

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

DRAFT MONITORING AND REPORTING PROGRAM NO. R3-2007-0045
Waste Discharger Identification No. 3420304001

**FOR
THE CITY OF SANTA MARIA
SANTA MARIA REGIONAL LANDFILL
Santa Barbara 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 Santa Maria Class III Regional Landfill (hereafter "landfill"), in accordance with the following schedule, and record (including photographs, when appropriate) at a minimum, the **Standard Observations** as defined in **Part V**.

Site Inspection Schedule:

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

B. INTAKE MONITORING

The Discharger shall maintain a daily record of the waste stream. The record shall include the following:

1. Weight (in tons) of waste received;
2. Running totals of tons received, tons remaining for waste placement, and remaining site life expectancy (in years);
3. Current fill area (in acres);
4. Waste type and diversion quantities; and
5. Log of random load checking program. The log shall contain a record of refused loads, including the type of waste refused, and the date, name, address, and phone number of the party attempting to dispose of the waste.

The intake daily records are not to be submitted to this Water Board, but are to be maintained at the Discharger's offices in accordance with Part II.C. of this Monitoring and Reporting Program (MRP), and are to be made available to Water Board staff upon request to review and/or copy.

C. LEACHATE AND DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect all Leachate Collection and Removal Systems (LCRS), Leak Detection

and Removal System (LDRS), and groundwater subdrain, and record the following information:

1. **Bi-weekly** - leachate containment and collection system integrity, surface water collection and drainage system integrity, record volume of leachate collected (in gallons) and disposal method used;
2. **Monthly** - pumping system and fluid level operational check for all drainage systems. Operational checks, dates, and estimated volumes are to be included with semi-annual monitoring report; and
3. **Annually** – LCRS, LDRS, and groundwater subdrain testing and demonstration, per Title 27 §20340(d). Include results as part of the Annual Summary Report required by this 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. For LCRS, LDRS, and groundwater subdrain: check water level transducer calibrations per manufacturer's specifications.

Additionally, 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 and if so, what levels;
- b. Any apparent seepage from the storage basins;
- c. General conditions of the stormwater facilities; and
- d. Steps taken to correct any problems found during inspection and date(s) when corrective action was taken.

D. 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**.

E. ANALYTICAL MONITORING AND MONITORING LOCATIONS

The Discharger shall monitor the landfill in accordance with the following schedule(s). Monitoring locations are shown on **Figure A-1**.

1. Monitoring Parameters
 - a. **Groundwater, LCRS, LDRS, and subdrain:** The Discharger shall analyze all samples from all groundwater Monitoring Points at the landfill for the Monitoring Parameters listed in **Table 1**.

Table 1. Monitoring Parameters

<u>Monitoring Parameter</u>	<u>USEPA Method</u>	<u>Units</u>
Volatile Organic Compounds ¹ (VOCs) – Include MTBE	8260	µg/L
pH ²	Field	Units
Temperature ²	Field	°F/C
Turbidity ²	Field	NTU
Electrical Conductivity ²	Field	µmhos/cm
Total Dissolved Solids (TDS) ²	160.1	mg/L
Chloride	300.0	mg/L
Sulfate ²	300.0	mg/L
Total Alkalinity	305.1	mg/L
Nitrate and Nitrite (Nitrogen)	300.0	mg/L
Manganese (dissolved)	6010B	mg/L
Iron (dissolved)	6010B	mg/L
Total Organic Carbon (TOC)	415.1 ³	mg/L
Perchlorate ⁴	314.0	µg/L
Total Petroleum Hydrocarbons (TPH) (gasoline, diesel, motor oil)	8015M	µg/L
Dissolved Oxygen (DO) ²	Field	mg/L

Notes:

- (1) The VOC_{water} Monitoring Parameter includes all Volatile Organic Compounds (VOCs) detectable using USEPA Method 8260 and MTBE, including at least all 47 organic constituents listed in Appendix I to 40 CFR, 258 (Subtitle D), and all unidentified peaks.
- (2) Analytical or physical parameter but not a monitoring parameter as defined by Title 27.

- (3) Or equivalent EPA method, with prior approval from the Executive Officer.
- (4) Discharger may discontinue analysis if this parameter is not detected or below background levels in at least three consecutive monitoring events.

Statistical and non-statistical assessment methods, as required by Part III, shall be used to evaluate analytical results for monitoring parameters.

- b. **Soil Pore Gas (Vadose Zone) Monitoring:** The Discharger shall analyze vadose zone gas at each monitoring location (see below) for VOCs and methane using field instruments. On an annual basis, collect samples from all probes and analyze for VOCs in a laboratory using TO-14 or equivalent method.

2. Monitoring Points

All groundwater monitoring points are shown on Figure A-1 attached to this MRP. Groundwater monitoring includes detection monitoring, corrective action, and piezometers, as listed in Table 2. Table 2 also includes storm water, soil gas, and LCRS sampling locations.

Additional Detection Monitoring Point well: The Discharger shall add MW-20, as shown on Figure A-1, to the groundwater monitoring program upon constructing new Cell #2 at the landfill. The initial monitoring event at these wells shall be completed prior to the placement of waste in the new cell.

3. Monitoring Frequency

Monitoring for all groundwater and vadose zone sampling locations shall be conducted on a quarterly basis (Table 2). However, the Discharger may propose reduced monitoring at all or a portion of monitoring locations after collecting appropriate data and evaluating the hydrogeochemical conditions responsible for elevated inorganic constituents at the site.

4. Groundwater Levels

For each monitored groundwater body, the Discharger shall measure the water level in each well or piezometer at least quarterly.

Table 2. Monitoring Points

Monitoring Points (See Attachment A-1)		Monitoring Program		Monitoring Parameters/Frequency		
Well ID	Monitoring Zone	Detection Monitoring	Corrective Action Monitoring	Parameters	COCs ⁽¹⁾	Frequency ⁽²⁾
MW-1R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-2R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-3R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-4R	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-5R	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-6R	Alluvium/Orcutt Sand	X (background)		Table 1	Table 3	Quarterly
MW-7R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
MW-8R	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly

Monitoring Points (See Attachment A-1)		Monitoring Program		Monitoring Parameters/Frequency		
Well ID	Monitoring Zone	Detection Monitoring	Corrective Action Monitoring	Parameters	COCs ⁽¹⁾	Frequency ⁽²⁾
MW-9	Alluvium/Orcutt Sand	X (background)		Table 1	Table 3	Quarterly
MW-10	Alluvium/Orcutt Sand	X (background)		Table 1	Table 3	Quarterly
MW-11	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-12-1	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-12-2	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-13	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-14	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-15	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-16	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-17	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-18S	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MWO-18D	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
MW-19	Alluvium/Orcutt Sand	X		Table 1	Table 3	Quarterly
EW-1A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
EW-2A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
EW-3A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
EW-4A	Alluvium/Orcutt Sand		X	Table 1	Table 3	Quarterly
SP-1,-2,-3,-4 DP-1,-2	Alluvium/Orcutt Sand	X (Piezometer)		Water Levels		Quarterly
SW-1,-2,-3	Storm Water	X		Section 7		Semiannually (During a flow events)
MP-1 through -10; -10A&B; MP-11 through -24	Gas Migration; Vadose Zone	X		Section 1.b.		Quarterly
LCRS, LDRS, Subdrain	Collection System	X		Table 1	Table 3	Annually
Gas Condensate	Collection Systems	X		VOCs		Annually

⁽¹⁾ Sample once every five years for full suite of analytes listed in Table 3. Next sampling event spring 2011

⁽²⁾ Quarterly monitoring shall be performed during Jan.-Mar., April-June, July-Sept., and Oct.-Dec. and includes water levels for all wells and piezometers.

5. Constituents of Concern Monitoring

Constituents of Concern (COC) are listed in **Table 3**, and either directly include or include by reference all constituents list in Appendix I in 40 CFR, Part 258. Monitoring for COCs shall encompass only those which are not Monitoring Parameters (**Table 1**). Analysis of COCs shall be carried out **once every five years** at each of the site's groundwater monitoring points (Detection and Corrective Action). 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 year one and the spring of the fifth year. The next COC event is spring 2011. Monitoring points that have not previously been sampled for COCs shall be sampled and analyzed for all COCs within three

months of the effective date of this Order or following well installation and development.

Table 3. Constituents of Concern ⁽¹⁾

CONSTITUENTS	USEPA METHOD	UNITS
Antimony	6010	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
Organophosphorous Pesticides	8141A	µg/L
Phthalate Esters	8060	µg/L
Phenols	8040	µg/L
Semi-Volatile Organic Compounds	8270	µg/L
Volatiles (Include MTBE)	8260	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).

6. Collection System Performance

- a. The Leachate Collection and Leak Detection and Removal Systems, and Groundwater Subdrain:

For multiple lined cells in the Expansion Area, each cell will be equipped with both a Leachate Collection and Removal System (LCRS) and a Leak Detection and Removal System (LDRS), as well as a groundwater subdrain. The LCRS, LDRS, and subdrain shall gravity drain and/or be pumped to collection sumps. Leachate shall be collected in an above ground storage tank with secondary containment. Leachate volumes from all three systems shall be recorded monthly and submitted with subsequent monitoring reports. Each system shall be sampled and analyzed with the same sampling analytical protocol as a groundwater monitoring point. Monthly and annual cumulative totals shall be prepared in tabular and

graphical formats semi-annually. Disposal method of all collected volumes shall be reported. Fluids collected from each of these systems shall be analyzed, as available, for the Monitoring Parameters (**Table 1**) annually and for COCs (**Table 3**) every five years, starting with year one.

- b. **Perimeter Gas Probes:** Perimeter gas monitoring probes shall be monitored quarterly for methane, carbon dioxide, oxygen, hydrogen sulfide, and VOCs using calibrated field instruments. Test for volatile organic compounds annually using method EPA Method Toxic Organics (TO)-14, or equivalent method, in samples from all probes. Also collect a sample on a minimum of an annual basis from the landfill gas stream entering the flare system and from landfill condensate locations; analyze for methods described above. The Discharger shall follow consistent sampling protocols as specified in the sampling and analysis plan. Monitoring results shall be submitted to the Board in semi-annual reports and include information specified in Title 27, §20934

7. Storm Water Monitoring

The Storm Water sampling will be conducted at three locations (SW-1, SW-2, and SW-3, as shown in Figure A-1) per the NPDES general permit. A fourth storm water sampling point, SW-4, shall be added if significant discharges occur at this location. Annually, within one hour of the first storm event that causes a discharge, collect a water sample (unfiltered) at the locations specified above. A second sample must be collected from the point of discharge after a subsequent qualifying discharge event of the wet season.

Samples shall be analyzed for: total iron, turbidity, total suspended solids, pH (field measured), electrical conductivity, temperature, total organic carbon (method 415.1 or equivalent), and nitrate (as nitrogen).

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 Water 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, and;
 - 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 exists;
 - b. In cases where sufficient data for statistically determining Concentration Limits does not exist the Discharger shall collect samples and analyze for COC and Monitoring Parameter(s) which require additional data. Once sufficient data is 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 is available to establish a proposed Concentration Limit for all COC and Monitoring Parameters. Once sufficient data is 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 a minimum of 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) and 40 CFR 258.29. 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 sample was taken, and individual who 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 Methods Detection Limit and PQL for each analysis; and
6. A complete chain of custody log.

PART III: STATISTICAL AND NON-STATISTICAL ANALYSIS OF DATA

A. 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, §20415(e)(7). All statistical methods and programs proposed by the Discharger are subject to Executive Officer approval.

B. NON-STATISTICAL METHOD

For Detection Monitoring, 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, which contains the largest number of constituents.

2. Evaluate whether the listed constituents meet either of two possible triggering conditions. Either the list from a single well contains two or more constituents, or contains one constituent, which 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.C.

C. 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-test analytical results 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 or 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.

PART IV: REPORTING

A. MONITORING REPORT

A written Monitoring Report shall be submitted semi-annually by **February 28 and August 31** of each year. Monitoring Reports will be submitted in an electronic format, with text, tables, figures, laboratory analytical data, and appendices placed on a compact disc in PDF format along with a hardcopy of text, tables, and figures. The electronic format must be compatible with Geotracker, as stipulated by California State law. Accompanying the electronic version of the report will be a hard copy transmittal letter, with signatures of preparers and submitters (in accordance with requirements stated in Waste Discharge Requirements Order No. R3-2007-0045), along with an executive summary of the report text. The Monitoring Report shall address all facts of the landfill's monitoring. Reports shall include, but should not be limited to, 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. Both the Monitoring Report and the transmittal letter shall be signed by: for private facilities, a principal executive officer at the level of vice president; for public agencies, the director of the agency. 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 Summary shall contain at least:

- a. Discussion of compliance with concentration limits. Release indications and any corrective 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 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. 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.

The Discharger shall also determine horizontal and vertical gradients, groundwater flow rate, and flow direction for each respective groundwater body. This data shall be presented on a figure that depicts groundwater contours and flow directions as well as gradient. One figure for each water level measuring period shall be included with the semi-annual monitoring report.

4. Corrective Action Summary

Discuss significant aspects of any corrective action measures conducted during the monitoring period and the status of any ongoing corrective action efforts, including constituent trend analysis. Calculate pollutant load removed from the sites impacted media by mass (water, gas, leachate) removal system(s). Mass removal calculations shall be based on actual analytical data as required by Part I.E. Present discussion and indications, relating mass removal data to the violation the corrective action is addressing.

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. Leachate Collection and Detection Systems

A summary of the total volume of leachate collected each month since the previous Monitoring Report for both the leachate collection and leachate detection systems. Also include fluid level measurements in LCRS, LDMS, and subdrain along with transducer calibration records.

8. Standard Observations

A summary of Standard Observations (Part V) made during the Monitoring Period.

9. 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.

B. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual report to the Water Board covering the previous monitoring year. The annual Monitoring Period ends on December 31 each year. This report may be combined with the Second Semi-Annual Monitoring Report of the year and shall be submitted no later than January 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. Statistical Limit Review

Statistically derived concentration limits shall be reviewed a minimum of 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.

3. Analytical Data

Complete historical analytical data presented in a tabular form and on compact disk, and Excel™ format or in another file format acceptable to the Executive Officer.

4. Leachate Collection and Detection System

Results of annual leachate collection and leachate detection system testing, as required by Part I.C. Where leachate is used for dust control, testing that shows the leachate is non-hazardous shall be submitted annually.

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 RESPONSE1. 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 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. Location of sample(s) collected for laboratory analysis, as appropriate;

- d. A description of the nature of the discharge (e.g. pertinent observations and analysis); and
- e. A summary of corrective measures both taken and proposed.

2. Initial Release Indication Response

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 Water 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; and,
- 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 Water 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; and
- 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, 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; and
 - (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; and
- 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).

- 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. 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.

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)

An extensive list of constituents likely to be present in a typical municipal solid waste landfill. The COC for this landfill are listed in **Table 3.**

D. MATRIX EFFECT

Any increase in the MDL or PQL 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. E.**

H. MONITORING PERIOD (frequency)

The duration of time, during which a sampling event must occur. The Monitoring Period for the various media and programs is specified in **Part I.E.** The due date for any given report will be 30 days after the end of its Monitoring Period, unless otherwise stated.

I. 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).

J. RECEIVING WATERS

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

K. STANDARD OBSERVATIONS**1. For Receiving Waters:**

- a. Floating and suspended materials of waste origin;
- b. Discoloration and turbidity;
- c. Evidence of odors;
- d. Evidence of beneficial use – presence of water-associated wildlife; and
- e. Flow rate to the receiving water.

2. Along the perimeter of the Unit:

- a. Evidence of liquid leaving or entering the Unit;
- b. Evidence of odors;
- c. Evidence of erosion and/or exposed refuse; and
- d. Inspection of storm water discharge locations for evidence of non-storm water discharges during dry season, and integrity during wet season.

3. For the Unit:

- a. Evidence of ponded water at any point on the waste management facility;
- b. Evidence of odors;
- c. Evidence of erosion and/or daylighted refuse;
- d. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the General Permit are properly implemented;
- e. Integrity of containment and drainage systems; and
- f. Evidence of waste in the drainage system (e.g., ditches and sediment basins)

L. 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 includes all VOCs detectable using USEPA Methods, 8260 (water) and TO-14 (gas).

M. WATER MONITORING [For Detection and Corrective Action Monitoring]

The Discharger shall monitor water-bearing media as outlined below. Sampling, analyses, and reporting shall follow **MRP No. R3-2007-0045, Parts II, III, and IV**. The Discharger shall ensure enough samples are taken, at each monitoring point, to qualify for the most appropriate statistical analysis method outlined in **MRP No. R3-2007-0045, Part II**.

ORDERED BY: _____
Executive Officer

Date

Figure: Figure A-1 Monitoring Point Location Map