

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. \_\_\_\_\_  
MONITORING AND REPORTING PROGRAM  
COUNTY OF PLACER DEPARTMENT OF FACILITY SERVICES  
FORESTHILL LANDFILL  
CLASS III LANDFILL  
POST-CLOSURE MAINTENANCE AND MONITORING  
PLACER COUNTY

The 4.2 acre closed landfill operated from 1966 to 1983 accepting primarily household refuse. The landfill was capped in 1996 with a non-prescriptive soil cover three to five feet thick. Groundwater monitoring has not shown any impacts from the landfill and groundwater quality at the site is good, with total dissolved solids (TDS) and chloride generally detected below 150 mg/L and 30 mg/L respectively. Storm water runoff is directed to perimeter drains that discharge offsite into natural drainage courses tributary to Pond Creek. Storm water discharges from the site, including the adjacent transfer station, are monitored under the General Industrial Storm Water Permit (see Attachment B: Site Map).

Pursuant to Section 20080(g) of Title 27, the Discharger shall maintain water quality monitoring systems for background and detection monitoring. Compliance with this MRP is ordered by Waste Discharge Requirements (WDRs) Order No. \_\_\_\_\_.

**A. SUMMARY OF MONITORING & REPORTING FREQUENCIES**

**Table A**

<b>Section</b>	<b>Reporting</b>	<b>Frequency</b>
B.	1. Semiannual Report	Semiannually
	2. Annual Summary Report	Annually
	3. Constituents of Concern Report	Every 5 years
C.	Water Quality Protection Standard Report	Update as necessary
<b>Section</b>	<b>Monitoring</b>	<b>Frequency</b>
D.	Leachate Monitoring	Same as F.1
E.	Groundwater Monitoring:	
	1. Elevation	Quarterly
	2. Background & Detection Monitoring:	Semiannually/Every two years (See Table E.3.B)
	3. Constituents of Concern	Every 5 years
F.	Facility Monitoring:	
	1. Standard Observations	
	A. Wet Season	Monthly
	B. Dry Season	Quarterly
	2. Maintenance Inspections	Quarterly
	3. After Storm Events	Within 7 Days After Significant Storm Event
	4. Site Winterization	Annually

## **B. REPORTING**

### **1. Semiannual Reports**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required under Order No. \_\_\_\_ and the Standard Provisions and Reporting Requirements (August 1997). Reports shall be submitted **semiannually**. Each semiannual monitoring report shall include the following information:

- A. A compliance evaluation summary for the monitoring period.
- B. A tabular summary of well information from the installation logs, including well name, top-of-casing elevation, total depth, depths/elevations of screened interval, aquifer or zone (i.e. uppermost), and soil type(s) over the screened interval.
- C. The results of groundwater elevation monitoring.
- D. Tabular summaries of monitoring data for each media showing sampling dates, well, constituents, concentrations, and concentration limits. The table shall also clearly show whether new monitoring data exceedances occurred during the monitoring period (i.e. highlight exceedances).
- E. Tables of historical monitoring data for each unit showing well, sampling dates, constituents, concentrations, and concentration limits. The data shall be presented so as to clearly show historical concentrations at each well.
- F. Field and laboratory tests sheets.

### **2. Annual Monitoring Summary Report**

An Annual Monitoring Summary Report (Annual Report) shall also be prepared and submitted in accordance with this section of the MRP and Standard Provisions (*Provision 4, Reports to be Filed with the Board, REPORTING REQUIREMENTS*). The report shall summarize monitoring results for the prior year and include a discussion of compliance with the WDRs and the Water Quality Protection Standard. The report shall also include the following:

- A. Tabular and graphical summaries, including time series plots of historical monitoring data (including the prior year's data) for each monitoring parameter/COC.
- B. An electronic copy of the data in a digital format acceptable to the Executive Officer.
- C. A copy of the Sampling and Analysis Plan referenced in the Standard Provisions (*Provision 1, Provisions for Monitoring*).

The Annual Report may be included in the Second Semiannual Report for each year.

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

**Table B**

<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>

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

The Water Quality Protection Standard (WQPS) shall consist of all Constituents of Concern, Concentration Limits for each constituent of concern, Monitoring Points, Point of Compliance, and the Compliance Period.

**1. Constituents of Concern (Section 20395 of Title 27)**

The constituents of concern (COCs) for the landfill shall be as follows:

**Table C**

<b>Constituents of Concern</b>	<b>Units</b>	<b>Test Method</b>
Field Parameters:	See Attachment D	
General Minerals:	See Attachment D	
Inorganics (dissolved) <sup>1</sup>	µg/L	See Attachment D
Volatile Organic Compounds	µg/L	USEPA Method 8260B
Semi-Volatile Organic Compounds <sup>2</sup>	µg/L	USEPA Method 8270
Organophosphorus Pesticides <sup>2</sup>	µg/L	USEPA Method 8141A
Chlorinated Herbicides <sup>2</sup>	µg/L	USEPA Method 8151
Organochlorine Pesticides <sup>2</sup>	µg/L	USEPA Method 8081A
Polychlorinated Biphenols (PCBs) <sup>2</sup>	µg/L	USEPA Method 8082

1. Five-year monitoring may be discontinued for those COCs not detected during initial five-year monitoring event.
2. Five-year monitoring for these COCs may be discontinued if none detected during initial five-year monitoring event.

COC monitoring under this Order shall be conducted by 15 December 2005 and at least every five years thereafter. Any COC that is confirmed by retest (i.e. per WDR Monitoring Specification E.12) to be a constituent of a release shall be added to the monitoring parameter list (Table 3B herein and Attachment C). In such cases, the Discharger shall also follow the Response to Release requirements of the WDRs (Monitoring Specification E.13) and 1997 Standard Provisions.

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

- a. For VOCs and other organic COCs the concentration limit shall be the MDL.
- b. For inorganic monitoring parameters and COCs for which at least 10% of the data from background samples equal or exceed their respective MDL, the concentration limit shall be determined as follows:
  - i. Using the Prediction Limits statistical procedure applied to historical background data; and/or
  - ii. An equivalent non-parametric procedure where appropriate (e.g. greater than 50

- percent non-detects or data not normally or log normally distributed); and/or
- iii. Using an alternative statistical method approved by Regional Board staff per Monitoring Specification E.9 of the WDRs and the Standard Provisions.
- c. For inorganic monitoring parameters and COCs for which less than 10% of the data from background samples equal or exceed their respective MDL, the concentration limit shall be the PQL.

Statistical concentration limits shall be based on historical background data and updated as necessary to reflect current background conditions. Prior to calculating concentration limits, the historical data shall be screened for trends to ensure that the data used is of a single statistical population (i.e. does not show appreciable variation per Section 20415(e)(10). Concentration limits shall also take into account any seasonality in the data. Concentration limits may be based on intrawell monitoring (i.e. using each well's historical data as background) provided that the historical data is representative of current background conditions.

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

The monitoring points for groundwater monitoring shall be as listed in Table E.3A herein.

**4. Point of Compliance (Section 20405)**

The point of compliance (POC) for the water standard is a vertical surface located at the hydraulically down gradient limit of each Unit that extends through the uppermost aquifer underlying the Unit. The POC wells shall be MWs-2, 5 and any future wells installed along the POC`.

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

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger confirms a new release from the unit.

**D. LEACHATE MONITORING**

The Discharger shall monitor the landfill for leachate seeps **monthly** during the wet season and **quarterly** during the dry season as part of standard observations. Any leachate seeps observed during these inspections or at any other time shall be sampled and analyzed for the constituents of concern referenced in Table C herein. Reporting shall be conducted in accordance with the Standard Provisions (*Provision 3, Reports to be Filed with the Board, REPORTING REQUIREMENTS*).

## **E. GROUNDWATER MONITORING**

### **1. Groundwater 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 upgradient and down gradient 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 determine the following:

- 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

The results of these determinations shall be included in the semi-annual reports.

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

The Discharger shall install and operate a sufficient number of Background Monitoring Points 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 units per Section 20415(b)(1)(A) of Title 27. Background monitoring data analysis shall include developing/updating concentration limits for statistical monitoring parameters and COCs, as necessary. For the purpose of developing concentration limits, each well may serve as its own background.

- A. Monitoring Points: As specified in Table E.3A.
- B. Monitoring Schedule: As specified in Table E.3B.

### **3. Detection Monitoring (Section 20420)**

The Discharger shall install and operate a groundwater detection monitoring system for the purpose of detecting a release from the unit. A sufficient number of samples shall be taken from all Monitoring Points and Background 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 Sampling and Analysis Plan per the Standard Provisions.

- A. The groundwater monitoring points for the landfill disposal area shall be as

follows:

**Table E.3A**  
**Detection Monitoring Wells**

<b>Unit</b>	<b>Upgradient</b>	<b>Downgradient<sup>1</sup></b>	<b>Side Gradient</b>
Landfill	MW-3	MWs 2 and 5	MW-1

1. MW-4 not included because it is a dry well scheduled for abandonment.

The detection monitoring locations shall include any future wells installed along the point of compliance, down gradient, and/or side gradient of the unit in order to monitor the landfill for a release.

**B. Monitoring Schedule**

Groundwater samples shall be collected and analyzed in accordance with the following schedule:

**Table E.3B**  
**Detection Monitoring Schedule**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Elevation	Feet MSL	Quarterly
Specific Conductance	µMhos/cm	Semiannually
pH	pH units	Semiannually
Temperature	°C	Semiannually
Turbidity	NTU	Semiannually
<b>Monitoring Parameters (Attachment C)</b>		
General Minerals		
TDS	mg/L	Semiannually
Chloride	mg/L	Semiannually
Total Alkalinity	mg/L	Semiannually
Total Hardness	mg/L	Semiannually
VOCs	µg/L	Every 2 years
<b>Constituents of Concern</b>		
(Table C and Attachment D)		
		Every 5 years

C. Monitoring Data Analysis

Monitoring data analysis shall include the following:

- a. Background Data
  - Updating concentration limits for statistical monitoring parameters and COCs, as necessary.
- b. Detection Monitoring Data
  - Comparisons with concentration limit to identify whether any exceedances have occurred
  - Comparisons of retest data with concentration limit to confirm whether a release has occurred for a given constituent

The results of the above analysis, including a narrative discussion, shall be included in each semiannual report and summarized in the Annual Report, as specified under Reporting B.2, above. If a release is indicated, the Discharger shall follow the Response to Release procedures per the WDRs (Monitoring Specification E.13) and 1997 Standard Provisions.

F. FACILITY MONITORING

1. Standard Observations

Standard Observations shall be performed **monthly** during the wet season (October 1 to April 30) and **quarterly** during the dry season (May 1 to September 30) and shall include those elements identified in Definition 24 of the Standard Provisions. Each monitoring report shall include a summary and certification of completion of all Standard Observations in accordance with the Standard Provisions (*Provision 2h, Reports to be Filed with the Board, REPORTING REQUIREMENTS*). Field logs of standard observations shall also be included in the report.

2. Regular Maintenance Inspections

Landfill facilities (i.e. monitoring wells) shall be inspected **quarterly** to identify the need for maintenance and repairs. Necessary repairs shall be completed within 30 days of each inspection. Field logs of these inspections and documentation of the repairs shall be included in each semiannual monitoring report.

3. After Storm Events

Within seven days following each significant storm event (i.e. one which produces 3.0 inches or more of precipitation within a 24-hour period, as measured at the Foresthill Station), the Discharger shall inspect the landfill cover and precipitation and drainage facilities for damage. Areas of erosion or sedimentation observed during the inspection(s) shall be flagged and repaired within seven days of identification. If repairs cannot be completed within the seven-day time frame, the Discharger shall notify the Regional Board of such and provide a schedule for completing necessary repairs. Findings and repairs implemented as a result of these inspections shall be included in each semiannual monitoring report. If no inspection was conducted because

there was no significant storm event during the semiannual period, the report shall state such fact.

**4. Site Winterization**

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility for the purpose of winterizing the site. The inspection shall identify any damage to the landfill cover, grade, precipitation and drainage controls, access roads and other landfill facilities. Any necessary construction, maintenance, or repairs to these facilities shall be completed by **31 October**. The Discharger shall document the results of the winterization inspection and any repair measures implemented in the Annual Report due by **31 January** of each year.

Documentation of the results of the above inspections and any repairs implemented shall include field observations, the location of any damage observed (i.e. on a site map), photographs of the damage, and a description of any repairs implemented, including post-repair photographs.

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

Ordered by: \_\_\_\_\_  
THOMAS R. PINKOS, Executive Officer

\_\_\_\_\_  
(Date)

Attachments  
JDM: