

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. R7-2003-0075
FOR

MAGMA POWER COMPANY, OWNER
DESERT VALLEY COMPANY, LANDOWNER/OPERATOR
CLASS II SOLID WASTE MANAGEMENT FACILITY
Northwest of Westmorland – Imperial County

CONSISTS OF

PART I, PART II, AND PART III

PART I

A. GENERAL

A Discharger who owns or operates a Waste Management Facility is required to comply with the provisions of Chapter 3, Subchapter 3, Article 1, Title 27, California Code of Regulations for the purpose of detecting, characterizing, and responding to releases to the ground water. Section 13267, California Water Code gives the Regional Board authority to require monitoring program reports for discharges that could affect the quality of waters within its region. State Water Resources Control Board Resolution No. 93-062 requires the Regional Board to implement federal Municipal Solid Waste Regulations (Title 40 Code of Federal Regulations, Parts 257 and 258).

This self-monitoring program is issued pursuant to Provision No. 1 of Regional Board Order No. R7-2003- 0075. The principal purposes of a self-monitoring program by a waste discharger are:

1. To document compliance with WDRs and prohibitions established by the Regional Board;
2. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge;
3. To prepare water quality analyses.

B. DEFINITION OF TERMS

1. The "Monitored Media" are those water- or gas-bearing media that are monitored pursuant to this Monitoring and Reporting Program. The monitored Media may include: (1) ground water in the uppermost aquifer, in any other portion of the zone of saturation (Section 20164, Title 27) in which it would be reasonable to anticipate that waste constituents migrating from the Waste Management Facility (WMF) could be detected, and in any perched zones underlying the WMF, and (2) any bodies of surface water that could be measurably affected by a release.
2. The "Constituents of Concern (COC)" are those constituents which are likely to be in the waste in the landfill or which are likely to be derived from waste constituents, in the event of a release. The list of Constituents of Concern for this WMF is found in Summary of Monitoring and Reporting Programs, Part B.2. of this program.
3. The "Monitoring Parameters" consists of a short list of constituents and parameters used for the majority of the monitoring activity. The list of Monitoring Parameters for this WMF is found in Summary of Monitoring and Reporting Programs, B.1. of this program. Monitoring for the short list of Monitoring Parameters constitutes "indirect monitoring", in that the results are used to indirectly indicate the success or failure of adequate containment for the longer list of Constituents of Concern.
4. The "Volatile Organics Composite Monitoring Parameter for Water (VOC_{water})" and the "Volatile Organics Composite Monitoring Parameter for Soil-Pore Gas (VOC_{gas})" are composite Monitoring Parameters addressing all volatile organic constituents detectable in a sample of water- or soil-pore gas, respectively. (See Part III.A.2. of this Program for additional discussion of these Monitoring Parameters).
5. "Matrix Effect" refers to 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 of water.

6. "Facility-Specific Method Detection Limit (MDL)", for a given analytical laboratory using a given analytical method to detect a given constituent (in spite of any Matrix Effect) means the lowest concentration at which the laboratory can regularly differentiate – with 99 percent reliability – between a sample which contains the constituent and a sample which does not.
7. "Facility-Specific Practical Quantitation Limit (PQL)", for a given analytical laboratory using a given analytical method to determine the concentration of a given constituent (in spite of any Matrix Effect) means the lowest constituent concentration the laboratory can regularly quantify within specified limits of precision that are acceptable to the Regional Board's Executive Officer.
8. "Reporting Period" means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. Therefore, the reporting period for Monitoring Parameters is quarterly. The reporting period for Constituents of Concern is every five (5) years. An Annual Report extends from January 1st through December 31st of the previous year. The due date for any given report will be 30 days after the end of its Reporting Period, unless otherwise stated. A summary of due dates for all Monitoring Reports can be found in Summary of Reporting Requirements of this program.
9. "Receiving Waters" refers to any surface water, which actually or potentially receives surface or ground waters, which pass over, through or under waste materials or contaminated soils.
10. "Affected Persons" refers to all individuals who either own or reside upon the land that directly overlies any part of that portion of gas or liquid-phase release that has migrated beyond the facility boundary.

C. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA methods, and in accordance with an approved sampling and analysis plan. Unless otherwise approved by the Regional Board's Executive Officer, any water or soil analysis shall be performed by a laboratory approved by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board's Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the Discharger is responsible for ensuring that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meets the following restrictions:

1. The methods and 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 percent non-numerical determinations (i.e. "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical methods having the lowest "Facility-Specific Method Detection Limit (MDL)", defined in Part I.B.7., shall be selected from among those methods which would provide valid results in light of any "Matrix Effects" (defined in Part I.B.5.) involved.
2. "Trace" results, results falling between the MDL and the facility-specific practical quantitation limit (PQL), shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run and by an estimate of the constituent's concentration.

3. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory, rather than simply being quoted from USEPA analytical method manuals. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with an estimate of the detection limit and quantitation limit actually achieved.
4. All QA/QC data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than 80 percent, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.
5. Upon receiving written approval from the Regional Board's Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by the Regional Board staff.
6. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
7. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or laboratory blanks), the accompanying sample results shall be appropriately flagged.
8. The MDL shall always be calculated such that it represents a concentration associated with a 99 percent reliability of a non-zero result.

D. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five (5) years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample.

1. Identity of sample and of the Monitoring Point or Background 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 the personnel performing each analysis;

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Calculations of results; and
6. Results of analyses, and the MDL and PQL for each analysis.

E. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. DETECTION MONITORING REPORT

A written "Detection Monitoring Report" shall be submitted (Part II.B.1.), in addition to an "Annual Summary Report" (Part I.E.3.). Every five years, the Discharger shall submit a report concerning the direct analysis of all Constituents of Concern as indicated in Part II.B.2. ("COC Report"). All reports shall be submitted no later than their respective due dates as summarized in Summary of Monitoring and Reporting Requirements. The reports shall be comprised of at least the following:

a. Letter of Transmittal

A letter of transmittal shall accompany each report. Such a letter shall include a discussion of any requirement violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The 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;

b. Each Detection Monitoring Report and each COC Report shall include a compliance evaluation summary. The summary shall contain at least:

- 1) For each monitored ground water body, a description and graphical presentation of the velocity and direction of the ground water flow under/around the WMF, based upon water level elevations taken during the collection of the water quality data submitted in the report;
- 2) Pre-Sampling Purge for Samples Obtained From Wells: For each monitoring well addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipments and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of field equipment, results of the pH, temperature, conductivity, the well recovery time, and the method of disposing of the purge water);
- 3) Sampling: For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump – or other device – used and its placement for sampling, and a detailed description of the sampling procedure (number and description

of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations);

- c. A map or aerial photograph showing the locations of observation stations, Monitoring Points, and Background Monitoring Points;
- d. For each Detection Monitoring Report and each COC Report, include laboratory statements of results of all analyses demonstrating compliance with Part I.C.;
- e. Through observation and routine maintenance, evaluate the effectiveness of stormwater run-off/run-on control facilities (berms, etc);

2. CONTINGENCY REPORTING

- a. The Discharger shall report by telephone concerning any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Regional Board within seven (7) days, containing at least the following:
 - 1) A map showing the locations(s) of seepage;
 - 2) An estimate of the flow rate;
 - 3) A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
 - 4) Corrective measures underway or proposed.

- b. Should the initial statistical comparison (Part III.A.1.) or non-statistical comparison (Part III.A.2.) indicate, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified, the Discharger shall immediately notify the Regional Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail with seven (7) days of such determination (Section 20420(j), Title 27), and shall carry out a discrete retest pursuant to Parts II.B.1., and III.A.3. If the retest confirms the existence of a release, the Discharger shall carry out the requirements of Part I.E.2.d. In any case, the Discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven (7) days of completing the retest analysis.

- c. If either the Discharger or the Regional Board determines that there is significant physical evidence of a release (Section 20420(j), Title 27) the Discharger shall immediately notify the Regional Board by phone and by certified mail (or acknowledge the Regional Board's determination) and shall carry out the requirements of Part I.E.2.d. for all potentially-affected monitored media.

- d. If the Discharger concludes that a release has been discovered:
 - 1) If this conclusion is not based upon "direct monitoring" of the Constituents of Concern, pursuant to Part II.B.2, then the Discharger shall, within 30 days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven (7) days of receiving the laboratory analytical results, the discharger shall

notify the Regional Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point. Because this scan is not to be tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point (Section 20420(k)(1), Title 27);

- 2) The Discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Section 20420(k)(5) and Section 20425, Title 27; and
 - 3) The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of Section 20420(k)(6), Title 27.
- e. Any time the Discharger concludes (or the Regional Board Executive Officer concludes) that a liquid- or gaseous-phase release from the WMF has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).
- 1) 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; and
 - 2) Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons – including any newly Affected Persons – within 14 days of concluding there has been any material change in the nature or extent of the release.

3. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual report to the Regional Board on March 15th each year covering the previous monitoring year. This report shall contain:

- a. A Graphical Presentation of Analytical Data (Section 20415(e)(14), Title 27). For each Monitoring Point and Background Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five (5) calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point and Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Regional Board's Executive Officer may direct the Discharger to carry out a preliminary investigation (Section 20080(d)(2), Title 27), the results of which will determine whether or not a release is indicated;
- b. All monitoring analytical data obtained during the previous four Reporting Periods, shall be presented in tabular form as well as on a 3.5" disk, either in MS-DOS/ASCII format or in another file format acceptable to the Regional Board's Executive Officer. Data sets too large to fit on a single disk may be submitted on disk in a commonly available compressed format (e.g., PK-ZIP or NORTON BACKUP). The Regional Board regards the submittal of data in hard copy and on disk as "...the form necessary for..." statistical analysis (Section 20420(h), Title 27) in that this facilitates periodic review by the Regional Board's statistical consultant;
- c. A comprehensive discussion of the compliance record, and the result of any corrective action taken or planned which may be needed to bring the Discharger into full compliance with the WDRs;

- d. A map showing the area, if any, in which deposition of geothermal materials has been completed during the previous calendar year;
- e. A written summary of the groundwater analyses, indicating any changes (new wells, abandoned wells, different analytes, new sampling methods, etc) made since the previous annual summary report; and
- f. An evaluation of the effectiveness of the Leachate Collection and Removal System, pursuant to Section 20340, Title 27.

PART II: MONITORING AND OBSERVATION SCHEDULE

Monitoring reports are to be submitted to show compliance with this Monitoring and Reporting Program. The following are the required reports, the date they are due, monitoring observations, and the information required in each report.

A. WASTE MONITORING

Report the following quarterly:

1. A table reporting the amount of waste received in tons for each month of the previous reporting period;
2. A table presenting the amount of ponded liquid removed from the Monofill for each month of the previous reporting period. If no liquid is present to remove then the statement of "No liquids present" shall be put in the report;
3. Describe the general condition of the Monofill (general maintenance, condition of berms, etc.);
4. A map showing the locations of all observation stations, groundwater monitoring wells, vadose wells, and any other monitoring points.

B. GROUNDWATER MONITORING

1. **"Indirect Monitoring" for Monitoring Parameters Done Quarterly.** For each monitoring medium, all Monitoring Points assigned to detection monitoring and all background Monitoring Points (Part II.B.4.) shall be monitoring quarterly pursuant to the following schedule and for parameters listed in the Part III.B.1. Summary of Self Monitoring and Reporting Programs of this program:
 - a. First Quarterly Report (January 1st through March 31th) – Due by April 30th
 - b. Second Quarterly Report (April 1st through June 30st) – Due by July 31st
 - c. Third Quarterly Report (July 1st through September 30th) – Due by October 31st
 - d. Forth Quarterly Report (October 1st through December 31st) – Due January 31st

Monitoring for Monitoring Parameters shall be carried out in accordance with Part II.B.1. and Part III of this program.

2. **“Direct Monitoring” of all Constituents of Concern Every Five (5) Years.** In the absence of a release being indicated (1) pursuant to Parts II.B.2. and III.A.3. for a Monitoring Parameter, (2) based upon physical evidence, pursuant to Part I.E.2.c. or (3) by a study required by the Regional Board’s Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data (Part I.E.3.a.), the Discharger shall sample all Monitoring Points and Background Monitoring Points of water-bearing media, for all Constituents of Concern every fifth year, with successive direct monitoring efforts being carried out in 2004 and every fifth year, thereafter. Direct monitoring for Constituents of Concern shall be carried out in accordance with Part II.B.3 of this program, and shall encompass only those Constituents of Concern listed in the Summary of Self-Monitoring and Reporting Program.

3. **“Monitoring Points and Background Monitoring Points for Each Monitored Medium”:**
 - a. The Discharger shall sample the Monitoring Points and Background Monitoring Points in accordance with the sampling schedule given under Parts II.B.1. and II.B.2 (immediately foregoing), taking enough samples to qualify for the most appropriate test under Part III.
 - b. Monitoring points of compliance are W01, W04, W09, W10, W11, W12, W301, W302, W303, W304, W305, W306, and proposed wells W307, W308, and W309.
 - c. Background water quality is determined from original monitoring data for each well listed above.

4. **Initial Background Determination:** For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Background Monitoring Point in each monitored medium (Section 20415(e)(6), Title 27):
 - a. Whenever a new Constituent of Concern is added to the Water Quality Protection Standard, including any added by the adoption of this Board Order, the Discharger shall collect at least one sample quarterly for at least one year from each Background Monitoring Point in each monitored medium and analyze for the newly-added constituent(s); and
 - b. Whenever a new Background Monitoring Point is added, including any added by this Board Order, the Discharger shall sample it at least quarterly for at least one year, analyzing for all Constituents of Concern and Monitoring Parameters.

5. **Determination of Ground Water Flow Rate/Direction** (Section 20415(e)(15), Title 27): The Discharger shall measure the water level in each well and determine ground water flow rate and direction in each ground water body described in Part II.B.4. at least quarterly, including the times of expected highest and lowest elevations of the water level for the respective ground water body. This information shall be included in each quarterly monitoring report.

C. LEACHATE COLLECTION AND REMOVAL SYSTEM (LCRS) MONITORING

The following are the monitoring and reporting requirements of the LCRS for each **quarterly** report:

1. The LCRS shall be inspected weekly and any liquid present shall be removed and stored in either an above ground storage tank or lined surface impoundment. The liquid removed shall have field Electrical Conductance (EC) and pH readings taken and recorded;

2. A table presenting the amount of liquid removed from the LCRS for each month of the reporting period. If no liquid is present to remove then the statement "No liquid present" shall be reported in the report.

D. LEAK DETECTION SYSTEM (LDS) MONITORING

The following are the monitoring and reporting requirements of the LDS for each **quarterly** report.

- a. Each LDS sump shall be monitored weekly and any liquid found shall be removed and stored in either above ground storage tanks or lined surface impoundments used for the LCRS liquids. The liquid removed shall have field Electrical Conductance (EC) and pH readings taken and recorded;
- b. A table presenting the amount of liquid removed from the LDS for each month of the previous reporting period. If no liquid is present then the statement "No liquid present" shall be reported in the report;
- c. Should an amount of liquid or analysis of the liquid removed from the LDS alert the discharger that leak may be occurring from the primary liner, the discharger shall contact the Regional Board immediately.

E. VADOSE ZONE MONITORING

The following are the monitoring and reporting requirements of the vadose zone monitoring for each quarterly report.

- a. The vadose zone monitoring system shall be monitored on a quarterly basis. The results shall be presented in a table and shall report, at a minimum, the last four measurements taken for each access tube;
- e. A written summary of the vadose zone data collected and summary of what the data represents shall be submitted;
- c. Should a moisture measurement alert the discharger that a liquid leak may be occurring from the Monofill, the discharger shall contact the Regional Board immediately.

**PART III: STATISTICAL AND NON-STATISTICAL ANALYSES OF SAMPLE DATA
DURING A DETECTION MONITORING PROGRAM**

- A. The Discharger shall use the following methods to compare the downgradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the WMF. For any given data set, proceed sequentially down the list of statistical analysis methods listed in Part III.A.1., followed by the non-statistical method in Part III.A.2., using the first method for which the data qualifies. If that analysis tentatively indicates the detection of a release, implement the retest procedure under Part III.A.3.
1. Statistical Methods. The Discharger shall use one of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters, which exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples taken during that Reporting Period. Each of these statistical methods is more fully described in the statistical methods discussion, below. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be one-tailed (testing only statistically significant increase relative to background):
 - a. One-Way Parametric Analysis of Variance ANOVA followed by multiple comparisons (Section 20415(e)(8)(A), Title 27). This method requires at least four (4) independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. It shall be used when the background data from the parameter or constituent, obtained during a given sampling period, has not more than 15 percent of the data below the PQL. Prior to analysis, replace all 'trace' determinations with a value halfway between the PQL and the MDL values reported for that sample run, and replace all "non-detect" determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95 percent confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99 percent confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated from that parameter or constituent;
 - b. One (1)-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons. This method requires at least nine independent samples from each Monitoring Point and Background Monitoring Point, therefore, the Discharger shall anticipate the need for taking more than four samples per Monitoring Point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, has not more than 50 percent of the data below the PQL. The ANOVA shall be carried out at a 95 percent confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99 percent confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent; or
 - c. Method of Proportions. This method shall be used if the "combined data set", the data from a given Monitoring Point in combination with data from the Background Monitoring Points, has between 50 percent and 90 percent of the data below the MDL for the constituent or parameter in question. This method (1) requires at least nine (9) downgradient data points per Monitoring Point per Reporting Period, (2) requires at least 30 data points in the combined data set, and (3) requires that $N * P > 5$ (where N is the number of data points in

the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99 percent confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter; or

- d. Other Statistical Methods. These include methods pursuant to Section 20415(e)(8)(E).
2. Non-Statistical Method. The Discharger shall use the following non-statistical method for the VOC_{water} and VOC_{spg} Composite Monitoring Parameters and for all Constituents of Concern which are not amenable to statistical tests under Part III.A.1.; each of these groupings of constituents utilizes a separate variant of the test, as listed below. Regardless of the variant used, the method involves a two-step process: (1) from all constituents to which the variant applies, compile a list of those constituents which exceed their respective MDL in the downgradient sample, yet do so in less than 10 percent of the applicable background samples; and (2) (where several independent samples have been analyzed for that constituent at a given Monitoring Point) from the sample which contains the largest number of constituents. Background shall be represented by the data from all samples taken from the appropriate Background Monitoring Points during that Reporting Period (at least one sample from each Background Monitoring Point). The method shall be implemented as follows:
 - a. For the Volatile Organics Composite Monitoring Parameter for Water Samples (VOC_{water}): For any given Monitoring Point, the VOC_{water} Monitoring Parameter is a composite parameter addressing all VOCs detectable using USEPA Method 8260, including at least all 47 VOCs listed in Appendix I to 40 CFR 258, and all unidentified peaks. Compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (an unidentified peak is compared to its presumed (MDL), and also (2) exceeds its MDL in less than 10 percent of the samples taken during that Reporting Period from that medium's Background Monitoring Points. The Discharger shall conclude that a release is tentatively indicated for the VOC_{water} Composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL;
 - b. For the Volatile Organics Composite Monitoring Parameter for Soil-Pore Gas Samples (VOC_{spg}): The VOC_{spg} Monitoring Parameter is a composite parameter for soil-pore gas addressing at least all 47 VOCs listed in Appendix I 40 CFR 258, based upon either GC or GC/MS analysis of at least 10 liter samples of soil-pore gas (e.g., collected in a vacuum canister). It involves the same scope of VOCs as does the VOC_{water} Monitoring Parameter. Compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (as unidentified peak is compared to its presumed MDL), and also (2) exceeds its MDL in less than 10 percent of the samples taken during that Reporting Period from the (soil-pore-gas) Background Monitoring Points. The Discharger shall conclude that a release is tentatively indicated for the VOC_{spg} Composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL; or
 - c. For Constituent of Concern: Compile a list of constituents that exceed their respective MDL at the Monitoring Point yet do so in less than 10 percent of the background samples taken during that Reporting Period. The Discharger shall conclude that a release is tentatively indicated if the list either (1) contains two or more constituents, or contains one constituent, which exceeds its PQL.
 3. Discrete Retest (Section 20415(e)(8)(E), Title 27). In the event that the Discharger concludes that a release has been tentatively indicated (under Parts III.A.1. or III.A.2.), the Discharger shall, within 30 days of this indication, collect two (2) 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 suite as were used for the initial test. Re-sampling of the Background Monitoring Points is optional. As soon as the data is available, the Discharger shall

rerun the statistical method (or non-statistical comparison) separately upon each suite of retest data. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirms the original indication, the Discharger shall conclude that a release has been discovered. All 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 or Monitoring Parameter which triggered the indication there, as follows:

- a. If an ANOVA method was used, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating Monitoring Point;
- b. If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, using the new sample suites from the indicating Monitoring Point;
- c. If the non-statistical method was used:
 1. Because the VOC Composite Monitoring Parameters (VOC_{water} or VOC_{spg}) each address, as a single parameter, an entire family of constituents, which are likely to be present in any landfill release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest samples(s) differs from that in the sample which initiated the retest;
 2. Because all Constituents of Concern that are jointly addressed in the non-statistical testing under Part III.A.2.c. remain as individual Constituents of Concern, the scope of the laboratory analysis for the non-statistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

B. RESPONSES TO VOC DETECTION IN BACKGROUND

1. Except as indicated in Part III.B.2., below, any time the laboratory analysis of a sample from a Background Monitoring Point, sampled for VOCs under Part III.A., shows either (1) two or more VOCs above their respective MDL, or (2) one VOC above its respective PQL, then the Discharger shall immediately notify the Regional Board by phone that possible background contamination has occurred, shall follow up with written notification by certified mail within seven days, and shall obtain two new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detectable VOCs with 30 days. If either or both the new samples validates the presence of VOC(s) at that Background Monitoring Point, using the above procedure, the Discharger shall:
 - a. Immediately notify the Regional Board about the VOC(s) verified to be present at that Background Monitoring Point, and follow up with written notification submitted by certified mail within seven (7) days of validation; and

- b. Within 180 days of validation, submit a report, acceptable to the Regional Board's Executive Officer, which examines the possibility that the detected VOC(s) originated from the WMF and proposing appropriate changes to the Monitoring Program.
2. If the Regional Board's Executive Officer determines, after reviewing the report submitted under Part III.B.1.b., that the VOC(s) detected originated from a source other than the WMF, the Regional Board's Executive Officer will make appropriate changes to the Monitoring Program.
3. If the Regional Board's Executive Officer determines, after reviewing the report submitted under Part III.B.1.b., that the detected VOC(s) most likely originated from the WMF, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Part I.E.2.d.

SUMMARY OF SELF-MONITORING

A. WASTE MONITORING

Report the following quarterly:

1. Record the total amount of waste in tons disposed of at the site during each month.
2. Table presenting amount of any ponded liquid removed from monofill
3. Discuss general condition of the monofill (maintenance, condition of berms, etc.)
4. A map showing the locations of all observation stations, groundwater monitoring wells, vadose wells, and any other monitoring point.
5. Include a description of the waste stream.

B. GROUND WATER ANALYSIS FOR DETECTION MONITORING

1. “Indirect Monitoring” for Monitoring Parameters done quarterly. The ground water monitoring points assigned to Detection Monitoring in Part II.B.1. of this Program, and shall be sampled quarterly. The Detection Monitoring Points shall be sampled for the following Monitoring Parameters:

<u>Parameter & Constituents</u>	<u>Unit</u>	<u>Sampled</u>	<u>Reported</u>
Groundwater Elevations	USGS Datum	Quarterly	Quarterly
Temperature	°F	Quarterly	Quarterly
pH	#	Quarterly	Quarterly
Specific Conductance	µmhos/cm	Quarterly	Quarterly
Total Dissolved Solids (TDS)	mg/L	Quarterly	Quarterly
Arsenic	mg/L	Quarterly	Quarterly
Barium	mg/L	Quarterly	Quarterly
Cadmium	mg/L	Quarterly	Quarterly
Lead	mg/L	Quarterly	Quarterly
Zinc	mg/L	Quarterly	Quarterly
Sodium	mg/L	Quarterly	Quarterly
Sulfate	mg/L	Quarterly	Quarterly
Chloride	mg/L	Quarterly	Quarterly
Gross Alpha Particles	pCi/L	Quarterly	Quarterly
Gross Beta Particles	pCi/L	Quarterly	Quarterly

The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Board’s Executive Officer, all analyses shall be conducted by a laboratory certified by the State of California’s Department of Health Services. All analyses shall be conducted in accordance with the latest edition of “Guidelines Establishing Test Procedures for Analysis of Pollutants” (40 CFR 136), promulgated by the USEPA.

2. “Direct Monitoring” of all Constituents of Concern Done Every Five Years. In the absence of a release being indicated (1) pursuant to Parts II.B.2. and III.A.3. for a Monitoring Parameter, (2) based upon physical evidence, pursuant to Part I.E.2.c., or (3) by a study required by the Regional Board’s Executive Officer based upon anomalies noted during visual inspection of

graphically-depicted analytical data (Part I.E.3.a.), the Discharger shall sample all Monitoring Points and Background Monitoring Points of water-bearing media, for all Constituents of Concern every five years. Direct monitoring efforts shall be carried out in 2004 and every five years thereafter. The Five-Year Constituents of Concern Report shall be submitted with the appropriate Annual Report for that five-year sampling event.

Direct monitoring for Constituents of Concern shall be carried out pursuant to Parts II.B.2. and III of this program, and shall encompass only those Constituents of Concern that do not also serve as a Monitoring Parameter.

The Constituents of Concern for water-bearing media (i.e. ground water, surface water, and soil-pore liquid) shall consist of the combined listing of all constituents listed in Appendices I and II, 40 CFR Part 258, in addition to:

<u>Constituent</u>	<u>Units</u>
Fluoride	mg/L
Nitrate	mg/L
Gross Alpha Particles	pCi/L
Gross Beta Particles	pCi/L
Cesium 137*	pCi/L
Cobalt 60*	pCi/L
Radium 226*	pCi/L
Potassium 40*	pCi/L
Thorium 228*	pCi/L
Thorium 232*	pCi/L
(* by gamma scan)	
Total Dissolved Solids	mg/L
pH	#
Electrical Conductivity	µmhos/cm

C. LEACHATE COLLECTION AND REMOVAL SYSTEM (LCRS) MONITORING

Report the following inspections and data quarterly:

1. Inspect weekly and remove any liquid
2. Table showing the amount of liquid removed from LCRS per month

D. LEAK DETECTION SYSTEM (LDS) MONITORING

Report the following inspections and data quarterly:

1. Inspect LDS weekly and remove any liquid
2. Table showing the amount of liquid removed from LDS per month

E. VADOSE ZONE MONITORING

Report the following quarterly:

1. Data from quarterly monitoring of vadose zone presented in tabular form.
2. Written summary of what the data represents.

F. ANNUAL REPORT

The Discharger shall submit an annual report to the Regional Board on March 15th of each year covering the previous monitoring year as described in Part I.3. of this Monitoring and Reporting Program.

SUMMARY OF REPORTING REQUIREMENTS

1. The Discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with Waste Discharge Requirements.
2. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurement(s);
 - b. The individual(s) who performed the sampling or measurement(s);
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or method used; and
 - f. The results of such analyses.
3. Each report shall contain the following statement:

“I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.”
4. A duly authorized representative of the Discharger may sign the documents if:
 - a. The authorization is made in writing by the person described above;
 - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
 - c. The written authorization is submitted to the Regional Board’s Executive Officer.
5. Quarterly Monitoring Reports shall be submitted to the Regional Board quarterly according to the following schedule:
 - a. First Quarterly Report (January 1st through March 31th) – Due by April 30th
 - b. Second Quarterly Report (April 1st through June 30st) – Due by July 31st
 - c. Third Quarterly Report (July 1st through September 30th) – Due by October 31st
 - d. Forth Quarterly Report (October 1st through December 31st) – Due January 31st
7. Annual Reports Annual Monitoring Reports shall be submitted to the Regional Board by March 15th of the each year, covering the Reporting Period from the previous January 1st through December 31st.
8. Five-Year COC Reports Continuing with the 2004 COC sampling event schedule, with successive sampling efforts being carried out 2004 and every fifth year thereafter, as long as the WMF is in operation and through the closure/post-closure period.

The Five-Year COC Report shall be submitted with the appropriate Annual Report due on March 15th, pursuant to Parts II.B.2. and Summary of Monitoring and Reporting Programs of this Monitoring and Reporting Program.

9. Contingency Reports Notify immediately by telephone, and submit a written report pursuant to Part I.E.2. of this Monitoring and Reporting Program.

10. Submit Monitoring Reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

Ordered by: _____
Executive Officer

Date