

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

**MONITORING AND REPORTING PROGRAM NO. R3-2004-0111
Waste Discharger Identification No. 3 430307001**

for

**PACHECO PASS CLASS III
AND INERT WASTE LANDFILL
SANTA CLARA COUNTY**

MONITORING AND OBSERVATION SCHEDULE

A. SITE INSPECTIONS

The Discharger shall inspect the Landfill and Composting area in accordance with the following schedule and record, at a minimum, the following Standard Observations:

1. Site Inspection Schedule:

- a. During the wet season (October 1 through April 30), perform inspections following each significant storm which produces storm water discharge. If there are no significant storm events, inspections must be performed at least monthly.
- b. During the dry season a minimum of one inspection every three months.

2. Standard Observations:

a. **For Receiving Waters:**

- i. Floating and suspended materials of waste origin; presence or absence, source, and size of affected area.
- ii. Discoloration and turbidity - description of color, source, and size of affected area.
- iii. Evidence of odors - presence or absence, characterization, source, and distance of travel from source.
- iv. Evidence of beneficial use - presence of water-associated wildlife.
- v. Flow rate to the receiving water.

b. **Along the perimeter of the Landfill Property and Compost Area:**

- i. Evidence of liquid leaving or entering the Landfill, estimated size of affected area, and flow rate (show affected area on map).
- ii. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
- iii. Evidence of erosion and/or of exposed refuse.
- iv. Inspection of all storm water discharge locations for evidence of non-storm water discharges during dry seasons, and integrity during wet seasons.

c. **For the Landfill Property and Compost Area:**

- i. Evidence of ponded water at any point on the Landfill site (show affected area on map).
- ii. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
- iii. Evidence of erosion and/or of day lighted refuse.
- iv. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the general permit is properly implemented.
- v. Integrity of drainage systems.

B. INTAKE MONITORING

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

LANDFILL

1. Weight and/or volume of all waste received (including municipal solid waste, construction and demolition waste, and inert waste),
2. Volume received, volume remaining for waste placement, and Landfill life expectancy;
3. Current fill area; and
4. Log of 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, if available.
5. Track materials that require special handling prior to discharge (e.g. contaminated soil loads, semi-liquid loads, asbestos loads). The tracking system shall document tonnage or volume of waste and results of any characterization testing required.

COMPOST AREA

1. Weight and/or volume of material received,
2. Map showing approved composting areas in use.

C. DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect drainage control systems following each significant storm in accordance with the site inspection schedule and record the following information:

- a. Condition of facilities and liners, whether storm water storage basins and drainage ditches contain liquids;
- b. Any apparent seepage from storage basins or the Landfill site;
- c. Steps taken to correct any problems found during inspection and date(s) when taken; and
- d. Maintain a photo log of corrections made to the drainage control systems.

D. RAINFALL DATA

The Discharger shall record the following information:

1. Weekly precipitation totals and tabulate total precipitation for each month.
2. Total precipitation during the Monitoring Period.
3. Number of Significant Storms received during Monitoring Period.
4. Return interval of the most intense 24-hour storm (25 year, 100 year, etc.).

E. POLLUTION CONTROL SYSTEMS INSPECTIONS

The Discharger shall inspect all pollution control systems following each significant storm and record the following information:

1. **Leachate Systems:** The Discharger shall inspect leachate management systems (i.e., Module A leachate sumps, Parcels 1A and 1B leachate monitoring/extraction wells) and record the following information:

- a. Weekly - leachate containment system integrity, record volume of leachate collected and disposal method used.
 - b. Quarterly - pumping system operational check.
 - c. Perform routine preventive maintenance focused on keeping the system at design operation. All scheduled and unscheduled maintenance shall be summarized and reported.
 - d. Annually - leachate collection and removal system testing as required by the California Code of Regulations, Title 27 (CCR Title 27), Section 20340 (d). The absence or presence of biofouling shall be addressed in the inspection report. At sites where leachate is used for dust control, testing that shows the leachate is non-hazardous shall be submitted annually.
 - e. Analyze leachate for Monitoring Parameters Semi-Annually. Every fifth year analyze for Constituents of Concern. Samples shall be taken directly from the leachate sump and/or storage tank, to obtain values representative of water internal to the waste mass. If leachate is detected in the leachate monitoring/extraction wells within the unlined landfill, a representative sample will also be collected from these wells for analysis. The analytical results will be used to determine the suitability of the leachate for use as dust control.
 - f. Compute semi-annual and annual running totals of leachate and condensate removed. Using most recent leachate contaminant concentration data and collection volume, compute contaminant mass removed on a semi-annual basis. Report semi-annual and annual running totals.
2. **Gas Extraction System:** The Discharger shall inspect the gas extraction system and record the following:
- a. Monthly - inspect entire system for containment and collection system integrity. Include monthly inspection, maintenance and testing demonstrations in semi-annual monitoring reports.
 - b. Annually - submit an annual operational summary for the containment and collection system.
 - c. Perform routine preventive maintenance focused on keeping the system at design operation. All scheduled and unscheduled maintenance shall be summarized and reported annually.
 - d. Record volume of gas extracted monthly. Report monthly volume and annual sub-totals. Indicate how volume measurement is made.
 - e. Record volume of gas condensate collected monthly. Report monthly, semi-annually and annual sub-totals in semi-annual reports and report disposal method utilized. When more than one disposal method is used, be volume specific for each method.
 - f. Sample gas collection header semi-annually and analyze for volatile organic compounds (VOCs).
 - g. Sample gas condensate semi-annually and analyze for Monitoring Parameters.
 - h. Using semi-annual contaminant concentration data and collection volume, compute contaminant mass removed on a semi-annual basis. Report monthly, semi-annual, and annual totals.

F. ANALYTICAL MONITORING

The Discharger shall monitor the site's groundwater in accordance with the following schedule(s):

- Quarterly monitoring will be performed within the following time frames: Winter (January 1 to March 31), Spring (April 1 to June 30), Summer (July 1 to September 30), Fall (October 1 to December 31).
- Semi-annual monitoring will be performed within the following time frames: First half (January 1 to June 30), Second half (July 1 to December 31).

1. **Groundwater Monitoring**

Groundwater Monitoring Parameters: The discharger shall monitor groundwater in accordance with the following monitoring frequency and for the following monitoring parameters. The groundwater monitoring locations are shown in **Attachment A**.

**TABLE 1
GROUNDWATER MONITORING**

Sample Location	Monitoring Program		Frequency/Parameter		
	Detection	Corrective	Monitoring Frequency	Monitoring Table	COC Table ¹
E-4		X	Semi-annually	Table 2	Table 3
E-6 ²	X	X	Quarterly	Table 2	Table 3
E-7		X	Semi-annually	Table 2	Table 3
E-8		X	Semi-annually	Table 2	Table 3
E-9	X		Quarterly	Table 2	Table 3
E-10		X	Semi-annually	Table 2	Table 3
E-17	X		Quarterly	Table 2	Table 3
E-18	X		Quarterly	Table 2	Table 3
E-19	X		Quarterly	Table 2	Table 3
E-21		X	Semi-annually	Table 2	Table 3
E-22	X		Quarterly	Table 2	Table 3
E-23	X		Quarterly	Table 2	Table 3
E-25	X		Quarterly	Table 2	Table 3
E-26	X		Quarterly	Table 2	Table 3
E-27	X		Quarterly	Table 2	Table 3

Notes:
¹Sample once every five years for full suite of analytes listed in Table 3. Next sampling event fourth quarter 2004.
²E-6 is in corrective action monitoring for volatile organics and detection monitoring for inorganic parameters.

**TABLE 2
GROUNDWATER MONITORING PARAMETERS**

Parameter	Method* ¹	Units
Volatile Organic Compounds (including Oxygenates ²)	8260B	µg/l
pH, E.C., D.O., Temperature, Turbidity	Field	varies
Total Dissolved Solids	160.1	mg/l
Alkalinity (as CaCO ₃)	310.1	mg/l
Chloride, Sulfate	300.0	mg/l
Barium, Manganese (dissolved)	6010B/200.7	mg/l
Nitrate (as nitrogen)	9056/300.0	mg/l
Total Well Depth	Sounder	feet
Groundwater Elevations	Sounder	0.01 feet
<p>* Or most recently approved EPA method that provides the lowest practicable detection limits.</p> <p>¹ Statistical and non-statistical assessment methods, as required by Part III, shall be used to evaluate the sampling results of laboratory-derived parameters, except VOC.</p> <p>² Oxygenates include methyl tertiary-butyl ether (MtBE), diisopropyl ether (DIPE), ethyl tertiary-butyl ether (ETBE), tertiary-amyl methyl ether (TAME), and tertiary-butyl alcohol (TBA)</p>		

**TABLE 3
CONSTITUENTS OF CONCERN**

Constituents ¹	Method*	Units
Antimony	6010B	mg/l
Arsenic	7060A	mg/l
Barium	6010B	mg/l
Beryllium	6010B	mg/l
Cadmium	6010B	mg/l
Chromium (total & VI)	6010B/7196A	mg/l
Cobalt	6010B	mg/l
Copper	6010B	mg/l
Cyanide	9010 or 335.2	mg/l
Lead	7421	mg/l
Magnesium	6010B	mg/l
Mercury	7470A	mg/l
Molybdenum	6010B	mg/l
Nickel	6010B	mg/l
Selenium	7740	mg/l
Silver	6010B	mg/l
Sulfide	9030B or 376.1	mg/l
Thallium	7841	mg/l
Tin	6010B	mg/l
Vanadium	6010B	mg/l
Zinc	6010B	mg/l
Chlorophenoxy Herbicides	8151A	µg/l
Organochlorine Pesticides	8081A	µg/l
PCBs	8082	µg/l
Organophosphorus Pesticides	8141A	µg/l
Semi-Volatile Organic Compounds	8270C	µg/l
Volatile Organic Compounds, Appendix II ^{2,3}	8260B	µg/l
<p>* Or most recently approved EPA method that provides the lowest practicable detection limits. ¹ The Discharger shall analyze for all constituents using the USEPA analytical methods indicated above (or updated method), including all constituents listed in Appendix II to 40 CFR, Part 258. ² Wells that are normally monitored for COCs in Table 2 do not need to be resampled for same constituents in Table 3, during COC sampling events. The semi-annual and COC monitoring event shall be conducted simultaneously. ³ Includes MtBE (EPA Method 8260B) and 1,4 dioxane (EPA Method 8270C).</p>		

2. Groundwater Flow Rate and Direction

For each monitored groundwater body, the Discharger shall measure the water level in all intact and available wells and piezometers, (e.g., those listed in Table 1, E-1, E-13 through E-16, etc.) at least once each quarter, including the times of expected highest and lowest elevations of the water level. The Discharger shall also determine the presence of horizontal and vertical gradients, groundwater flow rate, and flow direction for the respective groundwater body. Groundwater elevations for all wells in 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 flow rate and direction [Code of Federal Regulations Title 40 (CFR 40), Section 258.53(d)].

3. Unless otherwise authorized by the Executive Officer, all new groundwater monitoring wells shall be incorporated into this monitoring and reporting program, and shall be sampled on a quarterly basis for a minimum of four consecutive quarters.
4. **Surface and Storm Water Monitoring**
The Discharger shall monitor surface water in accordance with the following monitoring frequencies and for the following monitoring parameters. Monitoring locations are shown in **Attachment A**.

**TABLE 4
SURFACE AND STORM WATER MONITORING**

Sample Location	Monitoring Parameter Table	Frequency ¹
SW-1 (environmental easement sedimentation pond), SW-2 (adjacent to flare)	Table 5	Quarterly
SW-3 (northern sedimentation pond)	Table 5	Monthly during the wet season. Quarterly during dry season
Notes: ¹ During the wet season, samples must be collected after the first and second significant storm event that generates surface run-off in accordance with the National Pollutant Discharge Elimination System (NPDES). The samples collected for the NPDES program may also be used to satisfy applicable sampling frequencies for the MRP.		

**TABLE 5
SURFACE AND STORM WATER PARAMETERS**

Parameter	Method*	Units
pH, EC, DO, Temperature, Turbidity	Field	Varies
Nitrate (as nitrogen) ¹	9056/300.0	mg/l
TOC or O&G	9060/415.1 or 9070A/413.1	mg/l
Total Suspended Solids	160.2	mg/l
Organochlorine Pesticides ¹	8081A	mg/l
*Or most recently approved EPA method that provides the lowest practicable detection limits. ¹ Required for SW-3 sample location only.		

5. **Landfill Gas Monitoring**
The Discharger shall monitor landfill gas probes in accordance with the following monitoring frequencies and for the following monitoring parameters. Monitoring locations are shown in **Attachment A**.

**TABLE 6
LANDFILL GAS PROBE MONITORING**

Sample Location	Monitoring Parameter Table	Frequency ¹
GP-1 (a,b,c), GP-2 (a,b,c), GP-3 (a,b), GP-4 (a,b)	Methane, H ₂ S	Quarterly
GP-1 (a,b,c), GP-2 (a,b,c), GP-3 (a,b), GP-4 (a,b)	Table 7	Annually
Notes: ¹ Annually, gas probes that contain methane concentrations above five percent in any single sampling event, shall be analyzed for VOCs using EPA Method TO-14 or TO-15. Additionally, the Discharger shall optimize landfill gas extraction of wells adjacent to probes with elevated methane or install additional gas extraction wells.		

**TABLE 7
GAS PROBE MONITORING PARAMETERS**

Parameter	Method*	Units
Volatile Organic Compounds (including MtBE)	TO-14 or TO-15	ppm
Methane	Field	percent
H ₂ S	Field	ppm
*Or most recently approved EPA method that provides the lowest practicable detection limits.		

6. Leachate and Landfill Gas Condensate Monitoring

The Discharger shall monitor leachate and landfill gas condensate in accordance with the following monitoring frequencies and for the following monitoring parameters. Monitoring locations are shown in **Attachment A**.

**TABLE 8
LEACHATE AND LANDFILL GAS CONDENSATE
MONITORING**

Sample Location	Monitoring Parameter Table	Frequency
Leachate Collection Tank and Landfill Gas Condensate Header/Tank	Table 2	Semi-annually
Leachate Collection Tank and Landfill Gas Condensate Header/Tank	Table 3	Every five years ¹
Notes: ¹ Sample once every five years for full suite of analytes listed in Table 3. Next sampling event fourth quarter 2004.		

7. Constituent of Concern Monitoring:

The Constituents of Concern parameter includes, carbonate, MtBE, 1,4 Dioxane and constituents listed in Appendix II to 40 CFR, part 258. Monitoring for Constituents of Concern shall encompass only those constituents that do not also serve as Monitoring Parameters. Analysis of Constituents of Concern shall be carried out once every five years at groundwater detection monitoring points, unless required due to an indication of release. The next sampling event for monitoring the Constituents of Concern is the fourth quarter of 2004. Additionally, any new wells must be sampled and analyzed for all Constituents of Concern within six months of the well being installed.

8. Dust Control

If leachate is used as dust control, analytical testing must be performed and submitted annually, which demonstrates that the leachate is non-hazardous.

9. Sample Procurement Limitation

For any given monitored medium, the 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 [CCR Title 27, Section 20415 (e)(12)(B)]. Sampling for successive monitoring periods shall occur at least 30 days apart.

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 USEPA Methods (USEPA publication "SW-846"), and in accordance with an approved sampling and analysis plan. Water analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Regional Board. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from Monitoring Points meets the following restrictions:

- Method Selection:** 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 [PQL] shall be reported as such.
3. **MDL and PQL:** Method Detection Limits and PQL shall be derived by the laboratory for each analytical procedure according to the State of California laboratory accreditation procedures. Both limits are defined in the last section of this MRP 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 other 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:
 - the method, equipment, and analytical detection limits;
 - the recovery rates, an explanation for any recovery rate that is outside the USEPA-specified recovery rate;
 - the results of equipment and method blanks;
 - the results of spiked and surrogate samples;
 - the frequency of quality control analysis; and
 - the name and qualifications of the person(s) performing the analyses.
5. **Common Laboratory Contaminants:** QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.
6. **Unknowns:** 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 an attempt to identify and more accurately quantify the unknown analyte(s).

B. CONCENTRATION LIMIT DETERMINATION

1. The concentration limit for Monitoring Parameters and Constituents of Concern shall be determined as follows:
 - a. In cases where the constituent's MDL is exceeded in less than ten percent of the historical samples, the MDL is the Concentration Limit.
 - b. In cases where the constituent's MDL is exceeded in ten percent or more of the historical sample, a statistically based Concentration Limit must be defined and regularly updated as follows:
 - i. Statistically analyze existing monitoring data, and propose, to the Executive Officer, statistically derived Concentration Limits for each Constituent of Concern and each Monitoring Parameter at each Monitoring Point for which sufficient data exists;
 - ii. In cases where sufficient data for statistically determining Concentration Limits does not exist the Discharger shall collect samples and analyze for Constituent(s) of Concern 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;

- iii. 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 Constituents of Concern 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 annually by the Discharger. The past years data will be reviewed for application to revision of concentration limits. When appropriate, new concentration limits shall be proposed along with technical rationale for proposing the change.

C. RECORDS TO BE MAINTAINED

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 for each sample:

1. Identity of sample and of the Monitoring Point from which it was taken, along with the identity of the 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 Method Detection Limit and Practical Quantitation Limit for each analysis; and
6. A complete chain-of-custody log.

D. STATISTICAL ANALYSIS

The Discharger shall use the following statistical method to analyze Constituents of Concern and Monitoring Parameters, which exhibit concentrations that equal or exceed their respective Method Detection Limit in at least ten percent of applicable historical samples. Except for pH, which uses a two-tailed approach, the statistical analysis for constituents and parameters shall be one-tailed (testing only for statistically significant increase). The Discharger may propose and use other statistical methods that comply with CCR Title 27. This and other statistical methods are described in further detail in the USEPA Interim Final Guidance Document entitled Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, dated April 1989, and the addendum dated July 1992.

1. Tolerance Intervals

Tolerance Intervals are amicable to parametric or non-parametric data, inter-well or intra-well comparisons. Intra-well comparisons will only be allowed on monitoring points that have not been previously impacted by waste disposal (i.e., detection monitoring wells). Prior to utilizing intra-well methods the Discharger must provide, for the Executive Officer's consideration, an argument and supporting evidence that indicates the well has not been impacted. Intervals will be established using at least eight (8) historical sampling results. Intervals shall be reviewed annually and reconstructed if necessary. The coverage of any tolerance interval used shall be no more than 95 percent and the confidence coefficient shall be no more than 95 percent for a six-month period. If an interval limit is exceeded, the Discharger shall conclude that a release is tentatively indicated for that constituent and shall immediately implement the retest procedure as described in Section F below. When constructing intervals, non-detects shall be handled as follows:

- Fifteen percent (15%) or less non-detects; replace non-detect with half the Practical Quantitation Limit.
- Greater than fifteen percent (15%) but less than fifty percent (50%) non-detects; use Cohen's or Aitchison's adjustment methods.
- Fifty percent (50%) or more non-detects; use non-parametric interval approach.

E. NON-STATISTICAL METHOD

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

1. For constituents to which the method applies, compile a well specific list of those constituents which exceed their respective Method Detection Limit. The list shall be compiled based on either the 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. Either the list from a single well contains two or more constituents, or contains one constituent, which equals or exceeds its PQL. If either condition is met, the Discharger shall conclude that a release is tentatively indicated and shall immediately implement the appropriate retest procedure as described in the following section.

F. RETEST PROCEDURE

1. In the event that the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the appropriate reporting requirements and, within 30 days of this indication, collect two new suites of samples for the indicated Constituent(s) of Concern 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. Re-sampling of the other monitoring points is optional.
2. As soon as the retest data is available, the Discharger shall use the same statistical method (or non-statistical comparison), that provided the tentative indication of a release, to separately analyze each of the two suites of retest data. If the test results of either or both of the retest data suites confirm the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the appropriate response in reporting an initial indication of a release.
3. Retests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituent of Concern(s) or Monitoring Parameter(s) which triggered the indication. When a constituent(s) of a VOC_{composite} analysis is retested, the result of the entire VOC_{composite} shall be reported. In that case, a retest shall validate the original release indication even if the detected constituents(s) in the retest sample(s) differs from those detected in the sample which initiated the retest.

REPORTING

A. MONITORING AND REPORTING SCHEDULE

A written Monitoring Report shall be submitted semi-annually by July 31 and January 31 of each year. A complete copy of the monitoring report shall be submitted on CD ROM in Microsoft Word or PDF format with Tables in Microsoft Excel format. 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 WDR Order No. R3-2004-0111), along with an executive summary of the report text. The 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 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 a principal executive officer at the level of vice president for private facilities and by the director of the agency for public agencies. 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. Site Conditions Summary

General discussion of site conditions (geology, climate, 100 year 24-hour storm, and watershed specifics) relative to water quality monitoring.

3. 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.
- c. Present elevation data in feet above mean sea level adjacent to corresponding Monitoring Points on the figure showing groundwater elevation contours.

4. Graphical Presentation of Analytical Data

- a. For each Monitoring Point in each medium, submit, in graphical format, the laboratory analytical data. Graphs shall effectively illustrate trends and/or variations in the analytical data. Appropriate scales must be used to best show trends. Each graph shall plot a single constituent concentration over time at one or more 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.
- b. Plot monthly rainfall totals versus monthly total of each individual liquid collection system.

5. Corrective Action Summary

Discuss significant aspects of any corrective action measures ongoing at the site. Calculate pollutant load removed from the site by mass (water, gas, and leachate) removal system(s). Mass removal calculations shall be based on analytical data collected in accordance with the analytical program. Also, discuss the effectiveness of the corrective action measures taken, the effectiveness of the source control measures taken, and propose corrective action and source control modifications and improvements. The reports shall include monitoring data trend analyses, operational summary for the year, a discussion for any planned changes to the operations plan for the following year, and a time schedule of any proposed corrective action program modifications.

6. Laboratory Results

Laboratory results and statements demonstrating compliance with proper sampling and analytical methods of this Monitoring and Reporting Program shall be included. Additionally, results of sampling and analyses performed at the Landfill, outside the requirements of this Monitoring and Reporting Program, shall be summarized and reported.

7. Sampling Summary

- a. For each monitoring well addressed by the report: a description of;
 - i. the method and time of water level measurement,
 - ii. the method of purging and purge rate and well recovery time,
 - iii. field parameter readings,
 - iv. G.P.S. coordinates with sub-meter accuracy for newly installed wells, and
 - v. the method of disposing the purge water.
- 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 qualifications of the person actually taking the samples; description of any anomalies).
- c. Discussion of the Post-Sampling Purge as required by CCR Title 27 Section 20415.

8. Standard Observations

A summary of the Standard Observations made during the Monitoring Period.

9. **Map(s)**

A map or aerial photograph showing monitoring locations, major site topography, north arrow, scale (1"= 100 to 300', etc.), surface water locations, and groundwater contours to the greatest degree of accuracy possible.

B. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual report to the Board covering the previous monitoring year. The annual Monitoring Period ends December 31. This report shall be combined with the final Monitoring Report of the year and shall be submitted no later than January 31st each year. A complete copy of the monitoring report shall be submitted on CD ROM in Microsoft Word or PDF format with Tables in Microsoft Excel. The annual report must include the information outlined above and the following:

1. **Discussion**

A comprehensive discussion of the compliance record. A review of the past years significant monitoring system and operational changes. A summary of surface water and storm water monitoring. A summary of corrective action results and milestones. 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 annually and revised as necessary. Data collected during the 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 tabular form and on CD ROM, in Microsoft ExcelTM format or in another file format acceptable to the Executive Officer.

4. **Leachate Collection System**

Results of annual leachate system testing as required by CCR Title 27 Section 20340 (d). At sites where leachate is used for dust control, testing that shows that 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 or intermediate) and update the topographical information for areas filled during the past year and any cover added to inactive and completed areas.

C. CONTINGENCY RESPONSE

1. **Leachate Seep**

The Discharger shall, within 24 hours report by telephone or email 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 analyses); and
- d. A summary of corrective measures taken and a description and time schedule for actions proposed.

2. **Response to an initial indication of a release**

Should the initial statistical or non-statistical comparison indicate that a new release is tentatively identified, the Discharger shall:

- a. Within 24 hours, notify the Board verbally or via email 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 retest, or;
 - ii. Make a determination, in accordance with CCR Title 27, Section 20420(k)(7), that a source other than the waste management unit caused the evidence of 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.

If the retest confirms the existence of a release or the Discharger fails to perform the retest, the Discharger shall carry out the appropriate Release Discovery Response. In any case, the Discharger shall inform the Board of the retest outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days.

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 [CCR Title 27, Section 20385(3)], the Discharger shall conclude that a release has been discovered and shall:

- a. Within seven days notify the Board of this fact by certified mail (or acknowledge the Board's determination);
- b. Carry out the appropriate Release Discovery Response for potentially-affected media; 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 Constituents of Concern, the Discharger shall sample for Constituents of Concern at Monitoring Points in the affected medium. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Board, by certified mail, of the concentration of Constituents of Concern 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 a Revised Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that:
 - i. Meets the requirements of CCR Title 27, Section 20420 (k)(5) and 23 CCR Title 27, Section 20425; and
 - ii. Satisfies the requirements of CFR Title 40, Section 258.55(g)(1)(ii);
- c. The Discharger shall, within 180 days of discovering the release, submit a Engineering Feasibility Study meeting the requirements of CCR Title 27, Section 20420(k)(6); 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 requirement [under CCR Title 27, Section 20425(b)] to submit a delineation report within 90 days of when the Board directs the Discharger to begin the Evaluation Monitoring Program.

5. Release Beyond Facility Boundary

Any time the Discharger concludes (or the Executive Officer directs the Discharger to conclude) that a release from the Unit has proceeded beyond the facility boundary; the Discharger shall 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 Board with both a copy of the notification and a current mailing list of Affected Persons.

DEFINITION OF TERMS**A. AFFECTED PERSONS**

Individuals who either own or reside upon the land that 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 Constituent of Concern 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; or
2. In cases where the constituent's Method Detection Limit (MDL) is exceeded in less than ten percent (10%) of historical samples, the MDL is the concentration limit.

C. CONSTITUENTS OF CONCERN (COC)

A broad list of constituents likely to be in typical municipal solid waste. The Constituent of Concern parameter includes all constituents listed in Code of Federal Regulations (CFR), Title 40, Part 258, Appendix II. Monitoring for Constituents of Concern shall encompass only those constituents that do not also serve as Monitoring Parameters. Analysis of Constituents of Concern shall be carried out once every five years at each of the site's groundwater monitoring points, liquid collection systems (e.g., leachate recovery system) and additionally as required due to an indication of release. Wells that have not previously been sampled for Constituents of Concern shall be sampled and analyzed for all Constituents of Concern within six months of this program becoming effective.

D. MATRIX EFFECT

Any increase in the Method Detection Limit 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 Method Detection Limit shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory.

F. MONITORED MEDIUM (MEDIA)

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

G. MONITORING PARAMETERS

A short list of constituents and parameters used for the majority of monitoring activity. The Monitoring Parameters for this Unit in the Analytical Monitoring section of this MRP.

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 the Analytical Monitoring section of this MRP. 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

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. SIGNIFICANT STORM

Any storm of ≥ 1 inch of rain over a 24-hour period or ≥ 2 inches of rain within 7 days.

K. RECEIVING WATERS

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

L. VOLATILE ORGANIC 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 8260B (water), 8270 SIM (1,4 Dioxane), and TO-14 (gas).

ORDERED BY: _____ DATE: _____
Executive Officer