

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION  
895 Aerovista Place, Suite 101  
San Luis Obispo, California 93401-7906

**MONITORING AND REPORTING PROGRAM NO. R3-2007-0022**  
Waste Discharger Identification No. 3 270300008

**FOR**  
**JOLON ROAD CLOSED CLASS III LANDFILL**  
**Monterey County**

**PART I: MONITORING AND OBSERVATION SCHEDULE**

Unless otherwise indicated, all monitoring and observations shall be reported as outlined in **Part IV**.

**A. SITE INSPECTIONS**

The Discharger shall inspect the Jolon Road Class III Landfill (hereafter "landfill"), in accordance with the following schedule, and record at a minimum, the **Standard Observations** as defined in **Part V**.

1. Site Inspection Schedule:

- a. During the wet season (October through April), following each storm that produces storm water runoff and discharge, with inspections performed at least monthly.
- b. During the dry season, a minimum one inspection each **three month period**.

2. Standard Observations

- a. At the landfill, which includes inspections at the Waste Management Units (WMUs), along the perimeter of the WMUs and the Recycle Area.
  - i. Whether storm water drainage ditches and sediment/retention basins contain liquids.
  - ii. Evidence of liquid leaving or entering the landfill.
  - iii. Evidence of odors.
  - iv. Evidence of ponding over the WMUs.
  - v. Evidence of erosion
  - vi. Evidence of waste in the drainage system (e.g., ditches and sediment basins).
  - vii. Inspection of storm water discharge locations for evidence of non-storm water discharges during dry season.
  - viii. Integrity of drainage systems during wet season.
- b. For Receiving Waters
  - i. Floating and suspended materials of waste origin.
  - ii. Discoloration and turbidity.

- iii. Evidence of odors.
- iv. Evidence of beneficial use – presence of water-associated wildlife.
- v. Flow rate to the receiving water.

## B. LEACHATE AND DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect all leachate collection and treatment systems and record the following information:

1. **Monthly** - Leachate containment and collection system integrity, surface water collection and drainage system integrity, cover soil and vegetation integrity, record volume of leachate collected (in gallons) and disposal method used;
2. **Annually** – Leachate collection and removal system testing and demonstration, as required by Title 27 §20340(d), results as part of the Annual Summary Report required by this Monitoring and Reporting Program (hereafter “MRP”), Part IV.B. Results of annual testing shall be developed in a manner that makes one year’s test comparable to previous and subsequent test. The absence or presence of biofouling shall be specifically addressed in the inspection report.
3. **Additional Inspections**- the Discharger shall inspect all drainage control systems following each runoff-producing storm event and record the following information:
  - a. Whether stormwater storage basins and drainage ditches contain liquids; including stored volumes;
  - b. Evidence of erosion of the cover soils;
  - c. Any apparent seepage from the storage basins;
  - d. General conditions of the stormwater facilities, ditches; and
  - e. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the General Permit are properly implemented.
  - f. Steps taken to correct any problems found during inspection and date(s) when corrective action was taken.

## C. RAINFALL DATA

The Discharger shall record the following information:

1. Total precipitation, in inches, during each **three month period**; and,
2. Precipitation, in inches, during the most intense twenty-four hour interval of each **three-month period**.

## D. EVAPOTRANSPIRATIVE COVER PERFORMANCE MONITORING

The following requirements apply during the first five years following the completion of final cover construction:

1. **Soil Moisture Analyses**- Soil moisture profiles shall be monitored at location(s) established by the final closure plan or plans and specifications as approved by the Water Board. Moisture shall be monitored using solid state electronic monitoring devices installed to report soil moisture content at six-inch vertical intervals within the cover section with one monitoring point

located at the base of the cover. Monitoring probes shall be standard of practice soil moisture monitoring instruments calibrated and installed to the manufacturer's specifications. To account for scale effects in permeability, and to minimize probe interference, the probe at each depth will be offset from the adjacent probe. A data logger shall be incorporated to collect and store soil moisture data on an hourly basis.

2. Climatological Data- A local climatological data station in King City may be used to collect daily values of solar radiation, windspeed and direction, relative humidity, temperature, and precipitation for purposes of estimating potential evapotranspiration; however, these data must correlate with local site conditions. Some parameters, such as wind speed, may not correlate such that instrumentation at the landfill is necessary to collect representative measurements.
3. Vegetation Data- On an annual basis, visually estimate the vegetation coverage and vegetative health over the finished surface and compare the observed condition to the initial model assumptions.
4. Soil Profile Data- On an annual basis, visually inspect the cover over at least three transects and describe the surface soil conditions, including any evidence of preferential pathways for percolation of moisture.
5. Runoff- Measure and log hourly runoff rates via a weir or equivalent device that is equipped with an automated logging device, located at the culmination of the landfill drainage system.

#### E. ANALYTICAL MONITORING AND MONITORING LOCATIONS

The Discharger shall monitor the landfill in accordance with the following schedule(s). Monitoring locations are shown on Attachment 1. The Discharger shall comply with the sampling, analyses, and reporting requirements discussed in Part II, III, and IV of this monitoring and reporting program. Semiannual monitoring will be performed **each March/April and September/October**.

##### 1. Analytical Parameters

The Discharger shall analyze all samples from all groundwater and surface water Monitoring Points at the landfill for the Analytical Parameters listed in Table 1, except as noted.

**Table 1. Analytical Parameters**

Parameter	USEPA Method <sup>(1)</sup>	Units
Chloride	300.0	mg/L
Dissolved Oxygen	Field	mg/L
Electrical Conductivity <sup>(2)</sup>	Field	µmhos/cm
Nitrate Nitrogen <sup>(3)</sup>	9200	mg/L
pH <sup>(2)</sup>	Field	Units
Potassium (dissolved)	6010	mg/L
Sodium (dissolved)	6010	mg/L
Sulfate	300.0	mg/L
Temperature <sup>(2)</sup>	Field	°F/C
Total Dissolved Solids	160.1	mg/L
Turbidity <sup>(2)</sup>	Field	NTU
Volatile Organic Compounds <sup>(3)</sup>	8260B	µg/L

## Footnotes:

- (1) Upon receiving prior acceptance by the Central Coast Water Board Executive Officer, an equivalent analytical method can be used.
- (2) These are field parameters as defined by CCR Title 27 §20415(e) 13.
- (3) Monitoring Parameter as defined by Title 27 §20420(e). Includes all Volatile Organic Compounds (VOCs) detectable using USEPA Method 8260B, including at least all 47 organic constituents listed in Appendix I to 40 CFR, 258 (Subtitle D), MTBE, and all unidentified peaks.

2. Description of Monitoring Points

**Groundwater:** In accordance with 40 CFR 258.40(d), and Title 27, the Point of Compliance shall be no more than 150 meters (492 feet) from the waste management unit boundary (hereafter "WMUB") and shall be located on land owned/leased by the Discharger. The nine groundwater Detection Monitoring Points (hereafter "DMP") for this landfill are described as follows (also refer to Attachment 1):

- JR-J2, JR-J17, JR-J18, and JR-J19 shall serve as Point of Compliance wells and are located at eastern end of the WMUB;
- JR-J3, JR-J4, and JR-J15 shall serve as downgradient monitoring points and are located northeastern end of the WMUB; and,
- JR-J1, and JR-J10 shall serve as background monitoring point and are located at the western and northwestern, respectively, end of the WMUB.

**Surface Water Monitoring:** Surface water samples from the spring discharge shall serve as a Monitoring Point. The spring is located at the toe of the east-facing slope of Module 1 (refer to Attachment 1). If groundwater seep(s) in and around the sediment basin show appreciable discharge, and are suspected of being impacted, the Water Board may also require sampling of the seeps.

**Landfill Gas:** Gas monitoring probes JR-G1, G2, G3 and G4 shall be monitored (refer to Attachment 1 for locations). See provision E.5.b below for landfill gas Monitoring Period and Monitoring Parameters.

3. Monitoring Frequency

Sampling and analyses of all Detection Monitoring Points shall be conducted at least once during each Monitoring Period listed in **Table 2**.

**Table 2. Monitoring Points and Monitoring Periods**

Detection Monitoring Point	Monitoring Purpose			Monitoring Periods		
	Monitoring Parameters	Water Levels	COCs <sup>(1)</sup>	Semiannual <sup>(2)</sup>	Annually <sup>(3)</sup>	Five Year
JR-J1	X	X	X	X		X
JR-J2	X	X	X	X		X
JR-J3	X	X	X	X		X
JR-J4	X	X	X	X		X

Detection Monitoring Point	Monitoring Purpose			Monitoring Periods		
	Monitoring Parameters	Water Levels	COCs <sup>(1)</sup>	Semiannual <sup>(2)</sup>	Annually <sup>(3)</sup>	Five Year
JR-J5	X <sup>(4)</sup>	X	X <sup>(4)</sup>	X <sup>(4)</sup>		X <sup>(4)</sup>
JR-J10	X	X	X	X		X
JR-J15	X	X	X	X		X
JR-J16		X	X	X		X
JR-J17	X	X	X	X		X
JR-J18	X	X	X	X		X
JR-J19	X	X	X	X		X
Spring	X		X	X		X
Leachate	X		X		X	X

(1) COCs are sampled once every five years as discussed in Part I.E.2, except as provided under Part III.D.

(2) Semiannual monitoring shall be performed each March/April and September/October, except as provided under Part III D.

(3) Annual monitoring shall be performed March/April of each year.

(4) Monitoring shall be performed when Concentration Limits are exceeded in JR-J4 for any Monitoring Parameters or COC.

#### 4. Constituents of Concern Monitoring

Constituents of Concern (COC) are listed in Table 3, and either directly includes or includes by reference all constituents list in Appendix II in 40 CFR, Part 258. Analysis of COCs shall be carried out **once every five years** at each of the site's groundwater monitoring points. If there is an indication of release (**Part IV.C.4**) monitoring for COC is also required. The COC monitoring shall be carried out in the fall of one year and the spring of the fifth year. The next COC sampling is scheduled for spring of 2011. DMPs that have not previously been sampled for COCs shall be sampled and analyzed for all COCs within three months of this program becoming effective.

**Table 3. Constituents of Concern <sup>(1)</sup>**

CONSTITUENTS	USEPA METHOD	UNITS
Antimony	7060	mg/L
Arsenic	7060	mg/L
Barium	6010	mg/L
Beryllium	6010	mg/L
Cadmium	6010	mg/L
Chromium	6010	mg/L
Cobalt	6010	mg/L
Copper	6010	mg/L

Cyanide	9010	mg/L
Lead	7421	mg/L
Mercury	7470	mg/L
Nickel	6010	mg/L
Selenium	7740	mg/L
Silver	6010	mg/L
Sulfide	9030	mg/L
Thallium	7841	mg/L
Tin	6010	mg/L
Vanadium	6010	mg/L
Zinc	6010	mg/L
Chlorophenoxy Herbicides	8150	µg/L
Nonhalogenated Volatiles	8015	µg/L
Organochlorine Pesticides and PCBs	8080	µg/L
Phthalate Esters	8060	µg/L
Organophosphorous Pesticides	8141A	µg/L
Phenols	8040	µg/L
Semi-Volatile Organic Compounds	8270C	µg/L
Volatile Organic Compounds	8260B	µg/L

- (1) The Discharger shall analyze for all constituents using the USEPA analytical methods indicated above, including all constituents listed in Appendix II to 40 CFR, Part 258 (Subtitle D).

#### 5. Collection System Performance

##### a. The Leachate Collection and Removal System:

Currently, only the landfill's Module 4A is equipped with a leachate collection and removal system (LCRS). The LCRS operates under gravity. The leachate is collected in an above ground storage tank located near the landfill's scale house. The total volume of leachate collected each month since the previous monitoring report shall be recorded [per CCR Title 27 §20340(h)] and reported semiannually. Quarterly and cumulative totals shall be prepared in tabular and graphical formats semiannually. Disposal method of all collected volumes shall be reported. Leachate shall be analyzed for the Monitoring Parameters (Table 1) annually and for COCs (Table 3) every five years, **beginning in September/October 2006.**

##### b. Landfill Gas Collection System:

No landfill gas collection system exists at the landfill. However, onsite structures (i.e., Scale/Office and Maintenance shop) adjacent to the waste deposit areas shall be monitored quarterly for percent methane concentration. Gas monitoring probes JR-G1, G2, G3 and G4 shall be monitored for methane, carbon dioxide and oxygen quarterly. Monitoring results shall be submitted to the Board in semiannual reports and include information specified in Title 27, §20934.

#### 6. Storm Water Monitoring

Storm Water Monitoring shall be conducted in accordance with the site specific Storm Water Pollution Prevention Plan, under the State Water Resources Control Board's general

stormwater permit for industrial activities. Up to two stormwater samples shall be collected during the wet season, with the first sample collected after the first rainfall event of the season having an associated discharge (during normal business hours). A second sample shall be collected after a subsequent rainfall event that results in an offsite discharge. Samples are collected from a location directly below the sediment retention pond outfall. Sediment removed from the sediment retention basin must be properly characterized and disposed or returned to a location inside of the landfill drainage system.

7. Groundwater Flow Rate and Direction

The Discharger shall measure the water level in each the eleven DMP wells at least once during the monitoring period during approximate times of expected highest and lowest elevations of the water level. The Discharger shall also determine horizontal and vertical gradients, groundwater flow rate, and flow direction for each respective groundwater body.

8. Sample Procurement Limitation

For any given monitored medium, samples taken from Monitoring Points to satisfy the data analysis requirements for a given Monitoring Period shall be taken within a span not exceeding 30 days, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

## **PART II: SAMPLE COLLECTION AND ANALYSIS**

### **A. SAMPLING AND ANALYTICAL METHODS**

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard U.S. Environmental Protection Agency (USEPA) methods (USEPA publication "SW-846"), and in accordance with a sampling and analysis plan approved by the Water Board's Executive Officer. All water analyses shall be performed by a laboratory certified for these analyses by the State of California Environmental Laboratory Program. Specific methods of analysis must be identified. The director of the laboratory whose name appears in the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Board. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from Monitoring Points meets the following restrictions:

1. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., trace) in historical data for that medium, the analytical method having the lowest Method Detection Limit (MDL) shall be selected.
2. Trace results (results falling between the MDL and the Practical Quantitation Limit) shall be reported as such.
3. MDLs and Practical Quantitation Limits (PQLs) shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits are defined in Part V and shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory suspects that, due to a change in matrix or their effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived

values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.

4. Quality Assurance and Quality Control (QA/QC) data shall be reported along with the sample results to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include:
  - a. Method, equipment, and analytical detection limits.
  - b. Recovery rates, an explanation for any recovery rate that is outside the USEPA-specified recovery rate.
  - c. Results of equipment and method blanks.
  - d. Results of spiked and surrogate samples.
  - e. Frequency of quality control analysis.
  - f. Chain of custody logs.
  - g. Name and qualifications of the person(s) performing the analyses.
5. QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.
6. Non-targeted chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When significant unknown peaks are encountered, second column or second method confirmation procedures shall be performed in attempt to identify and more accurately quantify the unknown analyte(s).

## **B. CONCENTRATION LIMIT DETERMINATION**

1. For the purpose of establishing Concentration Limits for COC and Monitoring Parameters detected in greater than ten percent of a medium's samples the Discharger shall:
  - a. Statistically analyze existing monitoring data (Part III), and propose, to the Executive Officer, statistically derived Concentration Limits for each COC and each Monitoring Parameter at each Monitoring Point for which sufficient data exist.
  - b. In cases where sufficient data for statistically determining Concentration Limits do not exist, the Discharger shall collect samples and analyze for COC and Monitoring Parameter(s) as required. Once sufficient data are obtained, the Discharger shall submit proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.
  - c. Sample and analyze new Monitoring Points, including any added by this Order, until sufficient data are available to establish a proposed Concentration Limit for all COC and Monitoring Parameters. Once sufficient data are obtained, the Discharger shall submit the proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.
2. Once established, concentration limits shall be reviewed annually by the Discharger. The past year's data will be reviewed for application to revision of concentration limits. When appropriate, new concentration limits shall be proposed.

### **C. RECORDS TO BE MAINTAINED**

Records shall be maintained in accordance with CCR Title 27 §21720(f). Analytical records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. The period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Officer. Such records shall show the following of each sample:

1. Identification of sample, Monitoring Point from which the sample was taken, and individual that obtained the sample.
2. Date and time of sampling.
3. Date and time that analyses were started and completed, and the name of personnel performing each analysis.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Results of analyses, and Method Detection Limit and Practical Quantitation Limit for each analysis.
6. A complete chain of custody log.

## **PART III: STATISTICAL AND NON-STATISTICAL ANALYSIS OF DATA**

### **A. METHOD DETERMINATION**

The most appropriate statistical method(s) shall be used to determine if there has been a release from the landfill. For each constituent of concern, the Discharger shall first determine if statistical analysis is possible based on the relative frequency the constituent is detected in background data set. Constituents for which no statistical method is appropriate shall be analyzed by the non-statistical method. If the initial analysis tentatively indicates the detection of a release, the Discharger shall implement the appropriate retest procedure in Part III.D. of this Monitoring and Reporting Program.

### **B. STATISTICAL ANALYSIS**

For Detection Monitoring, the Discharger shall use statistical methods to analyze COC and Monitoring Parameters that exhibit concentrations that equal or exceed their respective MDL in at least ten percent of applicable historical samples. The Discharger may propose and use any statistical method that meets the requirements of California Code of Regulations, Title 27, §20414(e)(7). All statistical methods and programs proposed by the Discharger are subject to Executive Officer approval.

### **C. NON-STATISTICAL METHOD**

The Discharger shall use the following non-statistical method for analyzing constituents, which are detected in less than 10% of applicable historical samples. This method involves a two-step process:

1. From constituents to whom the method applies, compile a specific list of those constituents, which exceed their respective MDL. The list shall be compiled based on either data from the single sample, or in cases of multiple independent samples, from the sample that contains the largest number of constituents.

2. Evaluate whether the listed constituents meet either of two possible triggering conditions: 1) Either the list from a single well contains two or more constituents above the MDL, or 2) it contains one constituent that equals or exceeds its Practical Quantitation Limit. If either condition is met, the Discharger shall conclude that a release is tentatively indicated and shall immediately implement the appropriate re-test procedure under Part III.D.

#### D. RE-TEST PROCEDURE

1. In the event that the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the reporting requirements of Part IV.C.2 and, within 30 days of receipt of analytical results, collect two new suites of samples for the indicated COC or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per Monitoring Point as were used for the initial test.
2. Analyze each of the two suites of re-tested data using the same statistical method (or non-statistical comparison) that provided the tentative indication of a release. If the test results of either (or both) of the re-tested data suites confirm the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the requirements of Part IV.C.
3. Re-tests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the COC for Monitoring Parameter(s) which triggered the indication. When an analyte of the VOC composite parameter is re-tested, the results of the entire VOC composite shall be reported. A release is indicated if the originally detected VOC analyte(s) is confirmed in either (or both) of the re-test samples.

### PART IV: REPORTING

#### A. MONITORING REPORT

A written Monitoring Report shall be submitted semiannually by **January 31 and July 31** of each year. Monitoring Reports shall be submitted in an electronic format that is compatible with Geotracker, as stipulated by California State law. In addition, the monitoring reports will be submitted in electronic format with text, tables, figures, laboratory analytical data, and appendices placed on a compact disc in PDF format. Accompanying the electronic version of the report will be a hard copy transmittal letter, with signatures of preparers and submitters (in accordance with Provisions of Waste Discharge Requirements Order No. R3-2007-0022), along with an abstract of the report text. The Monitoring Report shall address all facets of the landfill's monitoring. Reports shall include, at a minimum, the following:

1. Letter of Transmittal  
A letter transmitting the essential points shall accompany each report. The letter shall include a discussion of violations that occurred since the last such report was submitted. If no new violations have been discovered since the last submittal, this shall be stated in the transmittal letter. The monitoring report and the transmittal letter shall be signed by a principal executive officer at the level of vice president. Upon Water Board Executive Officer approval, the cited signature can be by a California Registered Civil Engineer or Certified Engineering Geologist who has been given signing authority by the cited signatories. The transmittal letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

2. Compliance Summary

The update shall contain at least:

- a. Discussion of compliance with concentration limits. Release indications and actions taken.
- b. For each monitored groundwater body, calculate groundwater velocity and, based upon water level elevations taken during the Monitoring Period, graphically present groundwater flow direction under and around the Unit.

3. Graphical Presentation of Analytical Data

For each Monitoring Point in each medium, submit, in graphical format, the complete history of laboratory analytical data. Graphs shall effectively illustrate trends and/or variations in the laboratory analytical data and physical parameters (field data). Each graph shall plot a single constituent concentration over time at one (for intra-well comparison) or more (for inter-well comparisons) monitoring points in a single medium. Maximum contaminant levels (MCL) and/or concentration limits shall be graphed along with constituent concentrations where applicable. When multiple samples are taken, graphs shall plot each datum, rather than plotting mean values.

4. Corrective Action Summary

Discuss significant aspects of any corrective action measures conducted during the monitoring period. Calculate pollutant load removed from the sites impacted media by mass (water, gas, and leachate) removal system(s). Mass removal calculations shall be based on actual analytical data as required by Part I.F. Present discussion and indications, relating mass removal data to the violation the corrective action is addressing and method of disposal. Include a graphical display of estimated capture zones in all media.

5. Laboratory Results

Laboratory results and statements demonstrating compliance with Part II and results of analyses performed at the landfill, outside the requirements of this Monitoring and Reporting Program, shall be summarized and reported.

6. Sampling Summary

- a. For each Monitoring Point addressed by the report, a description of: 1) the method and time of water level measurement; 2) the method of purging and purge rate and well recovery time; and 3) field parameter readings.
- b. For each Monitoring Point addressed by the report, a description of the type of sampling device used, its placement for sampling, and a description of the sampling procedure (number of samples, field blanks, travel blanks, and duplicate samples taken; the date and time of sampling; the name and qualification of the person actually taking the samples; description of any anomalies).

7. Standard Observations & Dewatered Sludge

A summary of Standard Observations made and dewatered sludge information collected (Part I) during the Monitoring Period.

8. Map(s)

A map or an aerial photograph showing Monitoring Points, relative physical features, and with groundwater contours overlaid on the map or the aerial photograph to the greatest degree of accuracy possible.

9. Proof of Notice to "Affected Persons"
  - a. Copy of mailing list of "Affected Persons."
  - b. Copy of letter sent to "Affected Persons."
  
10. Evapotranspirative Cover Performance Evaluation
  - a. Collect Part I.D water balance parameter data over a five-year duration following completion and acceptance of final cover construction by the Executive Officer.
  - b. Provide the Water Board Part I.D parameter data on a semiannual basis; in addition, provide tables, graphs, and preliminary performance evaluation in two biannual reports.
  - c. At the end of the five-year monitoring period, model unsaturated zone soil moisture variability using rigorous unsaturated flow software (such as UNSAT-H, or an equivalent computer code) and representative soil permeabilities and soil-moisture characteristic curves.
  - d. Use the results of Part 10.c modeling to check the integrity of the model by comparing the simulated versus actual moisture contents. If observed field conditions (moisture content, vegetation, soil permeability) are not accurately represented by the design model, or if modeling does not mimic the moisture contents observed, then the model shall be re-calibrated using updated input parameters.
  - e. Once consistency is achieved between the simulated and monitored data, compare the flux performance of the alternative to the prescriptive standard cover section, using actual water balance parameter data, and data from relative wet periods in the climatological record (if necessary). Provide the results in one final report at the end of the five-year monitoring period.
  - f. If modeling results in percolation estimates that exceed the prescriptive performance criteria, then the Discharger shall develop a final cover evaluation report including recommendations for mitigation of observed cover conditions in accordance with the submittal requirements for an evaluation monitoring program and engineering feasibility study (Section 20415, CCR Title 27).

## **B. ANNUAL SUMMARY REPORT**

The Discharger shall submit an annual report to the Board covering the previous monitoring year. The annual Monitoring Period ends on December 31 each year. This report may be combined with the first Semiannual Monitoring Report of the year and shall be submitted no later than **March 31 each year**. The annual report must include the information outlined above and the following;

1. Discussion

Include a comprehensive discussion of the compliance record, a review of the past year's significant monitoring system and operational changes, a summary of corrective action results and milestones, and a review of construction projects, with water quality significance, completed or commenced in the past year or planned for the up-coming year.
2. Affected Persons Notification

Copy of the annual notice to Affected Persons (Part IV.C.5.c) and mailing list.
3. Statistical Limit Review

Statistically derived concentration limits shall be reviewed annually and revised as necessary. Data collected during the past year shall be discussed and considered for inclusion in, and determination of, proposed limits for the coming year. For statistical limits that are changed from the previous year, include a comprehensive discussion of the proposed limit for Executive Officer review and consideration.

4. Analytical Data  
Complete historical analytical data presented in a tabular form, on compact disk and in Excel™ format or another file format acceptable to the Executive Officer.
5. Map(s)  
A map, or set of maps, that indicate(s) the type of cover material in place (final, long-term intermediate, or intermediate) over inactive and completed areas.

### C. CONTINGENCY RESPONSE

1. Leachate Seep  
The Discharger shall, within 24 hours, report by telephone concerning the discovery of previously unreported seepage from the disposal area. A written report shall be filed with the 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., pertinent observations and analysis).
  - d. A summary of corrective measures both taken and proposed.
2. Responses to an Initial Indication of a Release  
Should the initial statistical or non-statistical comparison (under Part III. A or B) indicate that a new release is tentatively identified, the Discharger shall:
  - a. Within 24 hours, notify the Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved.
  - b. Provide written notification by certified mail within seven days of such determination.
  - c. Either of the following:
    - i. Shall carry out a discrete re-test in accordance with Part III.C. If the re-test confirms the existence of a release or the Discharger fails to perform the re-test, the Discharger shall carry out the requirements of Part IV.C.4. In any case, the Discharger shall inform the Board of the re-test outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days, or;
    - ii. Make a determination, in accordance with Title 27, §20420(k)(7), that a source other than the waste management unit caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone.
3. Physical Evidence of a Release  
If either the Discharger or the Executive Officer determines that there is significant physical evidence of a new release pursuant to Title 27, §20385(a)(3), the Discharger shall conclude that a release has been discovered and shall:
  - a. Within seven days notify the Executive Officer of this fact by certified mail (or acknowledge the Executive Officer's determination).
  - b. Carry out the requirements of Part IV.C.4. for potentially affected medium.
  - c. Carry out any additional investigations stipulated in writing by the Executive Officer for the purpose of identifying the cause of the indication.
4. Release Discovery Response  
If the Discharger concludes that a new release has been discovered the following steps shall be carried out:

- a. If this conclusion is not based upon monitoring for COC, the Discharger shall sample for COC at Monitoring Points in the affected medium. Within seven days of receiving the laboratory analytical results but not more than 30-days from the sampling date, the Discharger shall notify the Executive Officer, by certified mail, of the concentration of COC at each Monitoring Point. This notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration.
  - b. The Discharger shall, within 90 days of discovering the release, submit to the Executive Officer a Revised Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that:
    - (1) Meets the requirements of Title 27, §20420 and §20425.
    - (2) Satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well directly down-gradient of the center of the release.
  - c. The Discharger shall, within 180 days of discovering the release, submit to the Executive Officer a preliminary engineering feasibility study meeting the requirements of Title 27, §20420.
  - d. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the Discharger can meet the requirements of Title 27, §20425 to submit a delineation report within 90 days of when the Executive Officer directs the Discharger to begin the Evaluation Monitoring Program.
5. Release Beyond Facility Boundary
- Any time the Discharger or the Executive Officer concludes that a release from the Unit has proceeded beyond the facility boundary, the Discharger shall so notify persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons) as follows:
- a. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.
  - b. Subsequent to initial notification, the Discharger shall provide updates to Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.
  - c. Annually, the Discharger shall notify Affected Persons concerning the status of the release and corrective action.
  - d. Each time the Discharger sends a notification to Affected Persons (under a. or b. above), the Discharger shall, within seven days of sending such notification, provide the Executive Officer with both a copy of the notification and a current mailing list of Affected Persons. In the case of annual notification to Affected Persons (c. above), notification to the Executive Officer is via the Annual Report.

## **PART V: DEFINITION OF TERMS**

### **A. AFFECTED PERSONS**

Individuals who either own or reside upon the land which directly overlies any part of that portion of a gas or liquid phase release that may have migrated beyond the facility boundary.

### **B. CONCENTRATION LIMITS**

The Concentration Limit for any given COC or Monitoring Parameter in a given monitored medium shall be either:

1. The constituent's statistically determined background value or interval limit, established using an Executive Officer approved method (Part III); or
2. In cases where the constituent's MDL is exceeded in less than 10% of historical samples, the MDL is the concentration limit defined in **Part II. A.1.**

**C. CONSTITUENTS OF CONCERN (COC)**

A broad list of constituents likely to be present at this landfill, as listed in Table 3.

**D. MATRIX EFFECT**

Any increase in the MDL or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

**E. METHOD DETECTION LIMIT (MDL)**

The lowest concentration at which a given laboratory, using a given analytical method to detect a given constituent, can differentiate with 99% reliability, between a sample which contains the constituent and one which does not. The MDL shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory.

**F. MONITORED MEDIUM**

Those media that are monitored pursuant to this Monitoring and Reporting Program (groundwater, surface water, liquid, leachate, gas condensate, and other as specified).

**G. MONITORING PARAMETERS**

A short list of constituents and parameters used for the majority of monitoring activities. The Monitoring Parameters for this Unit are listed in **Part I. F.**

**H. MONITORING PERIOD (frequency)**

The duration of time during which a sampling event must occur. Monitoring Period for analysis of all Constituents of Concern is five years; the Monitoring Period for the Monitoring Parameters is semiannual.

**I. MONITORING POINT**

A well, device, or location specified in the waste discharge requirements (WDR) at which monitoring is conducted.

**J. MUNICIPAL SOLID WASTE LANDFILL UNIT OR UNIT**

A discrete area of land or an excavation that receives waste and may be a new unit, an existing unit or a lateral expansion.

**K. POINT OF COMPLIANCE**

A vertical surface located at the hydraulically downgradient limit of a waste management unit (Unit) and that extends through the uppermost aquifer underlying the Unit.

**L. PRACTICAL QUANTITATION LIMIT (PQL)**

The lowest acceptable calibration standard (acceptable as defined for a linear response or by actual curve fitting) times the sample extract dilution factor times any additional factors to account for Matrix Effect. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. Laboratory derived PQLs are expected to closely agree with published USEPA estimated quantitation limits (EQL).

**M. RECEIVING WATERS**

Any surface water, which actually or potentially receives surface or groundwater, which pass over, through, or under waste materials or contaminated soils.

**N. VOLATILE ORGANIC COMPOUND (VOC) COMPOSITE MONITORING PARAMETER (VOC composite)**

VOC composite is a composite parameter that encompasses a variety of VOCs. The constituents addressed by the VOC composite Monitoring Parameter include all VOCs detectable using USEPA Methods, 8260 (water) and TO-14 (gas).

**O. WASTE MANAGEMENT UNIT OR UNIT**

An area of land, or a portion of a waste management facility, at which waste is discharged. The term includes containment features and ancillary features for precipitation and drainage control and for monitoring.

**P. WASTE MANAGEMENT UNIT BOUNDARY**

A vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

**Q. WASTE MANAGEMENT FACILITY**

The entire parcel of property at which waste discharge operations are conducted. Such a facility may include one or more waste management units.

**ORDERED BY:** \_\_\_\_\_  
Executive Officer

**DATE:** \_\_\_\_\_

**ATTACHMENT 1**

**Figure 3 from Waste Discharge Order No. R3 2007-0022**