows:

1) Point of Compliance Wells

Section 20405 defines the Point of Compliance (POC) as a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

The groundwater monitoring wells along the POC shall consist of all downgradient (and cross gradient) landfill perimeter wells, including Gs-2, 3D, 4, 5 and 6;

2) Upgradient Wells

All upgradient perimeter wells within the zone of influence of LFG (e.g., G-1);

3) Future Wells

Any future wells that meet either (or both) of the criteria in 4a and 4b.

c. Surface Water

The compliance points for surface water monitoring shall consist of downstream monitoring point S-2 (see Section G.2).

5. **Compliance Period (Section 20410)**

The compliance period (the minimum period for a landfill during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit) is equal to the active life of the Unit plus the closure period. The compliance period shall be as follows:

- a. The landfill began operations in 1991 and is projected to close in 2050. The compliance period is therefore 59 years.
- b. If the landfill is in corrective action at the scheduled end of the compliance period, the compliance period shall be extended until the discharger can demonstrate that the Unit has been in continuous compliance with its WQPS for a period of at least three consecutive years, including proof period under Section 20430(f). See WDR Monitoring Specification E.32.

**D. LEACHATE MONITORING**

1. **LCRS Sumps**

- a. Monitoring Points – Modules 1, 3, 4 and future modules
- b. Monitoring Parameters & Schedule

All LCRS sumps shall be inspected **at least monthly** for leachate generation and monitored (i.e., sampled) in accordance with the parameters and frequencies of Section F.3.c (except quarterly elevation monitoring shall be replaced with monthly volume monitoring). Until such time as they are upgraded with automatic controls (required **within two years** of adoption of this Order under WDR Facility Specification C.4), manually operated LCRS sumps shall be pumped dry **twice per week** and the volumes removed recorded. Volumes pumped from automatically operated sumps shall also be recorded.

2. **Secondary Sumps**

- a. Monitoring Points – same as D.1.a.
- b. Monitoring Parameters & Schedule

All secondary sumps shall be inspected **at least quarterly** for the presence of liquid. Notice to the Regional Water Board shall be the same as in response to a release (i.e., within 7 days). Any liquid detected in a sump shall be removed after completion of sampling. Monitoring shall be in accordance with Section F.3.c, except that the volume detected (and removed) shall also be measured.

**E. UNSATURATED ZONE MONITORING**

**1. Soil Gas**

The Discharger shall monitor soil gas for LFG to assess its ongoing potential as source of impacts to groundwater. Field meters shall be calibrated for each parameter before use. Field and calibration logs for each monitoring event shall be included in each monitoring report.

**a. Major Gases**

Major gases (i.e., methane and carbon dioxide) shall be monitored at all perimeter migration monitoring wells in accordance with the perimeter migration monitoring requirements of the LEA. Major gases shall also be monitored at the VOC monitoring points specified in Section E.1.b below. The monitoring parameters and schedule shall be as follows:

**Table E.1.a**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Method</u>
Ambient Temperature <sup>1</sup>	°C, °F	Quarterly	Meter
Gas Pressure <sup>1</sup>	psig	Quarterly	Meter
Methane <sup>2</sup>	%	Quarterly	Meter
Carbon Dioxide <sup>2</sup>	%	Quarterly	Meter

- 1. Measured prior to monitoring
- 2. Measured at each well.

**b. VOCs**

VOCs shall be monitored at soil gas wells SG-1 (deep probe), SG-3 (deep probe) and SG-6. VOCs shall also be monitored in any perimeter migration monitoring well in which the methane concentration exceeds 5% by volume. The monitoring parameters and schedule shall be as follows:

**Table E.1.b**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Method</u>
Major Gases		Same as Table E.1.a.	
VOCs <sup>1</sup>	ppbv	Semiannually	EPA Method TO-15 or 8260B

- 1. If more than one probe in perimeter well exceeds 5% methane, only the lower of the probes need be monitored for VOCs.

**2. Pore liquid Monitoring**

The Discharger shall monitor soil pore liquid as follows:

a. Monitoring Points

<u>Lysimeter</u>	<u>Type</u>	<u>Location</u>
VZ-1	Background	Undeveloped area near G-1
VZ-2	Detection	SW perimeter Module 1, NW perimeter Module 3
VZ-3	Detection	NW perimeter Module 1
VZ-4	Detection	Northern perimeter, Module 1
VZ-6, 7	Detection	Under Module 4 (western half)
VZ- 8	Detection	Under Module 4 (eastern half)

1. Lysimeters installed in shallow soil beneath lined excavation slopes.

Lysimeter monitoring locations shall also include future lysimeters installed to monitor future expansion modules per WDR Construction Specification D.5.c. Pore liquid monitoring shall also include any lysimeters or other monitoring devices beneath leachate collection sumps.

b. Monitoring Parameters & Schedule

The pore liquid monitoring shall be conducted **monthly**. Any liquid recovered shall be analyzed in accordance with the parameters in Section F.3.c, except that volume of liquid recovered shall be recorded in lieu of elevation. In the event that a release is tentatively indicated, the Discharger shall proceed with confirmation sampling under WDR Monitoring Specification E.27, and follow the Response to Release requirements of the WDRs and SPRR, as indicated. The Discharger shall also consider whether the detection of liquid in the lysimeter constitutes significant physical evidence of a release under WDR Monitoring Specification E.30.

**F. GROUNDWATER MONITORING**

**1. Elevation Monitoring (Section 20415(e)(13))**

The groundwater surface elevation (in feet and hundredths, MSL) in all wells and piezometers shall be measured on a **quarterly** basis. Groundwater elevations taken prior to purging the well and sampling for Monitoring Parameters may be used to fulfill this requirement. Groundwater elevations for all monitoring wells for a given groundwater body shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater gradient and direction. The results of groundwater elevation monitoring shall be displayed on a water table contour map and/or groundwater flow net for the site and included in each monitoring report. The Discharger shall use the groundwater elevation monitoring data to estimate the following, as feasible:

- a. The groundwater flow velocity
- b. The gradient direction in the upper aquifer, and in any additional zone of saturation monitored pursuant to this MRP
- c. Times of highest and lowest elevations of the water levels in the wells
- d. Separation of groundwater from the lowest point of the unit

Each of these estimations shall be included in the semi-annual reports.

## 2. **Background Monitoring (Section 20415(b)(1)(A))**

Background monitoring shall be performed for the purpose of developing and updating concentration limits as described in Section C.2.

### a. Monitoring Points

The Discharger shall install and operate a sufficient number of background monitoring wells at appropriate locations and depths to yield ground water samples from the uppermost aquifer that represent the quality of ground water that has not been affected by a release from the unit. The background monitoring system may include wells that are not hydraulically upgradient of the Unit if:

- 1) Samples from such wells are more representative than those provided by upgradient wells; or
- 2) Installation of an upgradient background well is not feasible; and
- 3) It can be demonstrated that samples from such wells are representative of background groundwater quality.

The background monitoring points for groundwater shall be as specified in Section F.3.a herein.

### b. Monitoring Parameters - See Section F.3.b.

### c. Monitoring Schedule

The background monitoring schedule shall be as specified in Section F.3.c herein, except for five-year inorganic COCs (i.e., dissolved metals) for which concentration limits have not yet been developed. For such COCs, background monitoring shall be conducted **annually** until a sufficient amount of data has been collected for statistical (or nonstatistical) determination of concentration limits. Thereafter, such monitoring may be reduced to every five years in accordance with Section F.4.

## 3. **Detection Monitoring (Sections 20415(b)(1)(B) and 20420)**

The Discharger shall install, operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Sections 20415 and 20420 of Title 27. Such system shall be appropriate for detecting, at the earliest possible time, a release to groundwater from the Unit. Detection

monitoring (and any evaluation and/or corrective action monitoring required in the event of a release) shall be conducted in compliance with WDR Monitoring Specifications E.1 through 33, as applicable.

- a. Monitoring Points - The groundwater detection monitoring points shall be as specified below.

<u>Module</u>	<u>Well</u>	<u>Orientation</u>	<u>Location</u>
1	G-5	Down gradient	NW unit perimeter
1, 3	G-3D	Down gradient	Western site perimeter
3	G-4	Down gradient	Western unit perimeter
4	G-6	Down gradient	SW unit perimeter
All	G-1	Background	NE unit perimeter
All	G-2 <sup>1</sup>	Side gradient	NW site perimeter

1. Well historically inactive. WDR Provision G.8.c requires status report, including plans for repair or replacement, as necessary.

The detection monitoring points shall further include any future onsite or offsite groundwater monitoring wells installed to monitor the facility. In the absence of an approved proposal to the contrary, all detection monitoring points shall become evaluation and corrective action monitoring points in the event of a confirmed release from the unit.

- b. 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 the landfill shall be as specified in Section F.3.c and Tables G.1 and G.2. Any five-year COC confirmed by retest (per WDR Monitoring Specification E.27) to be a constituent of a release shall also be added to the monitoring parameter list per Monitoring Specification E.29. In such cases, the Discharger shall also follow the Response to Release requirements of the WDRs and SPRR, as necessary.

- c. Monitoring Schedule

A sufficient number of samples shall be taken from all monitoring points to satisfy the data analysis requirements for a given reporting period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Collection and analysis of samples shall be in accordance with procedures set forth in the SCAnP per WDR Monitoring Specification E.6. The groundwater monitoring schedule shall be as specified in Table F.3.c below.

**Table F.3.c - Detection Monitoring Schedule**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Data Analysis</u>
<b>Field Parameters</b>			
Elevation	Feet MSL	Quarterly	---
pH	pH units	Semiannually	Statistical
Temperature	°C, °F	Semiannually	---
Turbidity	NTU	Semiannually	---
Dissolved Oxygen (DO)	%	Semiannually	---
Redox potential	millivolts	Semiannually	---
Specific Conductance	µMhos/cm	Semiannually	Statistical
<b>Monitoring Parameters</b>			
VOCs <sup>1</sup>	µg/L	Semiannually	Nonstatistical
General Minerals:			
Chloride	mg/L	Semiannually	Statistical
TDS	mg/L	Semiannually	Statistical
Total Alkalinity	mg/L	Semiannually	Statistical
Total Hardness	mg/L	Semiannually	Statistical
Chemical Oxygen Demand (COD)	mg/L	Semiannually	Statistical
Major Anions <sup>1</sup>	mg/L	Annually	Statistical
Major Cations <sup>1</sup>	mg/L	Annually	Statistical
<b>COCs<sup>1</sup></b>	See Table C	Every 5 years <sup>2</sup>	Statistical/Nonstatistical

1. See Tables G.1 and G.2 for full list of constituents and EPA test methods.

2. More frequent monitoring may be required in certain circumstances per Section F.4.

**4. COC Monitoring**

COC monitoring shall be conducted as part of background and detection monitoring under Sections F.2 and F.3, respectively. COC monitoring shall be conducted by **30 June 2010** and at least every five years thereafter. Additional or more frequent COC monitoring may be required to establish CLs (see Section F.2.c) or in response to a release (see SPRR, Section XI).

**G. SURFACE WATER MONITORING (Section 20415(c))**

**1. Storm Water**

The Discharger shall maintain coverage under the State Water Resources Control Board General Industrial Storm Water Permit, Water Quality Order No. 97-03-DWQ. The discharger shall also monitor storm water flows semiannually for the semiannual field and monitoring parameters specified in Table F.3.c. Sampling shall be conducted at the following discharge locations, as applicable (see Attachment B):

<u>Sampling Point</u>	<u>Sampling Location</u>	<u>Source of Flow</u>	<u>Type</u>
SW-1 <sup>1</sup>	Representative upstream location	Runon or direct rainfall Runon	
SW-2	Outfall to eastern perimeter ditch	ISB	Runoff
SW-3 <sup>2</sup>	Outfall to South Paddy Creek - Upstream	Eastern Perimeter Ditch	Runoff
SW-4	Outfall to South Paddy Creek - Down stream	Western Perimeter Ditch	Runoff
SW-5 <sup>3</sup>	SW Outfall to natural drain	Western Perimeter Ditch	Runoff
SW-6 <sup>3</sup>	SW Outfall to natural drain	Southern perimeter ditch	Runoff

1. SW-1 may be any upstream location in the storm water drainage system representative of background storm water conditions.
2. No sampling required at this monitoring point if at time of sampling only source of flow is that from SW-2.
3. Future discharge locations.

The results of storm water monitoring for these constituents shall be summarized in the monitoring reports submitted under this Order. If there is no discharge from the site during the monitoring period, or the Discharger did not obtain samples of the discharge, the Discharger shall state the reasons and circumstances in the monitoring report.

**2. Surface Water**

Surface water sampling shall be collected at upstream monitoring point S-1 and down stream monitoring point S-2, as shown on Attachment B: Site Map. Monitoring shall be conducted for the parameters and constituents, and at the corresponding frequencies, listed in Table F.3.c, except for Redox potential, which need not be monitored. Creek elevation may be estimated based on observation.

**H. REPORTING**

**1. Records**

The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the postclosure period. Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;
- c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
- d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- e. Calculation of results; and
- f. Results of analyses, and the MDL and PQL for each analysis.

## 2. **Semiannual Reports**

The Discharger shall report monitoring data and information as required in this MRP and as required under WDRs Order No. R5-2010-0016 and the SPRR. Monitoring reports shall be submitted **semiannually**. Each semiannual monitoring report shall include the following information:

- a. A compliance summary for the monitoring period that includes:
  - i. A narrative summary of any **violations** that occurred during the monitoring period;
  - ii. The quantity and types of wastes discharged and the locations in the unit where waste has been placed since submittal of the last such report.
  - iii. A summary and certification of the completion of all Standard Observations.
  - iv. An evaluation of the effectiveness of all landfill control facilities, including, but not necessarily limited to, leachate, precipitation and drainage, and landfill gas.
  - v. Maps and/or aerial photographs, as appropriate, showing relevant facility details, including the landfill and all monitoring locations.
- b. A tabular summary of monitoring well information from the installation logs, including well name, top casing elevation, total well depth, relevant geologic information (e.g., soil type), aquifer(s) and zones (e.g., upper water bearing zone), and screened intervals (bgs and MSL).
- c. **Groundwater elevation** monitoring results for each quarter, including:
  - 1) A narrative description of groundwater flow at the site, including flow direction, gradient, and rate; and
  - 2) A groundwater elevation contour map approximately scaled and clearly labeled to show the information in H.2.c.1).
- d. **Tabular summaries** of the monitoring results obtained during the period for each monitoring schedule herein. Tables shall have appropriate headers and show monitoring point, sampling date, constituent or parameter, concentration

or measurement, units, and CLs, as applicable. Any exceedances of CLs shall be highlighted or otherwise clearly shown. Non-detect results shall indicate the applicable detection limit (e.g., "<0.3").

e. An **analysis of the monitoring data**, including the following:

1) Background Monitoring

- i. Identifying historical trends
- ii. Developing/updating CLs for monitoring parameters and COCs, as appropriate

2) Detection Monitoring

- i. Comparing monitoring data with CLs to identify any exceedances
- ii. Retesting, as required, if release tentatively indicated.
- iii. Checking for previous similar or potentially related exceedances (e.g., sporadic, recurring) in same media.
- iv. Checking for similar or potentially related exceedances in other media (e.g., unsaturated zone).
- v. Whether a release was indicated by physically significant evidence.
- vi. Whether a leak occurred in a sump or containment system.

3) Graphics

- i. Water chemistry analysis
  - ⇒ Cation/anion balance
  - ⇒ Graphs (e.g., Piper, Trilinear, Schueller, and/or Stiff plot)
- ii. Time series plots
  - ⇒ Provide for each constituent for which there are three or more data points, including non-detect values, at each monitoring point.
  - ⇒ Data for multiple monitoring points, or multiple constituents, may be plotted on same graphic if scaling compatible.
  - ⇒ Scale for maximum range of data (excluding outliers).
  - ⇒ Use compatible graphics (e.g., symbols, line type, color, icon size) so each plot can be easily distinguished and read
  - ⇒ Limit amount of information (e.g., number of constituents or monitoring points) on each graphic to maintain clarity
  - ⇒ Use plotting program that reads sampling dates
- iii. Trend analysis
  - ⇒ Provide for representative parameters/constituents for which there are four or more data points above the PQL, at each monitoring point.

⇒ Use appropriate graphical/statistical methods (e.g., Mann-Kendall, Sen's Slope, best fit).

Note: The above graphical methods may also be used to evaluate whether there has been a release under H.2.e.2).

- 4) Overall evaluation of the effectiveness of the detection monitoring program and need for additional measures, controls and/or monitoring wells.
  - i. Identify potential sources of impacts and transport mechanisms
  - ii. Discuss evidence that detection monitoring program is or is not working.
  
- 5) In Event of Release:
  - i. Same as H.2.e.3) above.
  - ii. Preparation of contaminant contour maps for representative constituents/parameters

The information above (H.2.a through H.2.e) shall be provided in the main body of the report, and the information below (H.2.f) in the appendix to the report.

f. Appendix Items

- 1) Field logs of Standard Observations
- 2) Sample collection information for each monitoring point:
  - i. Time of water level measurement;
  - ii. Type of pump (or other device) used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
  - iii. 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;
  - iv. Type of pump (or other device) used for sampling, if different than the pump or device used for purging; and
  - v. A statement verifying that the sampling procedure was conducted in accordance with the SCA<sub>n</sub>P.
- 3) Field logs, chain of custody, and laboratory test sheets.
- 4) Copies of other relevant reports or data (e.g., results of soil gas/LFG monitoring required by Local Enforcement Agency)
- 5) An electronic copy of the monitoring report on compact disk (CD) in (preferably combined) PDF format.

Appendix Items f.i through f.iv above may be submitted in electronic form (per f.v) in lieu of submitting paper copies.

**3. Annual Monitoring Summary Report**

An Annual Monitoring Summary Report (Annual Report) shall also be prepared and submitted **annually**. The report may be submitted as part of the Second Semiannual Report for each year. The Annual Report shall include the following information:

- a. A written summary of the monitoring results for the year, indicating any changes made or observed since the previous annual report.
- b. A comprehensive discussion of the compliance record, including any necessary repairs, improvements, and/or corrective action measures implemented or planned to bring the Discharger into full compliance with the WDRs and WQPS.
- c. Tabular and graphical summaries of the results of the prior year, including, representative time series plots.
- d. A summary of the results of water chemistry analysis of water quality data collected during the prior year.
- e. Appendix Items
  - 1) A copy of the SCA<sub>n</sub>P as updated per WDR Monitoring Specification E.6 and the SPRR (Monitoring Specification X.B).
  - 2) Electronic copies of the following on CD
    - i. Historical monitoring data collected under this and previous MRPs
      - ⇒ Provide in a tabular format necessary for statistical analysis (e.g., Excel) per Section 40420(h)
      - ⇒ Provide for all monitoring systems, including leachate; LFG; soil gas; soil pore water; groundwater (including elevation, flow direction, gradient, and quality); surface water; and storm water.
      - ⇒ Provide for at least previous 10 years (or for as long as monitoring has been conducted at a given monitoring point).
      - ⇒ Organize tables as specified in H.2.d.
    - ii. The monitoring report in (preferably combined) PDF format.
  - 3) Evidence to the Regional Board's Executive Officer that acceptable financial assurance instrument(s) have been provided for post-closure and corrective action (e.g., an acceptance letter from the CIWMB's Financial Assurance Division).

**4. COC Monitoring Report**

The five year COC monitoring report may be submitted separately or in the semiannual report for the monitoring period in which five year sampling was conducted. In either case, the report shall be submitted in accordance with the due dates specified in Table H.6 below.

**5. Other Reports**

- a. Notifications -- Required notifications under Title 27 (e.g., tentative release, leachate seep, extended repairs) shall be submitted within 7 days of event unless otherwise specified under this Order or the SPRR.
- b. Updated WQPS Report -- shall be submitted by the due date specified in WDR Provision G.12 and thereafter concurrent with the five-year COC monitoring report under Section H.4 herein. (The WQPS shall be updated on an ongoing basis, as described in Section C herein.)

**6. Reporting Schedule**

The semiannual and annual reports shall be submitted to the Board in accordance with the following schedule for the calendar period in which samples were taken or observations made:

**Table H.6**

<u>Report</u>	<u>End of Reporting Period</u>	<u>Date Report Due</u>
First Semiannual	30 June	<b>31 July</b>
Second Semiannual	31 December	<b>31 January</b>
Annual Report	31 December	<b>31 January</b>

**7. Transmittal Letter**

A transmittal letter explaining essential points shall accompany each monitoring report. At a minimum, the transmittal letter shall:

- a. Identify the enclosed monitoring report and monitoring period for which it is being submitted under the MRP. Also, identify the last monitoring report submitted under the MRP and monitoring period for which it was submitted.
- b. State whether any WDR violations (including reporting violations) or exceedances of concentration limits have occurred during the monitoring period, or since the end of the monitoring period for which the last monitoring report was submitted; what those violations were; and how they have, or will be, corrected. If no such violations or exceedances have occurred, the transmittal letter shall so state.
- c. State that a discussion of any such violations or exceedances, and a description of the actions taken or planned for correcting them (including any references to previously submitted time schedules), is contained in the enclosed report.

- d. Comply with the signatory requirements of WDR Reporting Requirement F.6, including certification by the discharger (or the discharger's authorized agent) under penalty of perjury that, to the best of the signer's knowledge, the report is true, accurate and complete.

Reports that do not comply with the above-required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs.

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

Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer  
29 January 2010

Attachments  
JDM: 2 February 2010

INORGANIC CONSTITUENTS OF CONCERN (COCs),  
 APPROVED USEPA ANALYTICAL METHODS, & CONCENTRATION LIMITS

**Table G.1**

Constituent	USEPA Test Method	Concentration Limit <sup>1</sup>		
		Unsaturated Zone	Ground-water	Surface Water <sup>3</sup>
<b>Field Parameters</b>				
Elevation, Ft. MSL	----	n/a	----	n/a
pH, pH units	150.1 or meter	----	≥6, ≤8	----
Temperature, °C, °F	----	----	----	----
Turbidity, NTU	----	----	18	209
Dissolved Oxygen	360.1 or meter	----	----	----
Oxidation-Reduction (Redox) Potential, mv	----	----	----	n/a
Specific conductance, µMhos/cm	120.1 or meter	----	450	695
<b>General Minerals, mg/L</b>				
Total Dissolved Solids (TDS)	2540C	----	300	468
Total Alkalinity	2320B	----	165 <sup>2</sup>	334
Total Hardness	2340B	----	----	----
Chemical Oxygen Demand (COD)	410.4	----	----	565
<b>Major Anions</b>				
Bicarbonate	2310B	----	130	----
Chloride	300	----	40	61
Nitrate – Nitrogen	300	----	4	10
Sulfate	300	----	31	69
<b>Major Cations</b>				
Calcium	200.7/6010	----	31	----
Magnesium	200.7/6010	----	23	----
Potassium	200.7/6010	----	7	----
Sodium	200.7/6010	----	31	----
<b>Dissolved Metals, µg/L<sup>5</sup></b>				
Aluminum	200.7/6010	----	210 <sup>2</sup>	3,050
Antimony	200.7/6010	----	PQL	----
Arsenic	200.9/200.8	----	PQL	----
Barium	200.7/6010	----	90 <sup>2</sup>	254
Beryllium	200.7/6010	----	PQL	----
Boron	200.7/6010	----	170 <sup>2</sup>	----
Cadmium	200.7/6010	----	PQL	----

Chromium	200.7/6010	----	PQL	12
Hexavalent Chromium	7199/1636	----	----	----
Cobalt	200.7/6010	----	PQL	----
Copper	200.7/6010	----	PQL	140
Cyanide	335.4/9010	----	10 <sup>2</sup>	----
Iron	200.9/200.8	----	620 <sup>2</sup>	3,340
Lead	200.9/200.8	----	10 <sup>2</sup>	----
Manganese	200.7/6010	----	2 <sup>2</sup>	579
Mercury	7470A	----	PQL	----
Molybdenum	200.7/6010	----	PQL	----
Nickel	200.9/200.8	----	PQL	138
Selenium	200.9/200.8	----	PQL	----
Silver	200.7/6010	----	PQL	----
Sulfide	9030	----	750 <sup>2</sup>	----
Thallium	200.7/6010	----	PQL	----
Tin	200.7/6010	----	PQL	----
Vanadium	200.7/6010	----	30 <sup>2</sup>	81
Zinc	200.7/6010	----	36 <sup>2</sup>	482

1. "----" means insufficient data to compute CL for this constituent.
2. Interim CL equal to 1.5 x highest concentration historically detected in background well, excluding outlier(s).
3. Interim CL set at 90% tolerance limit estimated by statistical analysis of historical upstream data, excluding outlier(s).
4. Samples shall be filtered prior to performing dissolved inorganics analysis.

**ORGANIC COCs & APPROVED USEPA ANALYTICAL METHODS  
 (CONCENTRATION LIMITS = MDL)**

**Table G.2**

**Volatile Organic Compounds (VOCs)<sup>1</sup> (USEPA Method 8260B)**

Acetone  
 Acetonitrile  
 Acrolein  
 Acrylonitrile  
 Allyl chloride (3-Chloropropene)  
 Tert-Amyl methyl ether  
 Benzene  
 Bromobenzene  
 Bromochloromethane  
 Bromodichloromethane  
 Bromoform (Tribromomethane)  
 Tert-Butyl alcohol

**Table G.2**

n-Butylbenzene  
sec-Butylbenzene  
tert-Butylbenzene  
tert-Butyl ethyl ether  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Chloroprene  
Dibromochloromethane (Chlorodibromomethane)  
1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
m-Dichlorobenzene (1,3-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans-1,4-Dichloro-2-butene  
Dichlorodifluoromethane (CFC-12)  
1,1-Dichloroethane (Ethylidene chloride)  
1,2-Dichloroethane (Ethylene dichloride)  
1,1-Dichloroethylene (1,1-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  
2,2-Dichloropropene  
1,1-Dichloropropene  
cis-1,3-Dichloropropene  
trans-1,3-Dichloropropene  
Ethylbenzene  
Ethyl methacrylate  
Hexachlorobutadiene  
Hexachloroethane  
2-Hexanone (Methyl butyl ketone)  
Iodomethane (Methyl iodide)  
Isobutyl alcohol  
di-Isopropyl ether  
Methacrylonitrile  
Methyl bromide (Bromomethane)  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Methyl chloride (Chloromethane)

**Table G.2**

Methyl ethyl ketone (MEK: 2-Butanone)  
4-Methyl-2-pentanone (Methyl isobutylketone)  
Methyl tert-butyl ether (MtBE)  
Naphthalene  
2-Nitropropane  
n-Propylbenzene  
Propionitrile  
Styrene  
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  
1,2,4-Trimethylbenzene  
1,3,5-Trimethylbenzene  
Vinyl chloride  
Xylenes (total)

**Semi-VOCs<sup>1</sup>** (USEPA Method 8270 - base, neutral, & acid extractables):

Acenaphthene  
Acenaphthylene  
Acetophenone  
2-Acetylaminofluorene (2-AAF)  
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  
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)  
p-Chloroaniline  
p-Chloro-m-cresol (4-Chloro-3-methylphenol)  
2-Chloronaphthalene

**Table G.2**

2-Chlorophenol  
4-Chlorophenyl phenyl ether  
Chrysene  
o-Cresol (2-methylphenol)  
m-Cresol (3-methylphenol)  
p-Cresol (4-methylphenol)  
Dibenz[a,h]anthracene  
Dibenzofuran  
Di-n-butyl phthalate  
3,3'-Dichlorobenzidine  
2,4-Dichlorophenol  
2,6-Dichlorophenol  
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  
Ethyl methanesulfonate  
Famphur  
Fluoranthene  
Fluorene  
Hexachlorobenzene  
Hexachloropropene  
Indeno(1,2,3-c,d)pyrene  
Isophorone  
Isosafrole  
Kepone  
Methapyrilene  
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)

**Table G.2**

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  
2,4,5-Trichlorophenol  
0,0,0-Triethyl phosphorothioate  
sym-Trinitrobenzene

**Organochlorine Pesticides<sup>1</sup>** (USEPA Method 8081A)

Aldrin  
 $\alpha$ -BHC  
 $\beta$ -BHC  
 $\gamma$ -BHC (Lindane)  
 $\delta$ -BHC  
Chlorobenzilate  
 $\alpha$ -Chlordane  
 $\gamma$ -Chlordane  
Chlordane – not otherwise specified  
DBCP  
4,4'-DDD  
4,4'-DDE  
4,4'-DDT  
Diallate  
Dieldrin  
Endosulfan I  
Endosulfan II  
Endosulfan sulfate  
Endrin  
Endrin aldehyde

**Table G.2**

Endrin ketone  
Heptachlor  
Heptachlor epoxide  
Hexachlorocyclopentadiene  
Isodrin  
Methoxychlor  
Toxaphene

**Polychlorinated Biphenols<sup>1</sup>** (PCBs, USEPA Method 8082)

Aroclor 1016  
Aroclor 1221  
Aroclor 1232  
Aroclor 1242  
Aroclor 1248  
Aroclor 1254  
Aroclor 1260

**Organophosphorus Pesticides<sup>1</sup>** (USEPA Method 8141A):

Chlorpyrifos  
Diazinon  
Dimethioate  
Disulfoton  
Ethion  
Famphur  
Malathion  
Parathion  
Parathion-ethyl  
Parathion-methyl  
Phorate

**Chlorinated Herbicides<sup>1</sup>** (USEPA Method 8151A):

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

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1. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte per WDR Monitoring Specification G.14.

## **INFORMATION SHEET**

ORDER NO. R5-2010-0016  
SAN JOAQUIN COUNTY DEPARTMENT OF PUBLIC WORKS  
NORTH COUNTY LANDFILL  
SAN JOAQUIN COUNTY

### **Background**

The North County Landfill is an active, Class III, municipal solid waste (MSW) landfill on East Harney Lane near Atkins Road, approximately nine miles east of Lodi. The landfill has been in operation since 1991, accepting primarily household and commercial wastes. The 320-acre site includes the existing landfill, a materials recovery facility, wetlands area, and a future landfill development area. The landfill currently consists of three waste disposal modules - M1, M3, and M4, covering an area of about 53 acres. Other landfill facilities include storm water drainage systems; leachate collection systems; landfill gas controls; monitoring systems; access roads; maintenance facilities; an office and scale house; pump station; and other facilities. Approximately 400 tons per day (144,000 tons per year) of wastes, including MSW, commercial wastes, and construction and demolition debris were discharged to the landfill in 2008. Approximately 5.3 million cubic yards of waste are estimated to be in place at the landfill.

### **Development Plans**

An additional 132 acres (the remainder of the landfill unit area) are planned for future landfill development. Seven additional modules (M5 through M11) will be constructed in phases for a total of 11 modules at build-out. Development will proceed module-by-module on an as needed basis. The Discharger currently estimates that Module M5 will be constructed in 2012. In addition to lateral expansion, the Discharger is proposing a vertical expansion over existing and future modules to increase landfill capacity. The maximum elevation of fill, including cover, would increase from 190 feet MSL to 320 feet MSL and total landfill capacity would increase from about 20.9 million cubic yards to about 36.9 million cubic yards. The maximum thickness of the fill, including cover, would increase to 148 feet (Module 1) and 254 feet (future modules).

### **Landfill Design**

Module 1 was constructed in 1991 with a pre-Subtitle D containment system consisting of a single 60 mil HDPE liner and geonet blanket LCRS and collection piping. Module 3 was constructed in 1995 with a similar LCRS, but a single composite liner meeting Subtitle D and Title 27 requirements. Module 4 was constructed in 2004 in accordance with a liner performance demonstration and engineered alternative design (EAD) approved under previous WDRs (Order No. R5-2002-0219). The approved EAD included a single composite liner similar to Module 4, but with a gravel LCRS blanket. The Discharger plans to construct future modules consistent with existing approvals for Module 4, or as separately proposed and approved by the Board. Specific designs and construction plans will be submitted for approval as each module is proposed for development.

## **Groundwater**

The average depth to groundwater at the site is about 154 feet bgs (-36.5 feet MSL) with about six (+/-3) feet of seasonal variation. The gradient is typically about 0.004 ft/ft toward the southwest. The upper water-bearing zone occurs in the alluvial deposits of the Turlock Lake and Laguna formations. There are currently six groundwater monitoring wells at the site including one upgradient (G-1), one side gradient (G-2), and four down gradient (Gs-3D, 4, 5 and 6). Monitoring of well G-2 was discontinued in 1997.

In 2002, a VOC release to groundwater consisting primarily of low to trace concentrations of BTEX constituents was confirmed. Subsequent monitoring showed attenuation of the VOCs, however; no VOCs have been detected in groundwater since startup of a LFG extraction system installed as a corrective action measure in 2006. Historical monitoring data for the landfill shows good upper zone groundwater quality, with no indication of impacts from leachate constituents. In the First Half 2008, for example, the maximum concentration of TDS and chloride detected down gradient of the landfill were 160 mg/L and 7 mg/L, respectively.

## **Revised WDRs**

These revised WDRs prescribe updated requirements for landfill construction, operations and monitoring.

### Construction

The WDRs (Construction Specifications 1 and 2) require that future landfill modules be constructed in accordance with Subtitle D; the approved EAD for Module 4; or as separately proposed and approved by the Regional Water Board. Discharge Specification B.1 limits vertical expansion to the maximum proposed elevations for each module under the Discharger's Vertical Expansion Plan, as supported by geotechnical analysis and approved by the Local Enforcement Agency.

### Facilities and Operations

Provision G.8 requires that the Discharger investigate the condition of certain landfill facilities, including manually operated LCRS sumps, lysimeters that have been historically dry, and inactive monitoring well G-2. A report as to the status of these facilities, including work plans and schedules for necessary/required repairs and improvements, must be submitted by **31 March 2010**. (Facility Specification C.4 requires that manually sumps must be upgraded with automatic controls **within two years** of adoptions of this Order.)

Discharge Prohibition A.3 and Discharge Specification B.4 allow the Discharger to continue returning landfill leachate and LFG condensate to Subtitle D-lined modules consistent with liquids restrictions in Title 27 and Subtitle D. The WDRs also prescribe requirements for the handling and disposal of hazardous treated wood waste (TWW) under the California Health and Safety Code (division 20, chapter 6.5, article 5, section 25150.7); and CCR, title 22 (chapter 34, section 67386.2). The WDRs allow the landfill to accept TWW, provided that the discharge is limited to Subtitle D-lined modules and that it is handled in accordance with specified alternative management standards under Title 22. A copy of Title 22, Chapter 34

*Alternative Management Standards for Treated Wood Waste* is attached to this Information Sheet for reference.

#### Financial Assurances

Provision G.9 requires that, by **30 April 2010**, the Discharger submit an updated preliminary closure and postclosure maintenance plan (PCPMP) for the Executive Officer's approval. The PCPMP is required to be updated to reflect current operations and WDR requirements, including vertical expansion plans and cost estimates for closure, postclosure maintenance, and corrective action. Provision G.10 requires that the Discharger maintain financial assurance (F/A) balances with the CIWMB in at least the amount of these cost estimates, while Provision G.11 requires that, by **30 November 2010** and every five years thereafter, the Discharger demonstrate to the Executive Officer that F/As in acceptable amounts and mechanism(s) under Title 27 have been provided to the CWIMB. A copy of the letter of acceptance of the annual F/A demonstration to the CIWMB is also required under the MRP.

#### Monitoring

The monitoring and reporting program (MRP) in the WDRs requires regular facility maintenance inspections and semiannual monitoring of leachate, the unsaturated zone, and groundwater for representative monitoring parameters. Monitoring every five years is required for a longer list of landfill constituents of concern. The MRP also requires that the Discharger perform semiannual surface water monitoring at the site and maintain coverage under the General Industrial Storm Water Permit.

The MRP requires that the Discharger update concentration limits as background data is collected under the MRP. For inorganic COCs (i.e., dissolved metals) for which concentration limits have not yet been developed, the MRP specifies that background monitoring be conducted annually until a sufficient amount of data has been collected for determination of concentration limits. Thereafter, such monitoring may be reduced to every five years. WDR Provision G.12 requires that the Discharger submit an updated WQPS report for the Executive Officer's approval by **31 July 2012**.

#### **Drainage**

The site receives an average of 16.5 inches per year of precipitation. Surface drainage at the site is to South Paddy Creek, tributary to Paddy Creek, Bear Creek, and the San Joaquin River. (JDM)

## Chapter 34. Alternative Management Standards for Treated Wood Waste

### § 67386.1. Scope

(a) This chapter provides an alternative set of management standards in lieu of the requirements for hazardous waste pursuant to articles 6, 6.5, and 9, chapter 6.5, division 20, Health and Safety Code, and chapters 12, 13, 14, 15, 16, 18, and 20 of this division for a person managing treated wood waste (TWW). All other chapters of this division, and section 66264.101, chapter 14, division 4.5, title 22, apply to persons managing TWW.

(b) Nothing in this chapter is a limitation on the power of this or any other governmental agency to adopt or enforce additional requirements related to the management of TWW.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

#### History

1. New chapter 34 (sections 67386.1-67386.4) and section filed 12-27-2006 as an emergency; operative 1-1-2007 (Register 2006, No. 52). A Certificate of Compliance must be transmitted to OAL by 5-1-2007 or emergency language will be repealed by operation of law on the following day.
2. Editorial correction of History 1 (Register 2007, No. 17).
3. New chapter 34 (sections 67386.1-67386.4) and section refiled 4-23-2007 as an emergency; operative 4-30-2007 (Register 2007, No. 17). A Certificate of Compliance must be transmitted to OAL by 8-28-2007 or emergency language will be repealed by operation of law on the following day.
4. Repealer and new section and amendment of Note filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No.25).

### § 67386.2. Applicability

(a) The alternative management standards of this chapter apply only to wood waste that meets all of the following:

- (1) is a hazardous waste pursuant to chapter 11 of this division;
- (2) is a hazardous waste solely due to the presence of a preservative in or on the wood that is registered in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for use as a wood preservative; and
- (3) is not subject to regulation as a hazardous waste under the federal Resource Conservation and Recovery Act (RCRA).

(b) The alternative management standards of this chapter do not apply to wood waste exempted from hazardous waste management standards pursuant to Health and Safety Code section 25143.1.5.

(c) The following wood wastes are not eligible for the alternative management standards of this chapter:

- (1) wood waste that is hazardous due to the presence of coatings, paint, or other treatments that are not registered in accordance with FIFRA for use as a wood preservative; or
- (2) wood waste when designated to be burned.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25143.1.5, 25150.7 and 25150.8, Health and Safety Code.

#### History

1. New section filed 12-27-2006 as an emergency; operative 1-1-2007 (Register 2006, No. 52). A Certificate of Compliance must be transmitted to OAL by 5-1-2007 or emergency language will be repealed by operation of law on the following day.
2. Editorial correction of History 1 (Register 2007, No. 17).
3. New section refiled 4-23-2007 as an emergency; operative 4-30-2007 (Register 2007, No. 17). A Certificate of Compliance must be transmitted to OAL by 8-28-2007 or emergency language will be repealed by operation of law on the following day.
4. Amendment of section heading, repealer and new section and amendment of Note filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 25).

### § 67386.3. Prohibited Activities

(a) TWW managed in accordance with the alternative management standards of this chapter shall not be:

- (1) burned;
- (2) scavenged;
- (3) commingled with other waste prior to disposal, if previously segregated;
- (4) stored in contact with the ground;
- (5) recycled, with or without treatment, except as provided for in subsection (c)
- (6) treated except in compliance with section 67386.10; and
- (7) disposed to land except in compliance with section 67386.11.

(b) Any label or mark that identifies the wood waste as TWW shall not be intentionally removed, obliterated, defaced, or destroyed prior to disposal in a landfill.

(c) TWW may be recycled only by reuse pursuant to conditions specified in (1) – (3) of this subsection. During reuse, the TWW is not subject to sections 67386.5 through 67386.11. TWW may only be reused when all of the following apply:

- (1) reuse is onsite;
- (2) at the time of reuse, reuse is consistent with a FIFRA approved use of the preservative with which the TWW has been treated; and
- (3) prior to reuse, the TWW is handled in compliance with all applicable management standards of this chapter.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

#### History

1. New section filed 12-27-2006 as an emergency; operative 1-1-2007 (Register 2006, No. 52). A Certificate of Compliance must be transmitted to OAL by 5-1-2007 or emergency language will be repealed by operation of law on the following day.
2. Editorial correction of History 1 (Register 2007, No. 17).
3. New section refiled 4-23-2007 as an emergency; operative 4-30-2007 (Register 2007, No. 17). A Certificate of Compliance must be transmitted to OAL by 8-28-2007 or emergency language will be repealed by operation of law on the following day.
4. Amendment of section heading, repealer and new section and amendment of Note filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 25).

#### § 67386.4. Definitions

The definitions set forth in section 66260.10 of this division shall apply unless otherwise defined. The following definitions shall apply to the terms used in this chapter:

"Agent" means a person hired by a generator for the removal, collection, or transportation of TWW.

"Class 1 hazardous waste landfill" means a landfill as defined in section 66260.10, which is also authorized as part of a permitted facility as defined in section 66260.10.

"Composting Facility" means a facility that produces compost as defined in Public Resources Code, section 40116 and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Gasification Facility" means a facility that utilizes a gasification process as defined in Public Resources Code, section 40117 and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Limited Volume Transfer Operation" means an operation that receives less than 60 cubic yards, or 15 tons of solid waste per operating day for the purpose of storing the waste prior to transferring the waste to another solid waste operation or facility and which does not conduct processing activities, but may conduct limited salvaging activities and volume reduction by the operator and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Resizing" means the minimal cutting, breaking, or sawing, but does not include planing, grinding, chipping, sanding, shredding, mulching, or other mechanical handling or any other treatment.

"Small Volume Construction and Demolition/Inert (CDI) Debris Processing Operation" means a site that receives less than 25 tons of any combination of construction and demolition debris and Type A inert debris per operating day for the purposes of storage, handling, transfer, or processing that is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Solid Waste Landfill" means a facility as defined in Public Resources Code, section 40195.1 that is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Transfer or Processing Station" means a facility as defined in Public Resources Code, section 40200 that is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Transformation Facility" means a facility that utilizes a transformation process as defined in Public Resources Code, section 40201 and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Treated wood" means wood that has been treated with a chemical preservative for purposes of protecting the wood against attacks from insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. § 136 and following).

“Treated Wood Waste” means a waste that meets the requirements of section 67386.2(a).

“TWW” means “Treated Wood Waste.”

“TWW approved landfill” means either a class 1 hazardous waste landfill, or a composite-lined portion of a solid waste landfill unit that meets all requirements applicable to disposal of municipal solid waste in California after October 9, 1993, and that is regulated by waste discharge requirements issued pursuant to division 7 (commencing with § 13000) of the Water Code for discharges of designated waste, as defined in section 13173 of the Water Code, or treated wood waste and that is in compliance with this chapter.

“TWW facility” means either:

- (a) a solid waste landfill, as defined in this section, that is in compliance with this chapter; or
- (b) a transfer or processing station, as defined in this section, that is in compliance with this chapter; or
- (c) a gasification facility, as defined in this section, that is in compliance with this chapter; or
- (d) a TWW approved landfill, as defined in this section, that is in compliance with this chapter; or
- (e) a class 1 hazardous waste landfill; or
- (f) Small Volume Construction and Demolition/Inert (CDI) Debris Processing Operation, as defined in this section, that is in compliance with this chapter; or
- (g) Limited Volume Transfer Operation, as defined in this section, that is in compliance with this chapter.

TWW Facility shall not include composting facilities, or transformation facilities.

“TWW handler” means a person who generates, handles, collects, processes, accumulates, stores, transfers, transports, treats, recycles, or disposes of TWW.

“Unit” means a pile, stack, container, bundle, or other discernable aggregation of TWW for purposes of this chapter.

“Wood waste” means all waste timber products and failed timber products including solid sawn lumber and engineered wood products, offcuts, shavings and sawdust that meet the definition of “waste” pursuant to Health and Safety Code section 25124. “Wood Waste” does not mean forest residues, green waste, or garden waste materials such as branches, bushes and tree stumps.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code; Sections 40116, 40117, 40195.1, 40200, and 40201, Public Resources Code; and Section 13173 Water Code.

History

1. New section filed 12-27-2006 as an emergency; operative 1-1-2007 (Register 2006, No. 52). A Certificate of Compliance must be transmitted to OAL by 5-1-2007 or emergency language will be repealed by operation of law on the following day.
2. Editorial correction of History 1 (Register 2007, No. 17).
3. New section refiled 4-23-2007 as an emergency; operative 4-30-2007 (Register 2007, No. 17). A Certificate of Compliance must be transmitted to OAL by 8-28-2007 or emergency language will be repealed by operation of law on the following day.
4. Amendment of section heading, repealer and new section and amendment of Note filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 25).

**§ 67386.5. Labeling**

(a) TWW generated, accumulated, stored, or transported within California shall be clearly marked and visible for inspection. The person managing the TWW shall ensure that each unit and/or area designated for accumulation of TWW is labeled. The area designated for accumulation of TWW shall be clearly identified and used solely for the accumulation of TWW.

(b) In order to clearly identify the nature of the waste to the receiving party and/or any observer, the TWW shall be labeled or marked with the following:

**“TREATED WOOD WASTE – Do not burn or scavenge.**

TWW Handler Name and Address: \_\_\_\_\_

Accumulation Date”. \_\_\_\_\_.”

(c) The TWW handler shall ensure that labels are maintained in compliance with the requirements of subsections (a) and (b) during transport.

(d) TWW accumulated for a period not to exceed thirty (30) days by a household at the site of generation in compliance with the requirements of section 67386.6 is exempt from the labeling requirements of this section.

(e) TWW, generated by a household, while being self-transported to an approved TWW facility is exempt from the labeling requirements of this section if the TWW is identified to the TWW facility as TWW.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

#### HISTORY

1. New section filed 6-18-2007; operative 7-1-2007 pursuant to GovernmentCode section 11343.4 (Register 2007, No. 25).
2. Amendment of subsection (e) filed 10-3-2007; operative 11-2-2007 (Register 2007, No. 40).

#### § 67386.6. Accumulation

(a) TWW shall be maintained in a manner that prevents unauthorized access and minimizes release to the environment.

(1) Unauthorized access shall be prevented by means of visual control or physical barrier when not under the direct control of the person responsible for the TWW.

(2) The TWW shall be accumulated in a manner that is protected from run-on and run-off, and placed on a surface sufficiently impervious to prevent, to the extent practical, contact with and leaching to soil or water, which may be accomplished by one of the following:

(A) Block and Tarp:

The TWW may be accumulated when all the following requirements are met;

1. TWW is elevated to prevent contact with the soil and to protect from reasonably foreseeable run-on;
2. TWW is covered to protect from precipitation; and
3. TWW is accumulated no longer than 90 days from the date the TWW is generated or received from another handler.

(B) Containerize:

The TWW may be accumulated in containers no longer than one year from the date the TWW is generated or received from another handler. The containers shall be;

1. designed, constructed, maintained, filled, its contents so limited, and closed, so that under conditions normally incidental to handling, there will be no identifiable release of TWW materials or its constituents to the environment; and
2. water-resistant if exposed to precipitation, run-on or run-off under reasonably foreseeable conditions.
3. transported to a TWW facility within 90 days of being filled to capacity.

(C) Storage Building:

The TWW shall be accumulated no longer than one year from the date the TWW is generated or received from another handler in a structurally sound building with a water-resistant floor designed to prevent the movement of water into or out of the building.

(D) Containment Pad:

The TWW may be accumulated no longer than 180 days from the date the TWW is generated or received from another handler on a containment surface and all the following requirements are met;

1. TWW does not contact soil;
2. TWW is protected from reasonably foreseeable run-on;
3. TWW is covered to protect from precipitation; and
4. TWW managed in accordance with this subsection may be accumulated uncovered if the containment surface is designed and operated to contain all precipitation and the resulting water is managed in accordance with all applicable laws and regulations.

(E) Other:

The TWW may be accumulated no longer than 90 days from the date the TWW is generated or received from another handler in any other manner in which the TWW handler can clearly demonstrate that the TWW is protected from run-on and run-off, and placed on a surface sufficiently impervious to prevent, to the extent practical, contact with and leaching to soil or water.

(b) Except as provided in subsection (c), in no case shall TWW be accumulated for more than one year from the date of generation or the date received from another handler.

(c) A handler may accumulate TWW for longer than one year from the date the TWW is generated or received from another handler, if the accumulation is solely for the purpose of accumulation of quantities of TWW necessary to facilitate disposal pursuant to section 67386.11. However, the handler bears the burden of proving that the accumulation was solely for the purpose of accumulation of quantities of TWW necessary to facilitate proper disposal.

(d) A person who accumulates TWW shall be able to demonstrate the length of time the TWW has been accumulated from the date it becomes a waste or is received.

(e) TWW generated incidental to the maintenance of a household and accumulated by the resident of the household at the site of generation is exempt from the accumulation requirements of this section if all of the following requirements are met;

- (1) TWW is not physically altered except as provided in section 67386.10; and

- (2) TWW is accumulated no longer than thirty (30) days.
- (f) TWW generated incidental to the operation of a business accumulated at the site of generation for a period not to exceed thirty (30) days is exempt from the accumulation requirements of this section if:
  - (1) TWW is not physically altered except as provided in section 67386.10; and
  - (2) the business accumulates no more than 1,000 pounds of TWW.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

#### History

1. New section filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 25).
2. Amendment of subsections (a)(2)(B)1.-2. and new subsection (a)(2)(B)3. filed 10-3-2007; operative 11-2-2007 (Register 2007, No. 40).

#### § 67386.7. Offsite Shipments

- (a) Except as provided in subsection (c), a TWW handler is prohibited from sending or taking TWW to a place other than a TWW facility, or a TWW approved landfill.
- (b) Prior to sending a shipment of TWW to another TWW handler, the originating handler shall ensure that the receiving handler agrees to receive the shipment.
- (c) A TWW handler who initially collects TWW at a remote site may transport that TWW to a consolidation site operated by the generator if all the following conditions are met:
  - (1) the TWW is transported by the generator, employees of the generator or by the generator's agent;
  - (2) a shipping document containing all of the following information accompanies the TWW while in transport;
    - (A) the quantity, by weight or volume, of TWW being transported;
    - (B) the location of the remote site where the TWW was initially collected;
    - (C) the date that the generator first began to accumulate the TWW at the remote site, the date that the shipment leaves the remote site, and the date that the shipment arrives at the consolidation site;
    - (D) the name, address, and telephone number of the generator, and, if different, the address and telephone number of the consolidation site to which the TWW is being transported; and
    - (E) the name of the individual or individuals who transport the TWW from the remote site to the consolidation site; and
  - (3) the TWW handler shall retain the shipping document described in subsection (c)(2) of this section for at least three years from the date the TWW leaves the TWW consolidation site.
- (d) TWW shall be shipped and/or transported in a manner that prevents unauthorized access; protects the TWW from precipitation; and prevents loss, dispersion, and leaching of TWW constituents.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

#### History

1. New section filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 25).

#### § 67386.8. Tracking Shipments

- (a) Shipments off-site. A TWW handler shall keep a record of each shipment of TWW sent from the handler to TWW facilities. The record may take the form of a log, invoice, manifest, bill of lading, shipping document, or receipt from a TWW facility. The record for each shipment of TWW shall include the following information:
  - (1) name and address of the TWW facility to which the TWW was sent;
  - (2) weight of TWW, the estimated weight of TWW, or the weight of the TWW as measured by the receiving TWW facility. (An estimated weight may be used when a scale is unavailable or weighing is impractical. Assumptions required for weight estimates shall be recorded in the shipment records.); and
  - (3) date the shipment of TWW left the handler.
- (b) Receipt of shipments. A TWW handler shall keep a record of each shipment of TWW received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of TWW received shall include the following information:
  - (1) name and address of the originating TWW generator from whom the TWW was sent;
  - (2) weight of TWW or the estimated weight of TWW. (An estimated weight may be used when a scale is unavailable or weighing is impractical. Assumptions required for weight estimates shall be recorded in the shipment records.); and
  - (3) date of receipt of the shipment of TWW.
- (c) Reporting receipt of shipments. A TWW facility or a TWW approved landfill that receives TWW shall submit, to the department, semi annual reports for the periods ending June 30 and December 31 of each year. Reports shall be required beginning December 31, 2007 and shall be submitted in an electronic format provided by the department within 30 days of the end of each reporting period. Each semi annual report shall include the following information:

- (1) reporting facility information;
  - 1. Facility name, location address, contact person's name, and telephone number; and
  - 2. Identification Number.
- (2) for all TWW shipments received, other than those reported under subsections (3), (4), and (5) the TWW facility shall report the following information;
  - 1. generator's Identification Number, or, if the generator does not have an Identification Number, the name, address, contact person's name, mailing address, and telephone number of the generator;
  - 2. dates of shipments; and
  - 3. weight of TWW per shipment.
- (3) TWW household information;
  - 1. weight summary of all TWW quantities received that were generated by households.
- (4) TWW load check information;
  - 1. Weight summary of all TWW quantities discovered and separated from solid waste as part of an on-site load checking program.
- (5) for shipments received from another TWW facility the following information shall be reported by the receiving TWW facility;
  - 1. TWW facility's Identification Number or the name, address, contact person's name, mailing address, and telephone number of the TWW facility;
  - 2. dates of shipments; and
  - 3. weight of TWW per shipment.
- (d) The department shall make all of the information in the semi annual reports submitted pursuant to this subdivision available to the public, through its usual means of disclosure, except the department shall not disclose the association between any specific TWW handlers and specific facilities. The list of TWW handlers served by a facility shall be deemed to be a trade secret and confidential business information for purposes of Health and Safety Code section 25173 and section 66260.2 of title 22 of the California Code of Regulations.
- (e) Record retention.
  - (1) a TWW handler shall retain the records described in subsection (a) of this section for at least three years from the date the shipment left the handler; and
  - (2) a TWW facility shall retain the records described in subsection (b) of this section for at least three years from the date of receipt of a shipment.
- (f) Households are exempt from the recordkeeping requirements of this section when the TWW is generated incidental to that household.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7, 25150.8 and 25173, Health and Safety Code.

History

- 1. New section filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 25).

**§ 67386.9. Notification**

- (a) In any calendar year that a TWW handler generates more than 10,000 pounds of TWW, the TWW handler shall obtain or maintain an Identification Number within 30 days of exceeding the weight threshold.
- (b) In any calendar year that a TWW handler generates more than 10,000 pounds of TWW the handler shall send written notification to the Department within 30 days of exceeding the 10,000 pound limit.
- (c) The notification shall include;
  - (1) TWW handler's name and mailing address;
  - (2) generator's Identification Number;
  - (3) name and business telephone number of the person at the TWW handler's site who should be contacted regarding TWW management activities;
  - (4) address or physical location of the TWW management activities;
  - (5) date the TWW handler exceeded the 10,000 pound limit; and
  - (6) a statement indicating that the handler is generating more than 10,000 pounds of TWW per calendar year.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

History

- 1. New section filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (register 2007, No. 25).

**§ 67386.10. Treatment**

- (a) Treatment, as defined in Health and Safety Code section 25123.5, of treated wood waste managed in accordance with the alternative management standards of this chapter is prohibited except as provided in subsections (b) and (c).

(b) Resizing is exempt from the permitting requirements of this division when resized to facilitate transport or reuse and the following requirements are met;

(1) TWW shall be handled in a manner that prevents the uncontrolled release of hazardous constituents to the environment; and

(2) if size reduction of the TWW results in sawdust, particles, or other material smaller than one cubic inch, the material shall be captured and managed as TWW.

(c) Sorting and segregating are both exempt from the permitting requirements of this division. The TWW shall be handled in a manner that prevents the uncontrolled release of hazardous constituents to the environment.

(d) An employer resizing, sorting, or segregating TWW shall provide training for all employees handling TWW and all employees that may reasonably be expected to contact TWW. A record of the training shall be maintained for a period of three years and available for review. The training shall include:

(1) all applicable requirements of the California Occupational Safety and Health Act of 1973 (ch. 1, part 1, div. 5 (commencing with § 6300) of the Labor Code), including all rules, regulations, and orders relating to hazardous waste;

(2) procedures for identifying and segregating TWW;

(3) safe handling practices;

(4) requirements of the alternative management standards; and

(5) proper disposal methods.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

#### HISTORY

1. New section filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (register 2007, no. 25).

#### § 67386.11. Disposal

(a) When disposed to land, TWW shall be disposed in either a Class I hazardous waste landfill, or in a composite-lined portion of a solid waste landfill unit that meets all requirements applicable to disposal of municipal solid waste in California after October 9, 1993, and that is regulated by waste discharge requirements issued pursuant to division 7 (commencing with § 13000) of the Water Code for discharges of designated waste, as defined in section 13173 of the Water Code, or TWW.

(b) A solid waste landfill that accepts TWW shall:

(1) comply with the prohibitions in section 67386.3 for handling TWW;

(2) ensure that any management of the TWW at the solid waste landfill prior to disposal complies with the applicable requirements of this chapter;

(3) monitor the composite-lined portion of a landfill unit at which TWW has been disposed. When a release is verified, cease discharge of TWW to that landfill unit until corrective action results in cessation of the release. The landfill shall notify the department that TWW is no longer being discharged to that landfill unit and when corrective action results in cessation of the release; and

(4) handle TWW in a manner consistent with all applicable requirements of the California Occupational Safety and Health Act of 1973 (ch. 1, part 1, div. 5 (commencing with § 6300) of the Labor Code), including all rules, regulations, and orders relating to hazardous waste.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code; and Section 13173 Water Code.

#### HISTORY

1. New section filed 6-18-2007; operative 7-1-2007 pursuant to Government Code section 11343.4 (Register 2007, No. 25).

2. Amendment of subsection (b)(3) filed 10-3-2007; operative 11-2-2007 (Register 2007, No. 40).

#### § 67386.12. Training

(a) An employer managing TWW shall provide training for all employees handling TWW and all employees that may reasonably be expected to contact TWW. A record of the training shall be maintained for a period of three years and available for review. The training shall include:

(1) all applicable requirements of the California Occupational Safety and Health Act of 1973 (ch. 1, part 1, div. 5 (commencing with § 6300) of the Labor Code), including all rules, regulations, and orders relating to hazardous waste;

(2) procedures for identifying and segregating TWW;

(3) safe handling practices;

(4) requirements of the alternative management standards; and

(5) proper disposal methods.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.