ITEM NO. 9

March 22, 2013

ERRATA SHEET

Order No. R8-2013-0002

POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION WASTE DISCHARGE REQUIREMENTS

FOR
RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT

HIGHGROVE SANITARY LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
RIVERSIDE COUNTY

(Language added is shown as underlined)
(Language deleted is shown as ~~strike out~~)

1. Monitoring and Reporting Program No. R8-2013-0002, Pages 2 and 3 of 25, Section B. 5, make the following changes:

   The Discharger shall review the statistically derived Water Standards concentration limits every two ~~three~~ years. Recent data that have been statistically analyzed in accordance with B.7.a.(i), and are determined to be statistically similar to existing background data, shall be made a part of the revised background data. This new background data shall be used to statistically derive the revised Water Standard concentration limits.~~The Discharger shall use a Sen's-Slope/Mann-Kendall trend analysis (at 90% confidence, looking only for an upward slope) on each such MonPt/COC pair's combined prospective new historical data set (existing historical data plus tentative three years of new data points), and shall follow up any no-significant-slope determination with a t-test comparing that pair's existing background data set to its prospective new data, at 95% confidence. For any MonPt/COC pair that passes both of these tests t.~~ The Discharger shall propose to update that pair's Water Standards concentration limit data analysis to include the new data points, and shall include in the proposal a revised Water Standards concentration limit value determined in the same manner as previously determined for that pair. The revised historic data and Water Standards concentration limit shall become effective during the first Reporting Period following approval of the proposal.

2. Monitoring and Reporting Program No. R8-2013-0002, Page 4 of 25, Section B. 7ai., make the following changes:

   (a) Metals surrogate MonPars - pH, total dissolved solids (TDS), chloride, sulfate, and nitrate as nitrogen, or other constituents as approved~~; and~~

   ~~*(b) Non-metallic MonPar COCs detectable in background - Each VOC or other non-metallic organic or inorganic COC that exceeds its respective PQL in at least ten percent of the historical data samples from the monitoring points for a monitored water-bearing medium (i.e., surface water body, aquifer, perched zone, or soil-pore liquid) during a given Reporting Period.*~~

3. Monitoring and Reporting Program No. R8-2013-0002, Pages 10 and 11 of 25, E. 7, make the following changes:

Winterization plans and topographical mapping updates - By October 1 of each year, all drainage and erosion control system construction and maintenance activities shall be completed. Annually, by October 31, winterization plans and topographical mapping updates shall be submitted as follows:

   ~~*a. A summary of the containment structure, waste management unit, and drainage control system records for the monitoring period. The summary shall include a list of deficiencies identified and the dates and types of corrective measures taken to achieve compliance with the waste discharge requirements. If corrective measures for identified deficiencies could not be implemented by the end of the monitoring period, the Discharger shall provide the reason for noncompliance and a time schedule for implementing the corrective measures.*~~

   ~~*b. For the previous 12 months, a summary of the adequacy and effectiveness of the drainage control system to collect and divert the calculated volume of precipitation and peak flows resulting from a 100-year, 24-hour storm.*~~

   ~~*c. A tabular summary of the new and existing drainage control structures, including the types and completion dates of maintenance activities performed for each of these structures; and*~~

   ~~*d.*~~ *a. ~~An 11"x17" (or better scale) facility site map indicating the location of the elements listed in C.6.c, above, and the flow direction of site drainage~~. An 11x17 inch facility site map shall be provided indicating locations of new and existing components of the site drainage and erosion control system, including hardscape structures and other permanent and annual/seasonal erosion control systems, sediment control systems and storm water treatment BMPs.*

4. Monitoring and Reporting Program No. R8-2013-0002, Page 12 of 25, Attachment C, make the following changes:

Attachment C

Highgrove Sanitary Landfill Monitoring Programs, Monitoring Parameters and Monitoring Frequency

Table 1 - Monitoring and Reporting Due Dates

Task Description	Monitoring Period	Report Due Date
Semi-Annual Water Quality Monitoring	October 1 - March 31	April 30 of each year
	April 1 - September 30	October 31 of each year
Semi-Annual General Site Monitoring	October 1 - March 31	April 30 of each year
	April 1 - September 30	October 31 of each year
Annual Summary	April 1 of previous year - March 31	April 30 of each year
UnPar COC Analysis	Every 5 years (alternating between Fall and Spring Reporting Periods)	April 30, 2010; October 31, 2015; April 30, 2020; October 31, 2025; etc.
Extracted and treated groundwater from the Pump and Treat System	October 1 - March 31 April 1 - September 30	April 30 of each year October 31 of each year
October Landfill Gas Condensate Testing Analysis	October 1 - October 31	April 30 of the following year
April Landfill Gas Condensate Retesting Analysis (When Required)	April 1 - April 30	August 1 of each year
~~Annual Drainage Control and Maintenance~~ Winterization Plan-Facility Site Map	~~By~~ October ~~31~~ 1 of each year	~~December~~ October 31 of each year
Aerial or Ground Survey	By October ~~15~~ 1 of every fifth year	~~December~~ October 31 of every fifth year

State of California
California Regional Water Quality Control Board
Santa Ana Region

March 22, 2013

STAFF REPORT

ITEM: * 9

SUBJECT: Waste Discharge Requirements for Riverside County Waste Management Department, Highgrove Sanitary Landfill, Order No. R8-2013-0002

DISCUSSION:

Riverside County Waste Management Department (hereinafter the Discharger) owns and operates the Highgrove Sanitary Landfill (HSL) located in a portion of Sections 10 and 15, T2S R4W, SBB&M as shown on Attachment A.

The HSL is a closed sanitary landfill that stopped accepting wastes as of July 10, 1998.

The HSL is currently regulated under Waste Discharge Requirements (WDRs) Order No. 79-35 as amended by Order No. 98-99. The WDRs for HSL are being revised to include closure and post-closure requirements. The Discharger installed a landfill closure cap and implemented a corrective action system at HSL, as required under Title 27, California Code of Regulations. The revised Order also implements those portions of the federal regulations (Subtitle D regulations) that are not addressed by, or are more restrictive than, the Title 27.

Construction of the landfill's final closure cover began on September 18, 2000, and was completed on June 27, 2001. The cover system consists of a 5-foot monolithic low permeability soil cover with a vegetative top layer. The cover was constructed in accordance with the requirements contained in Title 27.

A Corrective Action Program (CAP) is currently being implemented at the HSL. The CAP consists of a groundwater pump and treatment system designed to extract and treat volatile organic compounds (VOCs) contaminated groundwater from beneath the landfill. In addition, the discharger has installed a landfill gas extraction system at the landfill to remove landfill gas that may be contributing to the VOC contamination at the site.

The Order requires the Discharger to maintain and operate the existing landfill gas collection system; to continue operating the groundwater pump and treatment system;

to monitor groundwater on a semi-annual basis; and to maintain the drainage and erosion control system.

This Order contains waste discharge requirements that implement the Title 27 Regulations for nonhazardous waste, State Water Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, and the Water Quality Control Plan for the Santa Ana River Basin. This Order also implements those provisions of the federal regulations contained in 40 CFR Part 258 (Subtitle D) that are applicable to the HSL.

RECOMMENDATION:

Adopt Order No. R8-2013-0002, as presented.

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

MONITORING AND REPORTING PROGRAM NO. R8-2013-0002
FOR
RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT

HIGHGROVE SANITARY LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
RIVERSIDE COUNTY

A. GENERAL

1. The Riverside County Waste Management Department (hereinafter Discharger) shall perform monitoring activities specified in this Monitoring and Reporting Program (M&RP) to implement all applicable portions of 40 CFR Part 258 Subpart E (Ground-Water Monitoring and Corrective Action) and §§20380 - 20430 of Title 27 (Water Quality Monitoring and Response Programs for Solid Waste Management Units).

2. Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA Publication "SW-846").

B. WATER QUALITY MONITORING PROGRAM UNDER CORRECTIVE ACTION PROGRAM (CAP)

1. The Water Quality Protection Standards (Water Standards), which is required pursuant to Title 27, §20390, shall consist of the list of Constituents of Concern (COC), the respective concentration limit for each COC at each Monitoring Point, the Point of Compliance, and all Monitoring Points, as described in this M&RP. The Water Standards shall apply during the corrective action compliance period.

2. Monitoring Points (MonPt) and Background Monitoring Points are selected in accordance with Title 27, §20405. The wells monitored as part of the corrective action program (CAP) include: HG-1, HG-2, HG-3, HG-4, HG-5, HG-6, HG-8, HG-9, HG-10, HG-20, HG-21, HG-31 and HG-32.

3. The Point of Compliance is a vertical surface located at the hydraulically downgradient limit of the HSL that extends through the uppermost aquifer underlying the HSL, and is shown in the attached Map (Attachment B).

4. The Water Standards concentration limits for each COC shall be determined as follows:

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a. In cases where the constituent's method detection limit (MDL) is exceeded in less than ten percent of the historical samples, the Water Standards concentration limit is the highest Practical Quantification Limit (PQL) value associated with the MonPt/COC pair's historical data set.

b. In cases where the inorganic constituent's MDL is exceeded in ten percent or more of the historical samples, a statistically based Water Standards concentration limit must be defined and regularly updated as follows:

   i. Statistically analyze the historical data set, and propose to the Executive Officer a statistically derived Water Standards concentration limit for each Monitoring Parameter (MonPar) at each MonPt for which there are at least eight reference data points. The statistical analysis shall comply with Title 27, §20415.

   ii. In cases where there are less than eight reference data points, for a given MonPt/COC pair, the Discharger shall collect samples quarterly until each such data deficient MonPt/COC pair has at least eight reference background data points, at which point, the Discharger shall submit a proposed Water Standards concentration limit(s), together with a proposed data analysis method for each MonPt/COC pair to the Executive Officer for approval. This data collection and submittal to the Executive Officer shall take no longer than two years.

c. In cases where the organic or synthetic constituent's MDL is exceeded in ten percent or more of the historical data set, and the organic or synthetic constituent is from a source other than the HSL, each such MonPt/COC pair must have its Water Standards concentration limit determined by applying an approved data analysis method to its historic data set, just like a readily detectable inorganic constituent would be addressed.

d. In cases where the organic or synthetic constituent's MDL is exceeded in ten percent or more of the historical data set, and the organic or synthetic constituent is from the HSL, each such MonPt/COC pairs' Water Standards concentration limit shall be the highest Practical Quantification Limit (PQL) value associated with the MonPt/COC pair's historical data set, just like an infrequently detected constituent would be addressed (Section B.7a of the M&RP). The Discharger may propose a Water Standards concentration limit greater than background, or in this instance the highest PQL, provided that the proposed concentration limit is in accordance with Title 27, §20395. The proposed concentration limit greater than background shall not be effective until approved by the Executive Officer.

5. The Discharger shall review the Water Standards concentration limits every three years. The Discharger shall use a Sen's-Slope/Mann-Kendall trend analysis (at 90% confidence, looking only for an upward slope) on each such MonPt/COC pair's combined prospective new historical data set (existing historical data plus

tentative three years of new data points), and shall follow up any no-significant-slope determination with a t-test comparing that pair's existing background data set to its prospective new data, at 95% confidence. For any MonPt/COC pair that passes both of these tests, the Discharger shall propose to update that pair's Water Standards concentration limit data analysis to include the new data points, and shall include in the proposal a revised Water Standards concentration limit value determined in the same manner as previously determined for that pair. The revised historic data and Water Standards concentration limit shall become effective during the first Reporting Period following approval of the proposal.

6. Throughout the CAP, for each MonPt/MonPar pair that has shown a verified release indication, the Discharger shall create and maintain a concentration-versus-time plot with the pair's Water Standards concentration limit shown as a horizontal line on the plot, pursuant to Attachment C to this M&RP. This line serves as the pair's cleanup goal. The Discharger shall include these plots in a Corrective Action Measures Report (CAMs Report) in the HSL's Annual Summary Monitoring Report. This CAMs Report shall identify which release-affected MonPt/MonPar pairs are responding well to the CAMs (i.e., they are trending down toward, or have reached their Water Standards concentration limit) and shall identify all other release-affected MonPt/MonPar pairs as indicating a need to revise the CAMs. At the request of the Executive Officer, the Discharger shall propose, as part of the Monitoring Report for the next Reporting Period, revised CAMs that will provide positive remediation effects on all release-affected MonPt/MonPar pairs. The revised CAMs become effective immediately upon approval.

7. Monitoring Parameters:

   a. The Discharger shall analyze separate water samples from each groundwater monitoring well for each MonPar in Table 4 of Attachment C of this M&RP, and shall test the resulting data using one of the statistical or non-statistical methods listed in Title 27, §20415(e).

      i. Monitoring parameters that use statistical methods — For all MonPt/MonPar pairs not addressed by an assigned or approved nonstatistical data analysis method, the Discharger shall use only statistical data analysis methods approved by the Executive Officer, meet Title 27, §20415(e)(6-12), use a pass-1-of-2 retesting approach that involves taking the first sample at the very start of the reporting period with mid-period retest sample, if needed, and that are developed to meet USEPA's Unified Guidance (2009)[1], including validation of the method's statistical power by comparison to that agency's relevant Reference Power Curve, as therein described. MonPt/MonPar pairs subject to such testing

[1] US EPA, MARCH 2009, STATISTICAL ANALYSIS OF GROUNDWATER MONITORING DATA AT RCRA FACILITIES UNIFIED GUIDANCE (EPA 530/R-09-007) (available at http://www.epa.gov/osw/hazard/correctiveaction/resources/guidance/sitechar/gwstats/unified-guid.pdf

include:

(a) Metals surrogate MonPars - pH, total dissolved solids (TDS), chloride, sulfate, and nitrate as nitrogen, or other constituents as approved; and

(b) Non-metallic MonPar COCs detectable in background - Each VOC or other non-metallic organic or inorganic COC that exceeds its respective PQL in at least ten percent of the historical data samples from the monitoring points for a monitored water-bearing medium (i.e., surface water body, aquifer, perched zone, or soil-pore liquid) during a given Reporting Period.

ii. Monitored constituents that use non-statistical methods:

(a) VOCs and any other organic constituents that have not been detected in historical data, except by accident, or that are detected less than 10 percent of the time in the historical data, use the California Nonstatistical Data Analysis Method described in Attachment C to this M&RP;

(b) All MonPt/MonPar pairs in Tracking Status (verified release indication) shall use the Concentration-Versus-Time-Plotting nonstatistical data analysis method described in Attachment C to this M&RP; and

(c) All MonPt/UnPar pairs that are monitored every five years, shall use the Upper 85th Percentile Nonstatistical Data Analysis Method provided for that purpose in Attachment C to this M&RP.

b. For monitoring parameters that are specified in Attachment B, Table 4 and Table 5, the Executive Officer may approve alternative monitoring parameters that meet the requirements of Title 27, §20380 et seq. The Executive Officer may also approve alternative statistical or non-statistical methods that meet the requirements of Title 27, §20415(e).

8. The Discharger must monitor for COCs as follows:

a. Known constituents plus Appendix II

i. The "COC list" (list of Constituents of Concern required under Title 27, §20395) includes all constituents listed in Attachment C, Table 4, of this M&RP.

ii. The Discharger shall monitor all UnPar COCs (i.e., those COCs that are not MonPars), Table 5, every five years, pursuant to Title 27, §20420(g). The analytical data shall be analyzed by using the Upper 85th Percentile Nonstatistical Method provided for that purpose in Attachment D of this M&RP.

Tentative

b. Background sampling for new constituents - For each newly detected Appendix II constituent that is added to the existing MonPar COC list, the Discharger shall establish a reference background value using the method described in Section B.4 of this M&RP. Once this reference set of background data is established, for a given new MonPt/MonPar pair, the discharger shall include the data set for that pair, in a separate identified item in the monitoring report for that reporting period. This item shall include, for each new MonPt/COC pair, a data analysis method (meeting Section B.7 of this M&RP) to be used on it when it begins functioning as a Standard Status MonPt/MonPar pair (looking for a release indication). Existing background data for the newly identified Appendix II constituents may be substituted for additional background sampling with the approval of the Executive Officer.

C. GENERAL SITE MONITORING

1. At a minimum, the landfill gas condensate collection system shall be inspected and evaluated on a monthly basis for its effectiveness. All deficiencies identified and the dates and types of corrective actions taken shall be recorded in a permanent log. All deficiencies shall be photographed for the record. The volume of liquids collected in the containment structure shall be recorded monthly. Samples of gas condensate shall be collected in accordance with the monitoring frequency in Table 2, and analyzed for constituents specified in Tables 3 & 6.

2. Quarterly, the Discharger shall inspect all waste management units and shall evaluate their effectiveness. All areas of slope failure, differential settlement, fissuring, erosion, ponding, leachate staining, and seepage into or from the HSL shall be identified, field-marked, and documented. In the event seepage is discovered, the location of each seep shall be mapped and a mitigation plan submitted for the approval by the Executive Officer. All findings shall be photographed for the record.

3. At a minimum, all run-on and runoff drainage control structures shall be inspected and evaluated quarterly for their effectiveness. During dry weather conditions, the effectiveness of the drainage control system shall be evaluated on the basis of its conformance to the as-built drawings, or revised drawings, for the system. All deficiencies shall be identified, recorded, and repaired.

4. Every five years, an aerial or ground survey of the HSL shall be performed in accordance with the schedule in Table 2.

D. MONITORING OF THE INFLUENT AND EFFLUENT OF THE GROUNDWATER PUMP AND TREAT SYSTEM

Semi-annually, the Discharger shall collect water samples from air stripper influent and effluent, and shall analyze those samples for VOCs (EPA Method 8260).

E. REPORTING

1. Monitoring report contents - All reports shall be submitted no later than one month following the end of the respective Monitoring Period. The reports shall be comprised of at least the following, in addition to the specific contents listed for each respective report:

   a. Transmittal letter - A letter summarizing the essential points in the report. This letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations;

   b. Compliance evaluation summary - For groundwater monitoring and COC reports, a compliance evaluation summary containing at least:

      i. Flow rate/direction - For each monitored groundwater body, a description and graphical presentation (e.g., arrow on a map) of the velocity and direction of groundwater flow under/around the HSL, based upon water level elevations taken during the quarterly measurements. The groundwater flow rate/direction shall be reported on a semi-annual basis in the semiannual reports;

      ii. Well sampling information - For each monitoring well addressed by the report, a description of the method and time of water level measurement, and a description of the method of purging used before sampling to remove stagnant water in the well, pursuant to Title 27, §20415(e)(12)(B);

      iii. Sampling information - 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 vertical 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 of the person collecting the samples, and any other observations); and

      iv. Monitoring report in PDF format - A word-searchable-PDF-format copy of each monitoring report shall be, uploaded to the HSL's GeoTracker account for each Reporting Period

   c. Map - A map (or copy of an aerial photograph) showing the locations of observation stations, monitoring points, and background monitoring points;

   d. Laboratory data - The laboratory results of all analyses shall be submitted in accordance with Section E.9 of this M&RP;

e. Landfill gas condensate containment, and drainage and erosion control systems - A statement as to the condition and performance of the landfill gas condensate containment structure, the landfill closure cap, and the drainage and erosion control systems. The summary shall include a list of deficiencies identified and the dates and types of corrective actions taken to achieve compliance with the waste discharge requirements. If corrective actions for identified deficiencies could not be implemented by the end of the monitoring period; the Discharger shall provide the reason(s) for noncompliance and a time schedule for implementing the corrective actions.

2. Semi-Annual water quality monitoring reports - All monitoring reports shall be submitted in accordance with the schedule shown in Table 1, and shall include a list of all MonPt/MonPar pairs that have shown a verified exceedance of their respective Water Standards concentration limit during that reporting period, in addition to a listing of all other MonPt/MonPar pairs that have demonstrated a release during any prior reporting period.

3. Annual summary report - The Discharger shall submit an annual report to the Regional Board covering the previous monitoring year (April 1 of the previous year through March 31 of the following year). The annual summary report is due on April 30. This report may be combined with the water quality monitoring report for the period ending on March 31, and shall meet the following requirements:

   a. Graphical presentation - Graphing the groundwater analytical data shall be in accordance with Title 27, §20415(e)(14), but the concentration-versus-time plots (including the Water Standards concentration limit, plotted as an identified horizontal line) for all release-affected MonPt/MonPar pairs will be included in the compliance record discussion of Section E.3.c. of the M&RP;

   b. Tables - All monitoring analytical data obtained during at least the two previous semi-annual reporting periods shall be presented in tabular form, and shall be uploaded electronically onto the State's database (GeoTracker) within one month following the submittal of the semi-annual monitoring reports to the Regional Board. The tables shall include the following:

      i. Concentration Limit Table -- Each MonPt/COC pair's Water Standards concentration limit, together with a declaration of the type and (for interwell) the name of the well from which the data was drawn. Each datum shall include a date (when it was taken) and, if less than the PQL, include its MDL and PQL. For trace values, include a concentration estimate.

      ii. Data Analysis Method Table -- A table indicating those MonPt/COC pairs that use each listed data analysis method. For statistical methods, indicate the retesting approach (e.g., pass-1-of-2) and the parameter settings

used. For standardized (assigned) nonstatistical methods, merely name the method.

iii. Retesting Table -- A table showing each retest done that Monitoring Year for any non-COC test, UnPar test, Standard Status MonPar, or Tracking Status (concentration-versus-time plot) MonPar test for which a preliminary indication invoked the approved retesting approach.

c. Compliance record discussion - A comprehensive discussion of the compliance record, and of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the HSL's waste discharge requirements relating to water quality issues. This discussion shall evaluate whether the existing corrective action measures (CAMs) are bringing all release-affected MonPt/MonPar pairs back into compliance with their respective Water Standard concentration limit [see Title 27, §20415(h)], and shall include the concentration-versus-time plots for each such release-affected MonPt/MonPar pair. Pursuant to Title 27, §20080(a)(1), the Regional Board finds that an annual update frequency, for this CAMs-effectiveness report, will be more effective at noting changes than would be the case under the prescriptive semi-annual reporting frequency required for it at Title 27, §20415(h);

d. Summary of changes - A written summary of monitoring results and monitoring and control systems, indicating any changes made or observed since the previous annual report;

4. UnPar COC Report at least every five years - In the absence of a major change in the known releases, the Discharger shall monitor all UnPars (non-MonPar COCs for the HSL).

a. Reporting period for UnPars - The Discharger shall sample all monitoring points and background monitoring points for each monitored medium for all UnPars (non-MonPar COCs) every fifth year, beginning with the Fall of 2015. The first Reporting Period ends September 30, 2015, with subsequent UnPar COC monitoring to be carried out every fifth year thereafter, alternately in the Spring (Reporting Period ends March 31) and the Fall (Reporting Period ends September 30).

b. UnPar COC report - This report, which is due one month following the Monitoring Period, shall be combined either with the semi-annual monitoring report for the completion date or with the annual summary report for that monitoring year. The most recent COC report (then termed "COC report") was submitted in 2010. Future UnPar COC reports are due every 5 years (in 2015, 2020, 2025, etc.). The UnPar COC reports shall identify all non-MonPar COCs that need to become MonPars because they have exceeded their upper 85th percentile (of background data) both initially and in the mid-reporting-period retest sample (see Attachment C). Any non-MonPar COC

that fails this test at any Monitoring Point shall be reported as such in the monitoring report for that reporting period, including being noted in the summary for it, and becomes a MonPar at all monitoring points in that monitored medium as of the following reporting period.

5. Extracted and Treated Groundwater from the Pump and Treat System – The influent and effluent of the groundwater pump and treat system will be analyzed for VOCs and the results shall be reported semi-annually as shown in Table 1.

6. Landfill Gas or Gas Condensate Monitoring Report

   a. October gas condensate sampling results - The Discharger shall report to the Regional Board, no later than January 31 of each year, the analytical results of the gas condensate samples taken during the previous October. If sufficient gas condensate was not available to perform the necessary analyses, then analytical results for the landfill gas may be substituted for the gas condensate.

   b. April gas condensate retest results - If the annual gas condensate samples taken in October identify constituents that exceed their respective PQL and are not on the current MonPar list, the Discharger shall collect and analyze a landfill gas condensate sample in April. The retest sample(s) shall be analyzed only for the constituents detected in the October sampling event. During any year in which an April landfill gas condensate retest is carried out, the Discharger shall submit a report to the Regional Board no later than August 1 of that year. This report shall identify all VOC constituents that must be added to the HSL's monitoring parameters list as a result of having exceeded their respective PQL in both the previous calendar year's October sample and also in the April retest sample [as well as degradation by-products of confirmed constituents(s)], plus any additional Appendix II constituents identified as new COCs pursuant to Section B.8.b of the M&RP for which the Discharger is in the process of establishing a Concentration Limit (background data set). The report shall also include an updated monitoring parameter list.

7. Winterization plans and topographical mapping updates - By October 1 of each year, all drainage and erosion control system construction and maintenance activities shall be completed. Annually, by October 31, winterization plans and topographical mapping updates shall be submitted as follows:

   a. A summary of the containment structure, waste management unit, and drainage control system records for the monitoring period. The summary shall include a list of deficiencies identified and the dates and types of corrective measures taken to achieve compliance with the waste discharge requirements. If corrective measures for identified deficiencies could not be implemented by the end of the monitoring period, the Discharger shall provide

the reason for noncompliance and a time schedule for implementing the corrective measures.

b. For the previous 12 months, a summary of the adequacy and effectiveness of the drainage control system to collect and divert the calculated volume of precipitation and peak flows resulting from a 100-year, 24-hour storm.

c. A tabular summary of the new and existing drainage control structures, including the types and completion dates of maintenance activities performed for each of these structures; and

d. An 11"x17" (or better scale) facility site map indicating the location of the elements listed in C.6.c, above, and the flow direction of site drainage.

8. Reporting Schedule - The Discharger shall submit the reports/documents in accordance with the deadlines specified in Table 1.

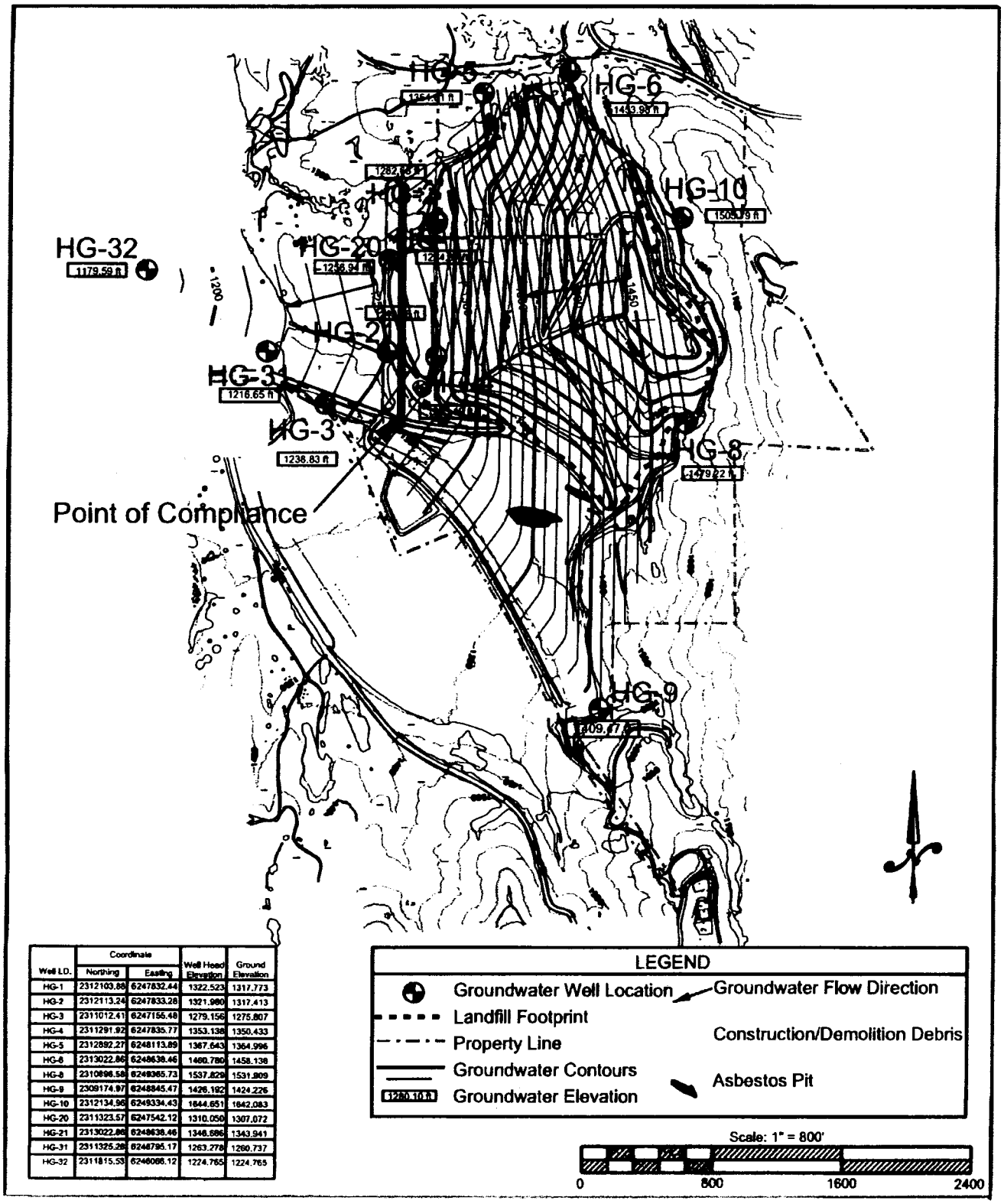
9. Uploading Laboratory Data —For each reporting period, the Discharger shall upload all monitoring data to the HSL's GeoTracker account in Electronic Deliverable Format (EDF).

10. Signature - All reports shall be signed by a responsible officer or a duly authorized representative of the Discharger and shall be submitted under penalty of perjury.

Tentative

Kurt V. Berchtold
Executive Officer

March 22, 2013



Well I.D.	Coordinate		Well Head Elevation	Ground Elevation
	Northing	Easting		
HG-1	2312103.88	6247832.44	1322.523	1317.773
HG-2	2312113.24	6247833.28	1321.980	1317.413
HG-3	2311012.41	6247156.48	1279.156	1275.807
HG-4	2311291.92	6247835.77	1353.138	1350.433
HG-5	2312892.27	6248113.89	1367.643	1364.996
HG-6	2313022.86	6248638.46	1460.780	1458.138
HG-8	2310898.58	6248365.73	1537.829	1531.909
HG-9	2309174.97	6248845.47	1426.192	1424.226
HG-10	2312134.96	6249334.43	1844.651	1842.083
HG-20	2311323.57	6247542.12	1310.050	1307.072
HG-21	2313022.86	6248638.46	1346.686	1343.941
HG-31	2311325.28	6248795.17	1263.278	1260.737
HG-32	2311815.53	6246066.12	1224.765	1224.765

ATTACHMENT B
POINT OF COMPLIANCE MAP

Attachment C

Highgrove Sanitary Landfill Monitoring Programs, Monitoring Parameters and Monitoring Frequency

Table 1 - Monitoring and Reporting Due Dates

Task Description	Monitoring Period	Report Due Date
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	April 1 - September 30	October 31 of each year
Semi-Annual General Site Monitoring	October 1 - March 31	April 30 of each year
	April 1 - September 30	October 31 of each year
Annual Summary	April 1 of previous year - March 31	April 30 of each year
UnPar COC Analysis	Every 5 years (alternating between Fall and Spring Reporting Periods)	April 30, 2010; October 31, 2015; April 30, 2020; October 31, 2025; etc.
Extracted and treated groundwater from the Pump and Treat System	October 1 - March 31 April 1 - September 30	April 30 of each year October 31 of each year
October Landfill Gas Condensate Testing Analysis	October 1 - October 31	April 30 of the following year
April Landfill Gas Condensate Retesting Analysis (When Required)	April 1 - April 30	August 1 of each year
Annual Drainage Control and Maintenance	By October 31 of each year	December 31 of each year
Aerial or Ground Survey	By October 15 of every fifth year	December 31 of every fifth year

Reports with the same submittal date may be consolidated into a single report.

Table 2 – Monitoring Programs, Parameters and Frequency

Type of Program	Monitoring Parameters	Monitoring Frequency
Corrective Action Water Quality Monitoring Program (CAP Wells)	Mpar COC List (Table 4)[1]	Semi-annually
	General Minerals and Unpar COC List (Table 5)[1]	Once every five years
Landfill Gas (LFG) Condensate Monitoring	General minerals (Table 3) and all Appendix II Constituents (Table 6), except Organochlorine Pesticides, Chlorinated Herbicides and Polychlorinated Biphenyls (PCBs)	Annually[2]
Extracted and treated groundwater	Mpar COC List (Table 3)	Semi-annually
Extracted Landfill Gas (only if LFG condensate is not monitored)	Select Appendix II Constituents (Table 7)	Annually
Aerial or Ground Survey	Not applicable	Once every five years
General Site Monitoring	Not Applicable	Varies (see Section B.2 of M&RP)

1. The COC lists shall be updated each year based on landfill gas condensate testing/retesting programs.
2. October landfill gas condensate testing with a confirmation retest in April of the following year.

TABLE 3

List of General Minerals

Parameter	EPA Method	Parameter	EPA Method
Total Hardness	130	Specific Conductance (Electrical Conductivity - EC)	120.1
Bicarbonate (HCO_3)	310.2	pH	150.1
Carbonate ($CaCO_3$)	310.2	Total Dissolved Solids	160.1
Total Alkalinity	310.1	Chemical Oxygen Demand	410
Total Cations	1	Phenols	420.1
Total Anions	1	Total Organic Carbon	415
Hydroxide (OH)	2	Total Organic Halogens	450.1
Chloride (CL)	325	Calcium (Ca)	200.7/215
Fluoride (F)	340	Magnesium (Mg)	200.7/242.1
Nitrate (NO_3)	353.2	Manganese (Mn)	200.7/243.1
Sulfate (SO_4)	375	Potassium (K)	200.7/258.1
Phosphate (PO_4)	365.2	Sodium (Na)	200.7/273.1
Total Phosphorus	365.1/365.2	Iron (Fe)	200.7/236.1
Boron (B)	212.3/200.7	Zinc (Zn)	200.7/289.1

Total cations and anions are determined by the summation of all cations and anions, respectively, in the sample analyzed.

The standard method, SM 2330B, in the "Standard Methods for the Examination of Water and Wastewater" for hydroxide ion analysis shall be used.

TABLE 4

Current MonPar Constituent List For the Highgrove Sanitary Landfill

General Chemistry Parameter
Chloride (Cl)
Dissolved Oxygen
Iron
LAB pH
Nitrate (NO3-N)
Potassium
Sulfate (SO4)
Total Dissolved Solids

Volatile Organic Compounds Parameter
1,1,1-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dichloroethane
1,4-Dichlorobenzene
Benzene
Chlorobenzene
Chloroethane
Chloroform
cis-1,2-Dichloroethene
Dichlorodifluoromethane
Isobutyl Alcohol
Methylene Chloride
Tetrachloroethene
Total Xylenes
o-Xylene
trans-1,2-Dichloroethene
Trichloroethene
Trichlorofluoromethane
Vinyl Chloride

Semi Volatile Organic Compounds Parameter
Bis(2-ethylhexyl) Phthalate
Diethyl Phthalate

Tentative

TABLE 5
Current UnPar Constituent List For the Highgrove Sanitary Landfill

General Chemistry Parameters	Volatile Organic Compounds Parameter
Antimony (Sb), total	1,1,1-Trichloroethane
Arsenic (As), total	1,1-Dichloroethane
Barium (Ba), total	1,1-Dichloroethene
Beryllium (Be), total	1,2-Dichlorobenzene
Bicarbonate(HCO3)	1,2-Dichloroethane
Boron (B)	1,2-Dichloropropane
Cadmium (Cd), total	1,4-Dichlorobenzene
Calcium (Ca)	2-Butanone (MEK)
Chemical Oxygen Demand, COD	2-Hexanone
Chloride (Cl)	Acetone
Chromium (Cr), total	Benzene
Chromium, hexavalent	Bromodichloromethane
Cobalt (Co), total	Chlorobenzene
Copper (Cu), total	Chloroethane
Cyanide (CN)	Chloroform
Dissolved Oxygen	cis-1,2-Dichloroethene
Fluoride (F)	Dichlorodifluoromethane
Iron (Fe)	Ethylbenzene
LAB pH	Isobutyl Alcohol
Lead (Pb), total	Methyl isobutyl ketone (MIBK)
Magnesium (Mg)	Methylene Chloride
Manganese (Mn)	Naphthalene
Mercury (Hg), total	Styrene
Nickel (Ni), total	Tetrachloroethene
Nitrate (NO3-N)	Total Xylenes
Phosphate (PO4)	m,p-Xylenes
Potassium (K)	o-Xylene
Selenium (Se), total	Toluene
Silver (Ag), total	Trans-1,2-Dichloroethene
Sodium (Na)	Trichloroethene
Specific Conductance	Trichlorofluoromethane
Sulfate (SO4)	Vinyl Chloride
Tin (Sn), total	
Total Alkalinity	
Total Anions	
Total Cations	
Total Dissolved Solids	

TABLE 5 – Continued

General Chemistry Parameter - Continued	Semi Volatile Organic Compounds Parameter
Total Hardness	Acetophenone
Total Organic Carbon (TOC)	Benzyl Alcohol
Total Organic Halogens, TOX	Bis(2-ethylhexyl) Phthalate
Total Phosphorus (P)	Diethyl Phthalate
Turbidity	Dimethyl Phthalate
Vanadium (V), total	Di-n-butyl Phthalate
Zinc (Zn), total	Isophorone
	m-Cresol
	O-Cresol
	p-Cresol
	Phenol

Tentative

TABLE 6
List of Appendix II Constituents

Acenaphthene
Acenaphthylene
Acetone
Acetonitrile; Methyl cyanide
Acetophenone
2-Acetylaminofluorene; 2-AAF
Acrolein
Acrylonitrile
Aldrin
Allyl chloride
4-Aminobiphenyl
Anthracene
Antimony (total)
Arsenic (total)
Barium (total)
Benzene
Benzo[a]anthracene; Benzanthracene
Benzo[b] fluoranthene
Benzo[k] fluoranthene
Benzo[ghi] perylene
Benzo[a] pyrene
Benzyl alcohol
Beryllium (total)
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC; Lindane
Bis(2-chloroethoxy) methane
Bis(2-chloroethyl) ether; Dichloroethyl ether
Bis(2-chloro-1-methylethyl) ether; 2,2-Dichlorodiisopropyl ether; DCIP
Bis(2-ethylhexyl) phthalate
Bromochloromethane; Chlorobromomethane
Bromodichloromethane; Dibromochloromethane
Bromoform; Tribromomethane
4-Bromophenyl phenyl ether
Butyl benzyl phthalate; Benzyl butyl phthalate
Cadmium (total)
Carbon disufide
Carbon tetrachloride
Chlordane
p-Chloroaniline
Chlorobenzene
Chlorobenzilate
p-Chloro-m-cresol; 4-Chloro-3-methylphenol
Chloroethane; Ethyl chloride
Chloroform; Trichloromethane
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chloroprene
Chromium (total)
Chrysene
Cobalt (total)
Copper (total)
m-Cresol; 3-methylphenol
o-Cresol; 2-methylphenol
p-Cresol; 4-methylphenol
Cyanide
2,4-D; 2,4-Dichlorophenoxyacetic acid
4,4-DDD
4,4-DDE
4,4-DDT
Diallate
Dibenz [a,h] anthracene
Dibenzofuran
Dibromochloromethane; Chlorodibromomethane
1,2-Dibromo-3-chloropropane; DBCP
1,2-Dibromoethane; Ethylene dibromide; EDB
Di-n-butyl phthalate
o-Dichlorobenzene; 1,2-Dichlorobenzene
m-Dichlorobenzene; 1,3-Dichlorobenzene
p-Dichlorobenzene; 1,4-Dichlorobenzene
3,3-Dichlorobenzidine
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane; CFC 12
1,1-Dichloroethane; Ethyldidene chloride
1,2-Dichloroethane; Ethylene dichloride
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene
2,4-Dichlorophenol
2,6-Dichlorophenol
1,2-Dichloropropane; Propylene dichloride
1,3-Dichloropropane; Trimethylene dichloride
2,2-Dichloropropane; Isopropylidene chloride
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Dieldrin
Diethyl phthalate
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin
Dimethoate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3-Dimethylbenzidine
2,4-Dimethylphenol; m-Xylenol
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol
Di-n-octyl phthalate
Diphenylamine
Disulfoton
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethylbenzene
Ethyl methacrylate
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
2-Hexanone; Methyl butyl ketone
Indeno (1,2,3-cd) pyrene
Isobutyl alcohol
Isodrin

TABLE 6 (continued)
List of Appendix II Constituents

Isophorone
Isosafrole
Kepone
Lead (total)
Mercury (total)
Methacrylonitrile
Methapyrilene
Methoxychlor
Methyl bromide; Bromomethane
Methyl chloride; Chloromethane
3-Methylcholanthrene
Methyl ethyl ketone; MEK; 2-Butanone
Methyl iodide; Iodomethane
Methyl methacrylate
Methyl methanesulfonate
2-Methylnaphthalene
Methyl parathion; Parathion methyl
4-Methyl-2-pentanone; Methyl isobutyl ketone
Methylene bromide; Dibromomethane
Methylene chloride; Dichloromethane
Naphthalene
1,4-Naphthoquinone
1-Napthylamine
2-Napthylamine
Nickel (total)
o-Nitroaniline; 2-Nitroaniline
m-Nitroaniline; 3-Nitroaniline
p-Nitroaniline; 4-Nitroaniline
Nitrobenzene
o-Nitrophenol; 2-Nitrophenol
p-Nitrophenol; 4-Nitrophenol
N-Nitrosodi-n-butylamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine;
Di-n-propylnitrosamine
N-NitrosomethylethylamineN-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Parathion
Pentachlorobenzene
Pentachloronitrobenzene
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Phorate
Polychlorinated biphenyls; PCBS; Aroclors
Pronamide
Propionitrile; Ethyl cyanide
Pyrene
Safrole
Selenium (total)
Silver (total)
Silvex; 2,4,5-TP
Styrene
Sulfide
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid
1,2,4,5-Tetrachlorobenzene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
2,3,4,6-Tetrachlorophenol
Thallium (total)
Tin (total)
Toluene
o-Toluidine
Toxaphene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane; Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene; Trichloroethene
Trichlorofluoromethane; CFC-1 I
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
1,2,3-Trichloropropane
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene
Vanadium (total)
Vinyl acetate
Vinyl chloride; Chloroethene
Xylenes (total)
Zinc (total)

The concentration limits for Appendix II Constituents, that are not current MonPars, are the laboratory practical quantitation limits.

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Table 7 - Landfill Gas Parameters

Volatile Organic Compounds

1,1,1,2-Tetrachloroethane	Chlorobenzene
1,1,1-Trichloroethane	Chloroethane
1,1,2,2-Tetrachloroethane	Chloroform
1,1,2-Trichloroethane	Chloromethane
1,1-Dichloroethane	cis-1,2-Dichloroethene
1,1-Dichloroethene	cis-1,3-Dichloropropene
1,1-Dichloropropene	Dibromochloromethane
1,2,3-Trichloropropane	Dibromomethane
1,2,4-Trichlorobenzene	Dichlorodifluoromethane
1,2-Dichlorobenzene	Ethylbenzene
1,2-Dichloroethane	Methyl isobutyl ketone (MIBK)
1,2-Dichloropropane	Methyl Methacrylate
1,3-Dichlorobenzene	Methylene Chloride
1,3-Dichloropropane	Naphthalene
1,4-Dichlorobenzene	Styrene
2,2-Dichloropropane	Tetrachloroethene
2-Butanone (MEK)	Toluene
2-Hexanone	Total Xylenes
Acetone	m-Xylene
Acrolein	o-Xylene
Acrylonitrile	p-Xylene
Allyl Chloride	trans-1,2-Dichloroethene
Benzene	trans-1,3-Dichloropropene
Bromodichloromethane	Trichloroethene
Bromoform	Trichlorofluoromethane
Bromomethane	Vinyl Acetate
Carbon Disulfide	Vinyl Chloride
Carbon Tetrachloride	

The VOCs listed above are a subset of the Appendix II Constituents that can be analyzed by common commercial laboratories by test method EPA TO-15.

ATTACHMENT D: NONSTATISTICAL TEST METHODS
Definitions of Terms

"Constituents of Concern (COCs)" means those waste constituents that could be released from the landfill. For any given medium, each such constituent is either: a Monitoring Parameter (MonPar) subject to compliance testing each Reporting Period, due to being a good indicator or, in the event of a release, due to having been detected and verified in groundwater as having exceeded its respective background data set's upper 85th percentile concentration; an UnPar (includes all constituents of concern that are not MonPars for that medium);

"Standard Status" means that the given Monitoring Parameter, at a given Monitoring Point (i.e., a MonPt/MonPar pair, for tracking/administrative purposes) has not shown as verified indication of a release yet, so, its purpose, in the monitoring program, is to detect the arrival of the release. This includes MonPt/MonPar pairs, during an evaluation monitoring or corrective action program, that have not yet shown a verified release indication. This also includes MonPars that had historical verified detections but are not currently classified in Tracking Status;

"DMP, EMP, AMP, CAP" mean the detection monitoring program, evaluation monitoring program, assessment monitoring program, and corrective action program;

"InterPoint" means that the Concentration Limit (background data set against which each new datum is tested) comes from the background (upgradient or sidegradient) Monitoring Point;

"IntraPoint" means that the Concentration Limit consists of historical data from the Monitoring Point being tested. This background data must be validated (before use) not to include any indication of a release for any constituent to which the nonstatistical data analysis method is applied;

"Measurably significant increase" has the same meaning as the federal term, "statistically significant increase," but includes indications by any approved nonstatistical test;

"MonPar" or "MonPar COCs" means one the landfill's set of Constituents of Concern that functions as a Monitoring Parameter, for any given monitored medium (i.e., that subset of the Constituents of Concern that are subject to compliance data analysis every Reporting Period at each MonPt in that medium). Each monitored medium will have its own MonPars;

"Tracking Status" means that the given Monitoring Parameter, at a given Monitoring Point (i.e., a MonPt/MonPar pair, for tracking/administrative purposes) has shown a recent verified indication of a release; therefore its purpose, in the monitoring program, is to track the released constituent's concentration there via a concentration-versus-time plot upon which the Water Standard concentration limit (i.e. background value, laboratory practical quantitation limit or health risk based value serves as the cleanup goal). <u>This plotting serves as that MonPt/MonPar pair's nonstatistical data analysis method</u>. The discharger notifies Regional Board staff as soon as the plot has been at-or-below this plotted horizontal cleanup goal line for two reporting periods in a row and the MonPar shall return to Standard Status. For a landfill in corrective action, the discharger includes these plots of Tracking Status MonPt/MonPar pairs in each Corrective Action Measures Effectiveness Report (CAMs Report);

"UnPar" or "UnPar COC" means one of the landfill's set of Constituents of Concern that functions as an Uninvolved Parameter for any given monitored medium. For any given monitored medium (groundwater, surface, water, or the unsaturated zone), they are that subset of the Constituents of Concern that are not Monitoring Parameters (MonPars). Each monitored medium will have its own UnPars.

CONCENTRATION-VERSUS-TIME PLOTTING METHOD

(See definition for "Tracking Status.")

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NONSTATISTICAL DATA ANALYSIS METHODS (NSDAM)

A. Non-Statistical Method For Standard Status COCs Seldom Found In Background

For any given Monitoring Point (MonPt) subject to compliance testing during each Reporting Period, regardless of the monitoring program (DMP, AMP/EMP, or CAP), the Discharger shall use this data analysis method, jointly, for all Standard Status Monitoring Parameters (MonPars) on that MonPt's "scope list" (see §A.1. for the initial test scope list and §B.1 for the modified scope list use during the single retest).

1. **Scope List** — For the initial test (on the sample taken from that compliance-testing MonPt at the start of that Reporting Period), create a current "scope list" that includes all of that MonPt's Standard Status MonPars that exceed their "reference MDL" (i.e., the highest MDL associated with that constituent's background data set) in less than 10% of the MonPar's background data set at that MonPt. For each such qualifying constituent, in addition to its reference MDL, note its "reference PQL" as the highest PQL value associated with the constituent's background data set at that MonPt.

2. **Two Triggers** — From the scope list made under A.1., above, for an initial test [or, for a retest, using the modified scope list created under B.2, below], identify each scope list MonPar in the **current** sample from that MonPt that exceeds either its respective MDL or its respective PQL. The Discharger shall conclude that these exceeding constituents provide a preliminary indication [or, for a retest, provide a measurably significant indication] of a release indication, at that MonPt, if ***either:***

   - two or more of the Standard Status MonPars on the MonPt's scope list exceed their reference MDL; **or**
   - at least one of the Standard Status MonPars on the MonPt's scope list equals or exceeds its reference PQL.

B. Single Discrete Retest (A "Pass-1-of-2" Plan):

1. **Notification and Retest Sample Acquisition** — In the event that the Discharger concludes (pursuant to A.2., above) that the initial sample, taken at the very start of the reporting period, indicates that there is a preliminary indication for one-or-more MonPars on the scope list for that MonPt, then the discharger shall immediately notify Regional Board staff by phone or e-mail and, at mid-reporting-period, shall collect a new independent retest sample from the indicating MonPt.

2. **Apply Test To Modified Scope List** — For the MonPt retest sample, the Discharger shall include, from the laboratory retest analysis results, only the determinations for those constituents indicated in that MonPt's original test, under A.2., and these indicated constituents shall comprise the MonPt's "modified scope list," for use in the retest. As soon as the retest data are available, the discharger shall apply the same test [under A.2., above, but using this modified scope list] to analyze the retest sample's data at that compliance MonPt.

3. **Conclusions** — If the retest sample trips neither one of the triggers under §A(2), then the Discharger shall conclude that the original determination was in error and shall report this to the Regional Board by phone or e-mail and include it in the Monitoring Report for that Reporting Period.

   If, instead, the retest sample trips either (or both) of the triggers under A.2., then the Discharger shall conclude that there is a measurably significant increase at that MonPt for the constituent(s) indicated in the validating retest sample, shall report this to the Regional Board immediately (by phone or e-mail), and shall include this information in the Monitoring Report for that reporting period. Furthermore, given a confirming retest, beginning with the very next Reporting Period, the Discharger shall monitor the indicated-and-verified constituent(s) in Tracking Status (instead of Detection Status) at that MonPt and shall no longer include those constituent(s) in the scope list created (under §A.1.) for that MonPt.

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UPPER 85th PERCENTILE NONSTATISTICAL METHOD FOR UNPAR TESTING

Concentration Limit (retest-triggering concentration) — The UnPars, or UnPar COCs, are those Constituents of Concern (COCs) that are not Monitoring Parameters. Under this Order, they are tested every five years. For any given UnPar at a given Monitoring Point (i.e., for any given MonPt/UnPar pair), its retest-triggering concentration shall be the upper 85th percentile value of its background data set. Nevertheless, for a constituent whose upper 85th percentile value lies below its then-current Practical Quantitation Limit (PQL), its retest-triggering concentration is the highest PQL associated with that pair's background data set.

Test & Pass-1-of-2 Retest — If, during the five-yearly UnPar testing, an UnPar exceeds its respective retest-triggering concentration in its initial sample (taken at the start of the reporting period), the Discharger shall take one retest sample (for the indicating MonPt/UnPar pair) at mid-period (about90 days later).

If that single retest sample's concentration does not exceed that UnPar's retest-triggering concentration, then the test is concluded without the UnPar's changing to a MonPar and the Discharger includes the test information and conclusion in the Monitoring Report for that reporting period.

If, instead, the single retest sample's concentration for that UnPar exceeds that MonPt/UnPar pair's retest-triggering concentration (like the initial sample did), then that

constituent becomes a MonPar COC at all MonPts in that monitored medium (groundwater, surface water, or the unsaturated zone), beginning with the next Reporting Period, and the Discharger shall report this change to Regional Water Board staff immediately, declare it clearly in the monitoring report (including its summary page) for that Reporting Period.

This approach is imposed as an improvement over the Title 27 prescriptive standards of §20415(e)(8)(E)3., §20420(g) and §20425(e)(4), pursuant to §20080(a)(1) and the leading paragraphs of §20415(e)(8 & 9).

Tentative

List of Acronyms

CAMs —Corrective Action Measures

CAP—corrective action program

CAS—corrective action system

CFR—Code of Federal Regulations

COC—constituents of concern

CQA—Construction Quality Assurance

CQC—Construction Quality Control

CWA—Clean Water Act

CWC—California Water Code

DCE—dichloroethene

DMP—Detection Monitoring Program

EDF—Electronic Deliverable Format

FCPMP—Final Closure and Post-Closure Maintenance Plan

HSL—Highgrove Class III Sanitary Landfill

LFG—landfill gas

MCL—maximum contaminant levels

MDL—method detection limit'

MonPar—Monitoring Parameter

MonPt—Monitoring Points

M&RP—Monitoring & Reporting Program

MSW—municipal solid wastes

PQL—Practical Quantification Limit

ROS—Record of Survey

TCE—trichloroethene

TDS—Total Dissolved Solids

UnPar—Uninvolved Parameter

USEPA—United States Environmental Protection Agency

VC—vinyl chloride

VOC—volatile organic compounds

Water Standards—Water Quality Protection Standards

WDR—Waste Discharge Requirements

Tentative

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

ORDER NO. R8-2013-0002

POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION WASTE DISCHARGE REQUIREMENTS FOR RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT

HIGHGROVE SANITARY LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
RIVERSIDE COUNTY

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Water Board), finds that:

1. The County of Riverside Waste Management Department (hereinafter Discharger) owns and operates the Highgrove Class III Sanitary Landfill (HSL). The HSL is located in a portion of Sections 10 and 15, T2S, R4W, SBB&M as shown on Attachment A, which is hereby made a part of this Order.

2. On February 23, 1979, the Regional Water Board adopted waste discharge requirements (WDRs), Order No. 79-35, for the discharge of municipal solid wastes (MSW) at the HSL. Order No. 79-35 contains discharge requirements, provisions, and monitoring and reporting requirements in accordance with Title 23, Division 3, Subchapter 15, of the California Code of Regulations (Title 23) for landfill design, operations, and monitoring.

3. Order No. 79-35 was subsequently amended by Orders No. 93-57 and 94-17, adopted on September 10, 1993 and March 11, 1994, respectively, to incorporate new federal regulations (Title 40, Code of Federal Regulations [40 CFR], Part 258, known as Subtitle D), and to prescribe uniform drainage and erosion control system requirements for MSW landfills in the Santa Ana Region.

4. On July 18, 1997, the State Water Resources Control Board (State Water Board) and the California Integrated Waste Management Board (now known as the Department of Resources Recycling and Recovery [CalRecycle]) enacted the Solid Waste Requirements, Title 27, Division 2, Subdivision 1, California Code of Regulations (Title 27) to replace the non-hazardous waste portions of Title 23, Division 3, Subchapter 15. The terms used in this Order, as included in Attachment C of this Order, are defined in Title 27, §20164.

5. On November 20, 1998, Orders No. 93-57 and 94-17 were rescinded and replaced by Order No. 98-99. Order No. 98-99 required MSW landfill owners in the Santa Ana Region to comply with Title 27 regulations and State Water Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*.

6. This Order updates and replaces Order No. 79-35 and those portions of Order No. 98-99 that apply to the HSL.

7. This Order is being adopted in order to establish a corrective action program (CAP) at the HSL and to prescribe post-closure maintenance to minimize adverse environmental impacts.

8. The HSL is located in northwestern Riverside County, two miles east of the unincorporated community of Highgrove, and approximately 4 miles northeast of downtown Riverside. The area surrounding the HSL is generally undeveloped. The total area of the HSL property is 178.6 acres, of which only 64.1 acres were utilized for the placement of waste.

9. The HSL is a closed, unlined Class III landfill that operated from 1947 to 1998. From approximately 1950 to 1960, the HSL was operated as a burn dump. The HSL ceased accepting refuse on July 10, 1998.

10. In 1971, approximately 43 artillery shells, reportedly containing no explosive or detonator fuse plugs, were disposed of at the HSL. This is the only known military waste accepted at the HSL.

11. Approximately 970 tons of asbestos wastes were received at the HSL from 1973 to late 1983. The Discharger ceased accepting asbestos waste at the HSL in 1984.

12. On May 26, 1998, the Regional Water Board, the Riverside County Environmental Health Department, and the County Department of Hazardous Materials initiated an investigation for suspected hazardous waste near the southwest edge of the HSL footprint. During the excavation, several empty asbestos bags mixed with construction demolition wastes and tires were encountered. The three agencies agreed that the asbestos bags should be left in place, and the excavated area was backfilled with clean soil and compacted.

13. A Record of Survey (ROS) of the HSL site was prepared in April 1994 by the Riverside County Surveyor's Office and is recorded in Book 99, Pages 29-35, Official Records of the County of Riverside. This ROS describes the entire property owned by the County at the time of the survey (1994), which encompassed a total of 294.4 acres. Since 1994, several property transactions have taken place. These transactions resulted in decreasing the size of the property owned by the County by 115.8 acres (from 294.4 acres to 178.6 acres).

14. In April 1993, the Discharger submitted a Final Closure and Post-Closure Maintenance Plan (FCPMP). The Plan included a final cover design, a Construction Quality Assurance/Construction Quality Control Plan for the cover design, a gas collection system, drainage control systems and a corrective action plan to address contaminants in the groundwater emanating from the landfill.

15. In December 1998, the Discharger amended the FCPMP to revise the cover design from prescriptive to an alternative monolithic, as described in Title 27, §20080, and submitted the revised FCPMP to the Regional Water Board in April 1999. On June 15, 1999, Regional Water Board staff approved the revised design which consists of a five-foot thick evapotranspiration system. Final grades at the HSL were constructed at a minimum of 3% to prevent ponding and erosion by surface runoff. The alternative final cover is designed to minimize surface water infiltration and thereby reduce landfill leachate.

16. Construction of the HSL's final closure cover began on September 18, 2000, and was completed on June 27, 2001. The cover was constructed in accordance with requirements contained in Title 27, and was approved by Regional Water Board staff on July 18, 2003.

17. The Discharger filed a deed notification with the County Recorder on March 17, 2003. The deed notification advises any potential purchaser of the property that:

    a. The parcel had been used as a MSW landfill;
    b. The land use options for the parcel are restricted in accordance with the uses set forth in the approved post-closure maintenance plan for the HSL; and
    c. The Discharger shall be responsible for carrying out corrective action measures and maintenance work at the HSL.

18. The HSL is underlain by granitic bedrock, the Bonsall Tonalite. The granitic rock forms the steep hill terrain surrounding the HSL to the north, east, and south, and generally slopes to the northwest. The stability of the granite varies, typically becoming more stable with depth. The upper 10 to 15 feet of the granite is decomposed, wherein the granite is fractured, deeply weathered, and unconsolidated. Geophysical survey data indicates that there are localized variations in the elevation of the decomposed granite-granite interface.

19. Geological mapping of the HSL area was conducted in 1978 by the University of California at Riverside. The mapping report confirmed the presence of fractures in the granitic bedrock. The fractures were reported to trend in a northwest-southeast direction, and are vertically oriented or steeply inclined to the southwest.

20. Groundwater flow occurs beneath the site in the alluvium, weathered bedrock,

and in bedrock fractures. Groundwater flow is to the west at an estimated hydraulic gradient ranging from 0.08 to 0.17. Groundwater flow direction generally follows surface topography. Depth to groundwater is approximately 70-100 feet. Surface water near the HSL is generally restricted to the drainage gullies along the hillsides and the surface water drainage conveyance system of the planned residential subdivision west of the HSL. Surface flows from the area are tributary to the Santa Ana River.

21. A revised Water Quality Control Plan (Basin Plan) became effective on January 24, 1995, and was subsequently amended a number of times. The Basin Plan specifies beneficial uses and water quality objectives for waters in the Santa Ana Region.

22. The groundwater beneath the HSL flows into, and a small portion of the HSL is located within, the Riverside Groundwater Management Zone, Riverside F, the beneficial uses of which include:
    a. Municipal and domestic supply,
    b. Agricultural supply,
    c. Industrial service supply, and
    d. Industrial process supply.

23. Surface drainage from the HSL is tributary to the Santa Ana River, Reach 4, the beneficial uses of which include:
    a. Groundwater recharge
    b. Contact and non-contact water recreation
    c. Warm freshwater habitat
    d. Wildlife habitat

24. Groundwater and landfill gas monitoring systems have been installed at the HSL. Groundwater monitoring is conducted by means of thirteen groundwater monitoring wells. Landfill gas monitoring is conducted by means of eight gas probes surrounding the HSL. On October 22, 2009, Regional Water Board staff approved a workplan for the installation of two off-site downgradient monitoring wells (sentry wells), HG-31 and HG-32, to replace abandoned wells HGMW-1, HGMW-2, and HGMW-3.

25. Volatile organic compounds (VOCs), such as cis-1,2-Dichloroethene (cis-1,2-DCE), Trichloroethene (TCE), 1,1-Dichloroethane, 1,2-Dichloreothane, and Vinyl Chloride (VC), have been detected at concentrations exceeding the State drinking water standards or maximum contaminant levels (MCLs). A groundwater modeling analysis indicated that the contaminant plume beneath the HSL has migrated to the adjoining property to the west. Because a release has been identified at the HSL, the HSL is currently in a CAP.

26. Groundwater impacts at the HSL are believed to have originated from two sources. The first source is landfill gas migrating into the groundwater through

the unsaturated zone, and second source is landfill leachate because the HSL does not have a liner and leachate collection system. To reduce the source of the contaminants from landfill gas and to prevent or reduce further impacts to groundwater, a landfill gas (LFG) collection system was installed in 1998. The landfill drainage system and the final cover are designed to minimize storm water infiltration thereby reducing leachate production.

27. On July 18, 2001, Regional Water Board staff approved the groundwater corrective action system (CAS) for the HSL. The CAS, which was implemented in late 2006, consists of the following:
    a. A series of groundwater extraction wells positioned at the western boundary of the HSL;
    b. A 10,000 gallon equalization storage tank where extracted groundwater is pumped;
    c. An air-stripping tower that removes VOCs from the extracted groundwater;
    d. A carbon absorption system that is used to treat the VOC exhaust from the air stripper; and
    e. A one-acre percolation pond, where treated groundwater is discharged.

28. A Construction Quality Assurance (CQA) Plan that provided specifications, including testing requirements, for the alternative cover design and a Construction Quality Control (CQC) Program that specified control measures during construction were implemented for installation of the alternative final closure cover. The CQA/CQC program identified and corrected any problems associated with the construction of the final cover. The final CQA/CQC report for the HSL was submitted to the Regional Water Board on May 13, 2003 and was approved on July 18, 2003.

29. This Order updates a WDR for an existing facility, and is therefore categorically exempt from the provisions of the California Environmental Quality Act (Public Resources Code, §1000 et seq) in accordance with Section 15301, Chapter 3, Title 14 of the California Code of Regulations. The Order does not permit an expansion of the existing footprint of the landfill or additional deposit of wastes to the landfill.

30. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe revised WDRs for the HSL.

31. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger, in order to meet the applicable provisions contained in the California Water Code (CWC), Title 27, the federal MSW landfill regulations of 40 CFR Part 258, and State Water Board Resolution No. 93-62, shall comply with the following:

A. DISCHARGE SPECIFICATIONS

1. GROUNDWATER

The approved CAS shall be fully implemented to remediate the release of constituents of concern (COCs) from the HSL in violation of the Water Quality Protection Standards (Water Standards), as defined in Title 27, § 20390, and specified in the Monitoring and Reporting Program. When requested by the Executive Officer, the Discharger shall evaluate the effectiveness of the CAS, and if necessary, expand the pump and treatment system, expand the gas extraction system, improve the cover, or propose alternative and/or additional corrective measures in order to meet the Water Standards. Corrective action measures taken may cease when the concentrations of constituents of concern (COCs) have been reduced to acceptable levels consistent with the Water Standards concentration limits for a minimum of three consecutive years throughout the entire zone affected by the release. Within 60 days, or other appropriate time period, following completion of the CAP, the Discharger shall submit a plan identifying the means by which the Discharger will meet the federal requirements of 40 CFR §258.55(e) and, thereby, be able to return to a federal Detection Monitoring Program (DMP).

2. SURFACE WATER

Discharges from the HSL shall neither cause nor contribute to any surface water contamination, pollution, or nuisance, including, but not limited to:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;
b. Increases in bottom deposits or aquatic growth;
c. An adverse change in temperature, turbidity, or apparent color change beyond natural background levels and occurrences;
d. The creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin; and
e. The introduction or increase in the concentration of toxic or other substances resulting in unreasonable impairment of beneficial uses of the waters of the State.

3. UNSATURATED ZONE

Discharges from the HSL shall not cause any increase in the concentration of COCs in soil-pore gas, soil-pore liquid, soil, or other geologic materials beneath or outside of HSL if such waste constituents could migrate to the waters of the State and cause a condition of contamination, pollution, or nuisance.

4. CONSTITUENTS OF CONCERN

The discharge shall not cause the concentration of any COC or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point assigned to Detection Monitoring pursuant to the Monitoring and reporting Program (M&RP).

5. LIQUIDS USAGE

The discharge of liquids, including groundwater, leachate or landfill gas condensate, or their use for dust control or irrigation, is prohibited. The discharge of the treated groundwater will be regulated by a separate Order issued by the Regional Water Board.

B. PROVISIONS

1. The Discharger shall comply with all discharge prohibitions, specifications, provisions, and monitoring and reporting requirements of this Order and the Monitoring and Report Program (M&RP), R8-2013-0002, immediately upon its adoption.

2. The HSL has been officially closed in accordance with the California Code of Regulations, Title 27. Therefore, the disposal of any additional waste at the HSL is prohibited.

3. Maintenance of the HSL shall not cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the CWA.

4. The Discharger shall remove and properly dispose of any wastes that are placed at the HSL in violation of these requirements, and relocate that waste to an approved waste disposal facility.

5. The Discharger shall establish and maintain monuments in California coordinates (or equivalent) to define the boundary of the landfill footprint. The control benchmarks shall be certified by a licensed surveyor or a professional civil engineer authorized to practice in California.

6. The Discharger shall notify the Regional Water Board within 24 hours of any slope failure of slopes constructed to maintain compliance with the requirements of this Order. A written notification shall be submitted to the Executive Officer within five days. Any failure that threatens the integrity of containment features at the HSL shall be promptly remediated after approval of a remediation workplan and schedule by the Executive Officer of the Regional Board.

7. At any time, the Discharger may file a written request, including appropriate supporting documents, with the Executive Officer, proposing modifications to the M&RP. The Discharger shall implement any monitoring changes in the revised M&RP approved by the Executive Officer upon receipt of a signed copy of the revised M&RP.

8. The Discharger shall install any additional groundwater, soil pore liquid, soil pore gas, or leachate monitoring devices determined by the Executive Officer to be necessary to comply with the M&RP.

9. The Discharger shall continue to employ the existing landfill gas extraction and treatment system and other corrective measures pursuant to Title 27 §20430 during the confirmation monitoring for the three consecutive years as discussed under Section A.1, above; the landfill gas extraction system shall be continued during the detection monitoring program following a successful confirmation monitoring period.

10. Order No. 79-35 is hereby rescinded. This order supersedes all portions of Order No. 98-99 that are specific to the HSL; therefore, Order No. 98-99 is no longer applicable to the HSL.

C. CONTINGENCY RESPONSES

1. Leachate seep – The Discharger shall immediately report by telephone or email the discovery of any seepage from, or soil staining at, the HSL. If feasible, a sample of the leachate shall be collected and analyzed. In response to such seepage, the Discharger shall submit a corrective action report to the Regional Water Board for approval by the Executive Officer within seven days, containing at least the following information:
   a. Map – A map showing the location(s) of seepage;
   b. Flow rate – An estimate of the flow rate or volume;
   c. Description – A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
   d. Corrective measures - Measures proposed to address any seep(s).

2. Change in known release beyond facility boundary – Any time the Discharger, or the Executive Officer, concludes that the known release from the HSL 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).
   a. Updated notice – Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by the change in the known release, within 14 days of concluding

there has been any material change in the nature or extent of the known release.

b. Submittal – Each time the Discharger sends a notification to the Affected Persons, the Discharger shall, within seven days of sending such notification, provide the Regional Board with both a copy of the notification and a current mailing list of all Affected Persons. A copy of the notification and the list of Affected Persons shall also be included in the Facility Operating Record.

D. DRAINAGE AND EROSION CONTROL

1. The Discharger shall maintain the HSL in a manner that prevents, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, and washout that could occur as a result of precipitation from a 100-year, 24-hour storm. This shall be accomplished by, at a minimum, the following:
   a. Top deck surfaces shall be constructed to achieve a minimum of one percent slope, including structures that will direct water to downdrains;
   b. Downdrains and other necessary drainage structures must be constructed for all sideslopes; and
   c. All components of the facility drainage system must be designed and constructed to withstand site-specific maximum intensity precipitation (peak flow from a 100-year, 24-hour storm).

2. The Discharger shall protect and maintain the containment structures to ensure their effectiveness and to prevent commingling of leachate and gas condensate with surface run-on and runoff.

3. The Discharger shall design, construct, and maintain:
   a. A run-on drainage control system to prevent flow from off-site sources onto the disposal areas of the HSL, and to collect and divert the peak flow calculated volume from off-site sources that result from a 100-year, 24-hour storm;
   b. A runoff drainage control system to collect and divert both the calculated volume of precipitation and the peak flow from on-site surface runoff that results from a 100-year, 24-hour storm; and
   c. Drainage control structures to divert natural seepage from native ground and to prevent such seepage from entering the waste disposal area.

4. All drainage structures shall be protected and maintained to assure their effectiveness.

5. Annually, by October 1, all drainage control system construction and maintenance activities shall be completed.

6. At least 30 days prior to the construction of any new elements of the drainage control system, the Discharger shall submit a workplan outlining all design parameters and calculations, construction details, and a construction quality assurance plan for approval by the Executive Officer.

7. The Discharger shall submit as-built drawings within 4 weeks of completing construction of any new elements of the drainage control system at the site.

8. All design plans, construction plans, and operation and maintenance plans shall be prepared by, or prepared under the direct supervision of, a registered civil engineer or a certified engineering geologist.

9. The Discharger shall notify the Executive Officer by telephone, (951-782-4130), or e-mail within 24 hours of determination of a failure of facilities necessary to maintain compliance with the requirements in this order. Within 5 days, the notification shall be submitted in writing to the Regional Board.

10. The Discharger shall maintain a copy of this Order at the Discharger's headquarters so it is available for review at all times.

11. The Discharger shall permit Regional Board staff to:
    a. Enter upon the HSL property;
    b. To copy any records required to be kept under the terms and conditions of this Order;
    c. To photograph or videotape any structures, facilities, activities, or other phenomena that could result in adverse impacts to water quality and that are pertinent to compliance with this Order; and
    d. To sample any discharges from the HSL.

12. The Discharger shall notify the Regional Board in writing of any proposed change in ownership prior to the effective date of the change in ownership.

E. REQUIRED REPORTS AND NOTICES

1. Applications, reports or information submitted to the Regional Board shall be signed and certified in accordance with 40CFR §122.22.

2. The Discharger shall furnish, within 90 days of notification, unless the Executive Officer specifies an alternative date, any information the Executive Officer deems necessary in order to determine whether cause exists for modifying, reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Board, upon request, copies of records that this Order requires the Discharger to maintain.

3. The Discharger shall provide advance notice to the Regional Board of any planned changes or activities at the HSL that may result in noncompliance with this Order.

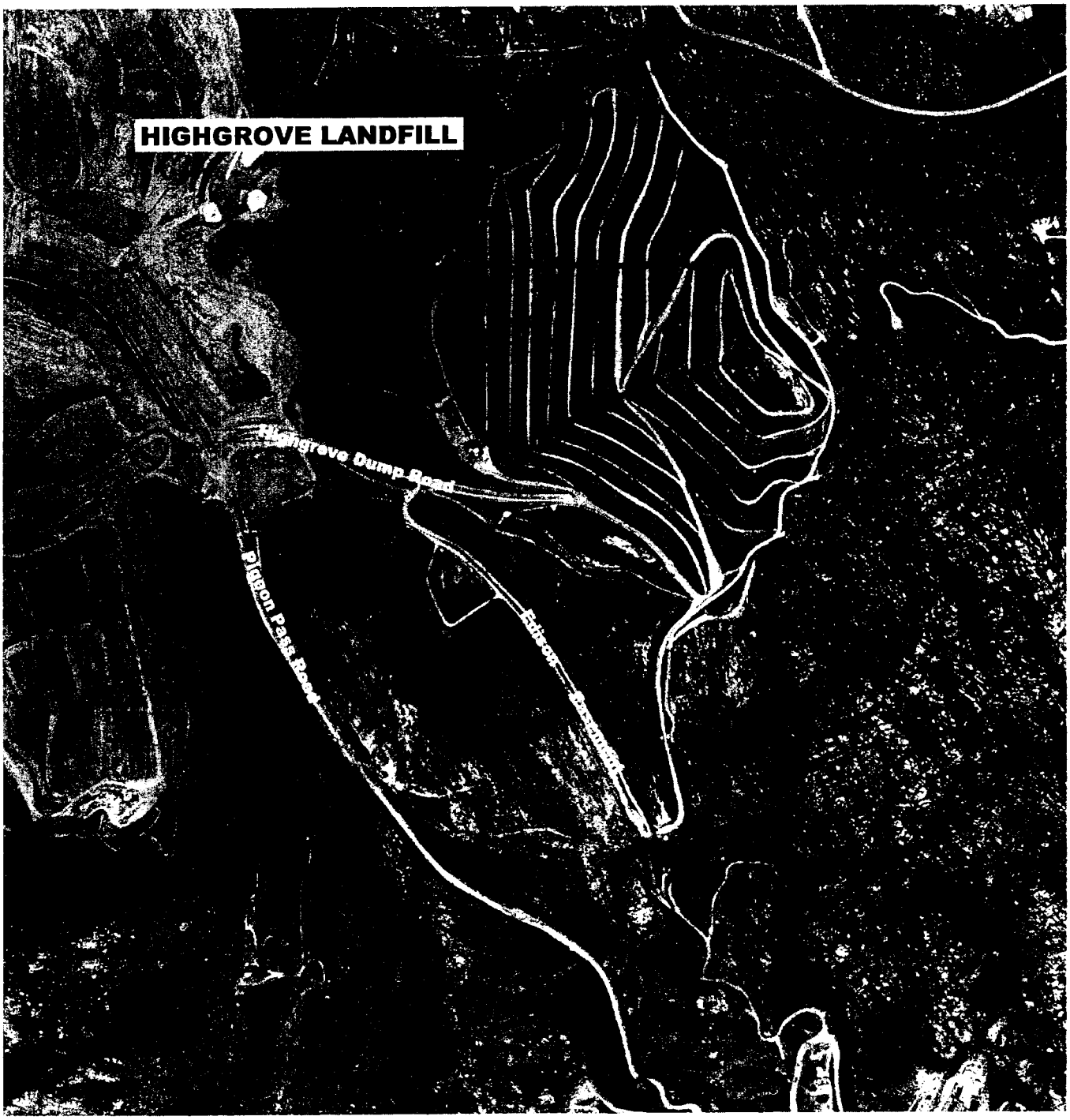
F. FINANCIAL ASSURANCE PLANS

The Discharger shall maintain assurances of financial responsibility for:

a. Post-Closure maintenance activities pursuant to Title 27, §22212; and
b. Corrective action activities pursuant to Title 27, §22222.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on March 22, 2013.

Kurt V. Berchtold
Executive Officer

Tentative

ATTACHMENT A
HIGHGROVE LANDFILL