



California Regional Water Quality Control Board

Los Angeles Region



Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

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Arnold Schwarzenegger
Governor

July 23, 2009

David A. Pelser
City of Whittier
13230 Penn Street
Whittier, CA 90602-1772

REGIONAL BOARD ORDER NO. R4-2006-0080 GROUNDWATER MONITORING WORKPLAN – SAVAGE CANYON LANDFILL, WHITTIER, CA (FILE NO. 63-082)

Dear Mr. Pelser:

On October 24, 2006, the Los Angeles Regional Water Quality Control Board (Regional Board) adopted Order No. R4-2006-0080, which revised waste discharge requirements (WDRs) for the Savage Canyon Landfill (Landfill), which is owned and operated by the City of Whittier (City). The principal reason for revising the WDRs was to accommodate revisions to the monitoring and reporting program, including an updated groundwater monitoring network.

On November 22, 2006, the City petitioned Order No. R4-2006-0080 to the State Water Resources Control Board (State Board) alleging “*There was a lack of substantial evidence in the record, and a lack of findings to support the Regional Board’s determination to require downgradient groundwater monitoring.*” On March 22, 2007, the State Board denied the petition. In response, the City submitted “Monitoring Workplan for Savage Canyon” on March 29, 2007. However, rather than an updated groundwater monitoring network, the City proposed an infiltration mass balance evaluation, quarterly leachate comparative analysis, and monthly inspection for leachate seeps at the Landfill toe and slopes, which could come in contact with surface water runoff. On June 11, 2007, Regional Board staff deemed the workplan inadequate. Regional Board staff directed the City to submit a revised workplan by July 12, 2007. Subsequently, with Regional Board staff concurrence, the City undertook a renewed assessment of the Landfill hydrogeology to explore options for alternate groundwater monitoring location(s). On December 17, 2008, the City submitted an alternative monitoring program proposing to screen for soil gas in existing landfill gas monitoring probes as a surrogate to detection groundwater monitoring downgradient of the Landfill. On January 12, 2009, the Workplan was conditionally approved provided the following items were addressed:

- Considers results of monthly soil-gas monitoring results from all available probes to target appropriate probes for sampling;

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Mr. David Pelsler
City of Whittier

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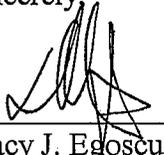
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- Documents the anthropogenic volatile organic compounds (VOCs) for which partial pressure gas constants are known and can be utilized for the proposed alternative monitoring methodology;
- Develops screening limits for all appropriate anthropogenic VOCs in soil gas samples based on the Henry's Law methodology that could result in an exceedance of the water quality protection standard (i.e., the method detection limit) for each VOC compound.
- Defines verification and/or response procedures in case of an exceedance of established soil gas screening limits.

Reference is made to your submittal, dated May 18, 2009, of a refined workplan for an alternative monitoring program proposing to screen for soil gas in existing landfill gas monitoring probes as a surrogate to detection groundwater monitoring downgradient of the Landfill. The workplan is herein approved. Attached is a revised monitoring and reporting program for the Landfill that incorporates requirements for the alternative monitoring program.

If you have any questions please contact Enrique Casas at (213) 620-2299 or Rodney Nelson at (213) 620-6119.

Sincerely,



Chief Deputy E.O.
TE

Tracy J. Egoscue
Executive Officer

cc: Ken Murray, Los Angeles County Department of Health Services
Tom Vercoutere, Golder Associates

California Environmental Protection Agency



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**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

MONITORING AND REPORTING PROGRAM NO. CI-4469

FOR

**CITY OF WHITTIER
(SAVAGE CANYON LANDFILL)**

(FILE NO. 63-082)

1. Responsibilities of the City of Whittier (Discharger) are specified in section 13225(a), 13267(b) and 13387(b) of the California Water Code, and the State Water Resources Control Board's Resolution No. 93-62. This self-monitoring program is issued pursuant to California Regional Water Quality Control Board, Los Angeles Region (Regional Board) Order No. R4-2006-0080. The principal purposes of a self-monitoring program by a waste discharger are:
 - a. To document compliance with discharge requirements and prohibitions established by the Regional Board;
 - b. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge; and
 - c. To prepare water quality analyses;
2. The Discharger shall implement this monitoring and reporting program (M&RP), as described in section F (Requirements for Groundwater Monitoring) of Order No. R4-2006-0080. The Discharger shall implement this M&RP during the first monitoring period immediately following adoption of this Order.

I. REQUIRED MONITORING AND INSPECTIONS

The Discharger shall conduct the following monitoring program and inspections at the Landfill. Unless otherwise indicated, all monitoring data and inspection results shall be reported to the Regional Board as outlined in the Required Reports and Contingency Response section of this M&RP.

1. For the purposes of this monitoring program the terms "monitoring well", "extraction well", "observation well", "piezometer", and "sump" are synonymous.
2. Existing monitoring points at the Landfill includes three groundwater monitoring wells (MW-A, MW-B and MW-C), and existing soil-pore gas probes in the southern (downgradient) portion of the Landfill (P-1, P-3, P-4, P-5A, P-6, P-7, P-8, P-9A, P-10, P-11, P-12, P-13, P-14A, P-15, P-23, P-24, P-25A, P-26, P-27, P-

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28, P-29 and P-30) each equipped with multilevel probes (Figure 1, attached). Existing well MW-B shall be used in conjunction with wells MW-A and MW-C for the determination of groundwater flow rate / direction only.

3. For groundwater in the uppermost aquifer the point of compliance monitoring wells shall be MW-A, MW-C, and existing soil-pore gas probes in the southern (downgradient) portion of the Landfill (P-1, P-3, P-4, P-5A, P-6, P-7, P-8, P-9A, P-10, P-11, P-12, P-13, P-14A, P-15, P-23, P-24, P-25A, P-26, P-27, P-28, P-29 and P-30).
4. For groundwater monitoring wells where a landfill effect has not been detected, the background monitoring point shall be that same well in order to provide for an intrawell statistical analysis¹. For any monitoring wells where a landfill effect has been detected the Discharger shall identify an appropriate background monitoring well within 90 days after the adoption of Order No. R4-2006-0080.
5. The Discharger shall comply with the requirements of 27 CCR, section 20415 for any water quality monitoring program developed to satisfy 27 CCR, section 20420 (Detection Monitoring Program), section 20425 (Evaluation Monitoring Program), or section 20430 (Corrective Action Program) and the requirements of this Order.
 - a. Groundwater monitoring shall meet the requirements of 27 CCR, section 20415(b) and 40 CFR, section 258.51 (a, c, and d);
 - b. Surface water monitoring shall meet the requirements of 27 CCR, section 20415(c). In addition, whenever possible, the Discharger shall measure volumetric flow or, at a minimum, visually estimate the flow rate for all surface water monitoring points with flowing water (i.e. any flowing seeps or springs that develop during the development or operation of the Landfill);
 - c. An unsaturated zone monitoring program is required by 27 CCR, section 20415(d). However, as described in Finding No. 16 of Order No. R4-2006-0080, unsaturated zone monitoring attempted at the Landfill has proved ineffective. Through adoption of this Order the Regional Board

¹ Intrawell statistics compare historical data at the compliance well against recent observations from that well. This eliminates the possibility that spatial variation between upgradient and downgradient wells can cause an erroneous conclusion that a release has occurred, but assumes that the historical data at the compliance wells have not been impacted by the facility.

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approves that an unsaturated zone monitoring program is not required for continued operation of the Landfill.

d. A soil gas monitoring program as an alternative methodology to supplement groundwater monitoring has been developed for the Landfill. Soil-gas samples collected from the monitoring network in Provision I.2 above shall be used as surrogates for groundwater in the down-canyon portion of the site. Soil-gas samples shall be analyzed for anthropogenic chlorinated volatile organic compounds (VOCs), and assessed to determine the potential for detecting VOCs in groundwater using gas-water equilibrium calculations based on Henry's Law.

6. Monitoring for Groundwater Monitoring Parameters Conducted Quarterly: All groundwater monitoring points assigned to detection monitoring shall be sampled quarterly. Monitoring for the following monitoring parameters shall be carried out in accordance with Statistical Data Analysis Methodology (Item No. I.12 below) and California Nonstatistical Data Analysis Method (Item No. I.13 below) for all point of compliance monitoring points.

<u>Groundwater Monitoring Parameters</u>	<u>Units</u>
Chemical Oxygen Demand	mg/l
Total Organic Halides	mg/l
Total Organic Carbon	mg/l
Total Dissolved Solids	mg/l
Chloride	mg/l
Sulfate	mg/l
Boron	mg/l
Nitrate + nitrite - nitrogen	mg/l
Ammonia - nitrogen	mg/l
Bicarbonate Alkalinity (as CaCO ₃)	mg/l
Total Hardness (as CaCO ₃)	mg/l
VOCs	µg/l
Electrical Conductivity	mhos/cm
pH	pH units

7. Monitoring of Select Groundwater Monitoring Parameters Annually: In the absence of a release to groundwater being indicated for a monitoring parameter or based upon physical evidence, the Discharger shall sample all groundwater point of compliance monitoring points for the following select monitoring parameters annually. The Discharger shall complete the sampling for this expanded list of

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monitoring parameters during the October quarterly monitoring event of each year.

Groundwater Monitoring Parameters:

Semi-volatiles*
Pesticides*
Polychlorinated Biphenols*
Metals**
Biological Oxygen Demand
Foaming Agents
Herbicides
Nitrite
Oil and Grease
Sulfides
Total cyanide
Turbidity

*All peaks greater than 10% of the internal standard shall be identified and quantified for gas chromatography analyses.

** Antimony, Arsenic, Barium, Beryllium, Cadmium, Total / Hexavalent Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

8. Direct Monitoring of All Groundwater COCs Every Five Years: In the absence of a groundwater release being indicated for a monitoring parameter or based upon physical evidence, or by a study required by the Regional Board's Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data, the Discharger shall sample all point of compliance monitoring points for all COCs every fifth year, beginning with the year of adoption of Regional Board Order No. R4-2006-0080.

The samples shall be analyzed for all COC constituents listed in Appendix I and Appendix II to 40 CFR, part 258 that are not already a monitoring parameter, emergent chemicals (Perchlorate, N-Nitrosodimethylamine (NDMA), 1,4-Dioxane, and 1,2,3-Trichloropropane), as well as any other constituent directed by the Executive Officer. The Discharger may propose for approval of the Executive Officer an alternative COC list for any monitoring points downgradient of an active LCRS for which testing of LCRS leachate per Leachate Monitoring (Item No. I.14 below) has been completed.

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9. Initial Background Groundwater Determination: For the purpose of establishing an initial pool of background data for each groundwater COC at each background monitoring point in each monitored medium 27 CCR, section 20415(e)(6);
 - a. Whenever a new monitoring parameter is added to the Water Quality Protection Standard (WQPS), including any added by the adoption of Regional Board Order No R4-2006-0080, 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 Regional Board Order No. R4-2006-0080, the Discharger shall sample it at least quarterly for at least one year, analyzing for all COCs and monitoring parameters.
10. Quarterly Determination of Groundwater Flow Rate / Direction (27 CCR, section 25415(e)(15): The Discharger shall measure the water level in wells MW-A, MW-B, and MW-C, and determine groundwater flow rate and direction in each groundwater body quarterly. This information shall be included in the quarterly monitoring parameter reports.
11. At any time, the Discharger may propose to revise or amend the groundwater statistical analysis methods for the Landfill to develop a site specific analysis methodology that incorporates the spectrum of possible changes in data characteristics over time. Revised or amended statistical analysis methods will not be implemented by the Discharger unless they are approved by the Executive Officer.
12. Groundwater Statistical Data Analysis Methodology
 - a. Intra-well comparison methods shall be used for all compliance wells for all constituents that are detectable at concentrations above their respective Method Detection Limit (MDL) in 10% or more of the background data to date. Initially, for each given monitoring parameter at a given downgradient monitoring well, the proposed background data set shall consist of all validated data from that compliance well and parameter, from the previous five year period. Every two years, following the adoption of this M&RP, as part of the annual monitoring summary report, the Discharger shall add the newer data to the background data set for each

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monitoring parameter after validating (via a method approved by the Executive Officer) that the new data does not indicate an increase over the existing background data. At that time, the Discharger shall also retire the monitoring parameter's oldest two years of background data, thereby producing a data set covering the then-previous five years. The Discharger shall validate the proposed intra-well background data set as follows for each monitoring parameter at each well (initially) or, subsequently, at a new well or for a new monitoring parameter at an existing well. The Discharger shall report the validated or updated background data set, for each affected monitoring parameter, in the next scheduled monitoring report.

- b. Per 27 CCR section 20415(e)(9)(C), if a control chart approach is used to evaluate water quality monitoring data, the specific type of control chart and its associated statistical parameter values (e.g., the upper control limit) shall be included in the supporting documentation as required by 27 CCR section 20415(e)(7). The Discharger shall use the procedure only if this supporting documentation shows the procedure to be protective of human health and the environment. Any control charting procedure must have a false positive rate of no less than 1 percent for each monitoring point charted. For example, upper control limits on X bar or R Charts used only once every six months (where no composite retest is used) must be set at no more than 2.327 standard deviations of the statistic plotted for a one-sided statistical comparison, or at no more than 2.576 standard deviations of the statistic plotted for a two-sided statistical comparison.
- c. In the event that an approved data analysis method provides a preliminary indication that a given monitoring parameter has a measurably significant increase at a given well, the Discharger shall conduct a verification procedure (retest) in accordance with 27 CCR section 20415(e)(8)(E).
- d. The verification procedure shall be performed only for the constituent(s) or parameter(s) that has shown "measurably significant" (see 27 CCR section 20164) evidence of a release, and shall be performed only for those monitoring points at which a release is indicated.
- e. Water Quality Monitoring Approach: Except for COC scans, the monitoring approach used for each monitoring parameter at compliance wells shall be controlled by whether that monitoring parameter has exhibited a measurably significant increase at that well. Therefore, the

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Discharger shall monitor each monitoring parameter in one of two modes, as follows, either:

- i. **Detection Mode:** For a monitoring parameter that has not produced a measurably significant increase at that well, the purpose of monitoring, for that monitoring parameter, is to watch for the monitoring parameter's arrival at that well at a concentration strong enough to trigger a measurably significant indication using an appropriate statistical or nonstatistical data analysis method; or
 - ii. **Tracking Mode:** For a monitoring parameter that has produced a measurably significant increase at a given well, the purpose of the monitoring, for that monitoring parameter, is to verify the suitability and effectiveness of the existing or proposed corrective measures by tracking changes in the monitoring parameter 's concentration at that location via an evolving concentration-versus-time plot.
- f. **Detection Mode Data Analyses:** The following applies to all detection mode data analyses:
- i. **Monitoring Parameters Readily Detectable in Background:** At any given monitoring point, the Discharger shall apply an appropriate statistical analysis for each detection mode monitoring parameter that exceeds its respective MDL in at least 10% of the applicable background data set;
 - ii. **Monitoring Parameters Not Readily Detectable in Background:** For any monitoring point at which one or more monitoring parameters, in detection mode, exceed their respective MDL in less than 10% of the applicable background data set, the Discharger shall analyze the data for these monitoring parameters via the California Nonstatistical Data Analysis Method (CNSDAM) test described in Item No. I.13 of this M&RP.

13. **California Nonstatistical Data Analysis Method (CNSDAM) for Groundwater**

- a. **Non-Statistical Method for Detection Mode for Monitoring Parameters Seldom Found in Background:** For any given compliance (downgradient) well, regardless of the monitoring program (Detection Monitoring, Evaluation Monitoring, or Corrective Action), the Discharger shall use this

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data analysis method, jointly, for all constituents on the “scope list” in Item No. I.13.a.i of this M&RP (or, for each retest sample, the modified scope list of Item No. I.13.b.ii.

- i. Scope List: Within 30 days of the effective date of this Order, the Discharger shall create a current “scope list” showing each detection mode monitoring parameter, at that well, that exceeds its MDL in less than 10% of its background data.
 - ii. Two Triggers: From the scope list made under Item No. I.13.a.i above, for an initial test (or, for a retest, the modified scope list under Item No. I.13.b.ii below), the Discharger shall identify each monitoring parameter in the current sample from that well that exceeds either its respective MDL or Practical Quantitation Limit (PQL). The Discharger shall conclude that these exceeding monitoring parameters provide a preliminary indication (or, for a retest, provide a measurably significant indication) of a change in the nature or extent of the release, at that well, if either:
 - (a) Two or more of the monitoring parameters on a monitoring well’s scope list exceed their respective MDL; or
 - (b) At least one of the monitoring parameters on a monitoring well’s scope list equals or exceeds its respective PQL.
- b. Discrete Retest [27 CCR section 20415(e)(8)(E)]:
- i. In the event that the Discharger concludes (pursuant to Item No. I.13.a.ii above) that there is a preliminary indication, then the Discharger shall immediately notify Regional Board staff by phone, fax, or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the indicating compliance well.
 - ii. For any given compliance well, the Discharger shall analyze the retest samples only for those constituents indicated in that well’s original test, under Item No. I.13.a.ii of this M&RP, and these indicated constituents shall comprise the well’s “modified scope list.” As soon as the retest data are available, the Discharger shall apply the same test (under Item No. I.13.a.ii above, but using this modified scope list) to separately analyze each of the two suites of

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retest data at that compliance well.

If either (or both) of the retest samples trips either (or both) of the triggers under Item No. I.13.a.ii, then the Discharger shall conclude that there is a measurably significant increase at that well for the constituent(s) indicated in the validating retest sample(s). Furthermore, thereafter, the Discharger shall monitor the indicated constituent(s) in tracking mode at that well, shall remove the constituent(s) from the scope list created for that well, notify the Regional Board in writing, and highlight this conclusion and these changes in the next scheduled monitoring report and in the Landfill's operating record.

14. Leachate Monitoring: The Discharger shall conduct leachate monitoring at any leachate collection system as follows:
 - a. Annual Appendix II Constituent Scan: Leachate samples shall be taken at each monitoring point each year during the month of October. The samples shall be analyzed for all Appendix II Constituents in 40 CFR, part 258 as well as any other constituent directed by the Executive Officer.
 - b. Retest: If any constituents that are not in the COC list are detected in the leachate sampling event at any sampling point, the Discharger shall resample the leachate at that point during the next April and analyze the sample for those detected constituents. If any such constituent is confirmed to be in the leachate, the Discharger shall add the constituent to the COC list and report this to the Regional Board within two weeks of the confirmation.
 - c. Reporting: Leachate monitoring results shall be included in the quarterly and annual report that covers the period during which the monitoring is conducted.
15. If any time the laboratory analysis of a sample from a groundwater background monitoring point, sampled for VOCs, shows either two or more VOCs above their respective MDL, or one VOC above its respective PQL that are not laboratory artifacts, 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 within thirty days. If either or both

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the new samples validates the presence of VOCs at that background monitoring point, using the above procedure, the Discharger shall:

- a. Immediately notify the Regional Board regarding the VOCs verified to be present at that background monitoring point, and follow up with written notification submitted by certified mail within seven 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 VOCs originated from the landfill and proposing appropriate changes to the monitoring program.
16. If the Regional Board's Executive Officer determines, after reviewing the report submitted under Item No. I.15, that the detected VOCs most likely originated from the Landfill, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Item No. II.7.d of this M&RP.

II. REQUIRED REPORTS AND CONTINGENCY RESPONSE

1. The Discharger shall submit any reports required by this Order electronically, in accordance with section 3890 et. seq. of the 23 CCR, division 3. In addition, complete paper copies of any Joint Technical Document (or addenda thereto), Closure/Post-Closure Plan, Final Design Report or Construction Quality Assurance Report, shall be submitted to this Regional Board office by the required electronic submittal date.
2. Written reports shall be maintained by the Discharger or corresponding laboratory and shall be retained for a minimum of five 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:
 - a. Identity of sample and of the monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
 - b. Date and time of sampling;
 - c. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;

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- d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
 - e. Calculations of results; and
 - f. Results of analyses, and the MDL and PQL for each analysis.
3. A quarterly monitoring report and an annual summary report shall be submitted pursuant the following schedule. Every five years, the Discharger shall also submit a report concerning the direct analysis of all COCs (COC report), alternating between the Spring/Summer and Fall/Winter monitoring periods.

Quarterly Reports:

<u>Period</u>	<u>Sampling Period</u>	<u>Reporting Date</u>
First Quarter (Winter)	January 1 – January 31	April 30
Second Quarter (Spring)	April 1 – April 30	July 31
Third Quarter (Summer)	July 1 – July 31	October 31
Fourth Quarter (Fall)	October 1 – October 31	January 31

Annual Summary Report:

<u>Period</u>	<u>Sampling Period</u>	<u>Reporting Date</u>
January 1 - December 31	October 1 – October 31	January 31

4. Quarterly Reports shall include, but should not be limited to, the following:
- a. Transmittal Letter: A letter transmitting the essential points shall accompany each report. Such a 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. If the Discharger has previously submitted a detailed time schedule for correcting said 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 transmittal letter. 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 a 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.

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- b. Summary of Non-Compliance: The report shall contain a summary of non-compliance that discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. Significant aspects of any on going corrective action measures conducted during the monitoring period shall also be summarized. This section shall be located at the front of the report and shall clearly list all non-compliance with discharge requirements, as well as all exceedances of water quality protection standards.
- c. Site Conditions: General discussion of site conditions (geology, climate, 100 year 24 hour storm, and watershed specifics, etc.) relative to water quality monitoring.
- d. Narrative Description: A narrative discussion of the sites various monitoring activities and results. Each requirement of Part II of this M&RP shall be specifically discussed.
- e. Laboratory Results: Laboratory results and statements demonstrating compliance with Part II of this Monitoring and Reporting Program. Results of additional sampling and analyses performed at the Landfill, outside of the requirements of this M&RP, shall be summarized and reported. If the results of such additional sampling and analyses have or will be reported under separate cover, a statement as such shall be included in the monitoring report.
- f. Standard Observations: A summary and certification of completion of all Standard Observations for the Landfill property in accordance with NPDES monitoring and reporting requirements. The records of observation are to be included with the quarterly report due January 31st.
- g. Extracted Groundwater and Leachate: A summary of the total volume, on a monthly basis, of groundwater extracted at the extraction trench and any other locations at the site, and how this water is handled. If there is any landfill leachate and gas condensate that has been extracted from the landfill, the volume and disposal method of these liquids shall also be reported.
- h. Waste Disposal Reporting: Waste disposal activities at the site, including:

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- i. A tabular list of the estimated average monthly quantities (in cubic yards and tons) deposited each month.
- ii. An estimate of the remaining capacity (in cubic yards and tons) and the remaining life of the site in years and months.
- iii. A certification that all wastes deposited were deposited in compliance with the Board's requirements, and that no wastes were deposited outside of the boundaries of the waste management area as specified in the Board's requirements.
- iv. A description of the location and an estimate of the seepage rate or flow of all known seeps and springs at the site.
- v. The estimated amount of water used at the waste management area for landscape irrigation, compaction, dust control, etc., during each month. (If a source other than potable water is used, the sources and amounts of water from each source shall also be reported.)
- vi. Waste water reuse reporting shall include the following:
 - A) A statement that, during the reporting period, all waste water was used only as specified, and for the uses specified in Order No. R4-2006-0080.
 - B) Approximate acreage and locations receiving reused water for irrigation.
 - C) Analytical results for waste water shall be submitted with the corresponding quarterly report. If a waste water source was not sampled or measured during the reporting period, the reason for the omission shall be given. If no waste water reused from a source, a statement to that effect shall be provided in lieu of analyses.
 - D) Records of operational problems, mechanical breakdowns, and diversions to emergency storage or disposal associated with any violations, or potential violations of Order No. R4-2006-0080.
 - E) Any corrective actions taken.

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- F) If all or a portion of the waste water was not reused because of a failure to meet the limits specified in Order No. R4-2006-0080, the report shall so state and identify the disposition of the effluent.
- vii. The Discharger shall report all unacceptable wastes inadvertently received at this site and their disposition. The following details shall be included:
 - A) The source (if known), including the hauler, of the unacceptable wastes and date received and/or discovered.
 - B) Identification of waste (if known) and the amount of waste.
 - C) The name and address of the hauler who removed the waste from this site.
 - D) The ultimate point of disposal for the waste.
 - E) The Discharger's actions to prevent recurrence of the attempted depositing of unacceptable wastes by this source or individual.
 - F) If no unacceptable wastes were received (or discovered) during the month, the report shall so state.
- i. Map(s): Map(s) or aerial photograph(s) showing waste disposal and monitoring locations, relative physical features, and groundwater contours to the greatest degree of accuracy possible.
- 5. If the Discharger performs analyses for any parameter more frequently than required by this M&RP using approved analytical methods, the results of those analyses shall be included in the corresponding monitoring report.
- 6. The Discharger shall submit an annual summary report to the Regional Board covering the previous monitoring year. This report shall contain:
 - a. A graphical presentation of analytical data [27 CCR, section 20415(e)(14)]: For each groundwater monitoring point, submit in graphical format the laboratory analytical data for all samples taken within

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at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given 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 [27 CCR, section 20080(d)(2)], the results of which will determine whether or not a release is indicated;

- b. All monitoring analytical data obtained during the previous quarterly monitoring and reporting periods, presented in tabular form;
- c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken, or planned, which may be needed to bring the Discharger into full compliance with the WDRs; and
- d. A written summary of the groundwater analyses, indicating any changes made since the previous annual report.

7. Contingency Reporting

- a. The Discharger shall report by telephone to Regional Board staff, any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Regional Board within seven days of the verbal report, containing at least the following information:
 - i. A map showing the location(s) of seepage;
 - ii. An estimate of the flow rate;
 - iii. A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
 - iv. Corrective measures underway or proposed.
- b. Should the initial groundwater statistical comparison or non-statistical comparison or soil-gas monitoring results indicate, for any monitoring parameter or COC, that a release is tentatively identified, the Discharger shall immediately verbally notify Regional Board staff as to the

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monitoring point(s) involved, shall provide written notification by certified mail within seven days of such determination [27 CCR, section 20420(j)(1)], and shall carry out a discrete retest. If the retest confirms a release, the Discharger shall carry out the requirements of Item No. II.7.d of this M&RP. In any case, the Discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, and follow up with written results submitted by certified mail within seven days of completing the retest.

- c. If either the Discharger or the Regional Board determines that there is significant physical evidence of a release [27 CCR, section 20385(3)], the Discharger shall immediately notify the Regional Board of this fact by certified mail (or acknowledge the Regional Board's determination of a potential release) and shall carry out the requirements of Item No. II.7.d of this M&RP for all potentially-affected monitored media.
- d. If the Discharger concludes that a release has been discovered:
 - i. If this conclusion is not based upon direct monitoring of the groundwater monitoring parameters or COCs or soil-gas monitoring results, the Discharger shall, within thirty days, sample for all COCs at all monitoring points and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Regional Board, by certified mail, of the concentration of all COCs at each monitoring point. Because this scan is not to be tested against background, only a single datum is required for each COC at each monitoring point [27 CCR, section 20420(k)(1)];
 - ii. The Discharger shall, within 90 days of discovering a release, submit a revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of 27 CCR, section 20420(k)(5) and 20425; and
 - iii. The Discharger shall, within 180 days of discovering a release, submit a preliminary engineering feasibility study meeting the requirements of 27 CCR, section 20420(k)(6).
- e. Any time the Discharger concludes, or the Regional Board Executive Officer directs the Discharger to conclude, that a liquid release from the landfill has extended beyond the facility boundary, the Discharger shall so

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notify all persons who either own or reside upon the land (affected persons) that directly overlies any part of the plume.

- i. Initial notification to affected persons shall be accomplished within fourteen 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
- ii. Subsequent to initial notification, the Discharger shall provide updates to all affected persons, including any newly affected persons, within fourteen days of concluding there has been any material change in the nature or extent of the release.

8. Each monitoring 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."

9. 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 Executive Officer.

10. All reports required in this M&RP shall be addressed to:

California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013
ATTN: Information Technology Unit

11. The Discharger shall inspect the Landfill in accordance with the following schedule, and record, at a minimum, Standard Observations.

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- a. During the wet season (October through April), following each storm that produces storm water runoff, or on a monthly basis if no storm produces runoff during the month.
- b. During the dry season, a minimum of one inspection shall be performed every three months.
- c. Standard Observations during a site inspection shall include at least the following:
 - i. Evidence of any surface water leaving or entering the Unit, estimated size of affected area, and estimated flow rate (show affected area on map).
 - ii. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
 - iii. Evidence of erosion and/or of exposed refuse.
 - iv. Inspection of all storm water discharge locations for evidence of non-storm water discharges during dry seasons, and integrity during wet seasons.
 - v. Evidence of ponded water at any point on the waste management facility (show affected area on map).
 - vi. Compliance with the Storm Water Pollution Prevention Plan, insuring that the terms of the General NPDES Stormwater Permit are properly implemented.
 - vii. Integrity of all drainage systems.

III. GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES

1. Sample collection, storage, and analysis shall be performed according to the most recent version of standard U.S. Environmental Protection Agency (USEPA) methods, and in accordance with an approved sampling and analysis plan. Proper chain of custody procedures shall be used. Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-

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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 seeing that the laboratory analysis of all samples from monitoring points and background monitoring points meets the following restrictions:

- a. 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% 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 MDL shall be selected from among those methods which would provide valid results in light of any matrix effects involved.
- b. Trace results falling between the MDL and the facility-specific 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.
- c. 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 lab, rather than simply being quoted from USEPA analytical method manuals. If the lab 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.
- d. All Quality Assurance / Quality Control (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%, 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

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of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.

- e. 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, bis(2-Ethylhexyl)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 sample shall be reported and flagged for easy reference by Regional Board staff.
 - f. 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.
 - g. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
 - h. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.
2. For the purposes of this M&RP, any methods and analysis and detection limits used that are alternative to the MDL/PQL must be approved by the Executive Officer. For example, Minimum Level (ML) and Reporting Limit (RL), as described in Attachment 1, can be functional equivalents to MDL and PQL with regard to reporting and statistical evaluation requirements. For this purpose, MLs and RLs shall be derived by the laboratory for each analytical procedure, according to the SWRCB's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (the State Implementation Policy or SIP) and the State of California's laboratory accreditation procedures.
 3. Thirty-Day Sample Procurement Limitation: For any given monitored medium, the samples taken from all monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span of 30

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days, and shall be taken in a manner that insures sample independence to the greatest extent feasible [27 CCR, section 20415(e)(12)(B)]. Groundwater sampling shall also include an accurate determination of the groundwater surface elevation and field parameters (temperature, pH, electrical conductivity, turbidity) for that monitoring point [27 CCR, section 20415(e)(13)]; groundwater elevations taken prior to purging the well and sampling for monitoring parameters shall be used to fulfill groundwater flow rate/direction analyses. Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Statistical and Non-Statistical Analyses of Sample Data during a Detection Monitoring Program of this M&RP.

4. The Discharger shall sample all monitoring points in accordance with the sampling schedule given under Item No. II.3 of this M&RP, taking enough samples to qualify for the most appropriate test under Statistical and Non-Statistical Analyses of Sample Data during a Detection Monitoring Program of this M&RP.

IV. SOIL GAS SAMPLING AND ANALYTICAL PROCEDURES

1. The Discharger shall use the soil-pore gas probes listed in Table 1 (attached) for detecting a release in either the gas or liquid phase at the Landfill.
2. The Discharger shall use the chlorinated anthropogenic VOCs listed in Table 2 (attached) for detecting a release in either the gas or liquid phase at the Landfill.
3. Samples will be analyzed for chlorinated anthropogenic VOCs using USEPA Method TO-14 or TO-15.
4. Soil gas samples shall be collected quarterly.
5. Soil-gas samples will be collected from soil-gas probes P-1(3) and P-26(3) each quarterly monitoring event. In addition, as many as three additional probes will be sampled based on the following selection criteria:
 - a. Methane is detected at a concentration greater than one percent in a probe in each of the two months preceding the quarterly sampling event.
 - b. The carbon dioxide concentration in the two preceding months exceeds ten percent.

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- c. The carbon dioxide concentration in the three preceding months ranges from approximately four to seven percent and the last event exceeds nine percent.
 - d. If three or fewer probes are identified for potential sampling based on the criteria above, all of identified probes will be used for VOC sample collection.
 - e. If more than three probes are identified for potential sampling, the probes will be ranked. Probes with methane will be ranked above those with carbon dioxide, and those with carbon dioxide concentrations greater than ten percent will be ranked above those with increased carbon dioxide concentrations.
 - f. The probes with the three highest rankings that are not adjacent to one another or adjacent to probes P-1(3) or P-26(3) will be sampled for VOCs. The intent is to achieve a wide distribution for VOC testing.
6. Before soil gas samples are collected, the well casing will be purged with a Landtec GEM 2000 or similar gas monitoring instrument. The purge requirements will be based on casing dimensions and the monitoring device's pump discharge rate. Well purge information shall be reported in the corresponding quarterly groundwater monitoring report.
 7. After purging is complete, a Summa canister will be attached to the casing and a gas sample will be collected.
 8. Soil-gas VOC concentration screening limits for use in detection monitoring at the Landfill have been established using Henry's Law calculations. The calculations and screening limits are shown in Table 2, attached, along with the lowest concentration that can be quantified in groundwater (i.e. reporting limit).
 9. The chlorinated anthropogenic VOC results will be compared to the screening levels presented in Table 2. In the event that a target VOC is reported in a soil-gas sample at a concentration that exceeds its screening level, Water Board staff will be notified immediately of a preliminary indication of a release per Monitoring and Reporting Program No. CI-4469 Part I.13.b., and a retest sample will be obtained within 30 days. The retest sample will be obtained from the same probe in which the screening limit was exceeded. The retest sample results will be compared to the screening levels and the results of the comparison will be reported Water Board staff immediately.

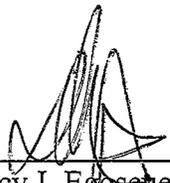
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10. In the event that a release is determined the Regional Board staff will be notified and the Discharger will proceed with evaluation monitoring procedures as defined in 27 CCR section 20425.

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Control Board, Los Angeles Region.

Ordered by _____

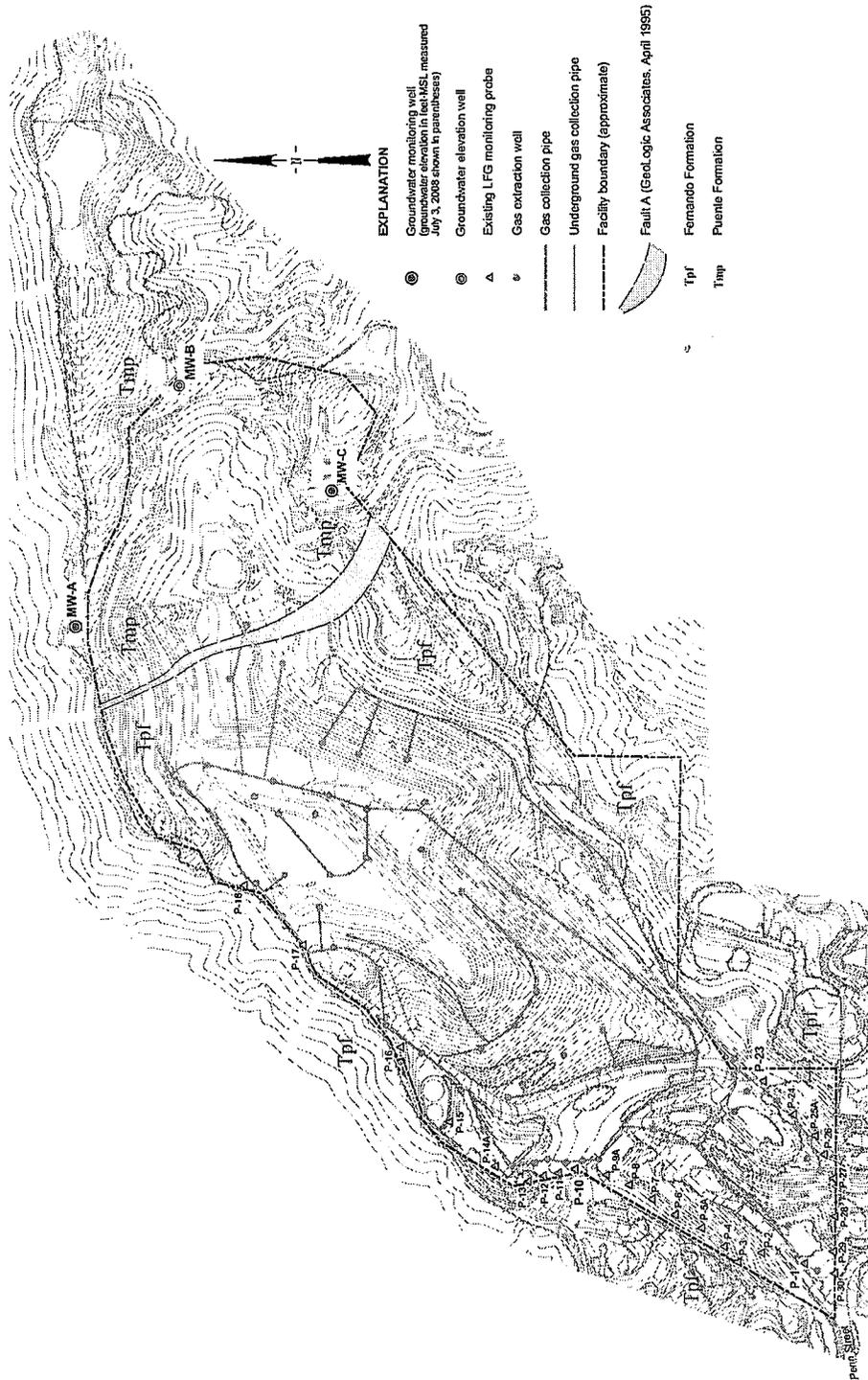

Tracy J. Egosecie
Executive Officer
July 23, 2009

Chief Deputy, E.O.
f.o.

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**Figure 1:
Monitoring Locations**



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Table 1:
Landfill Gas Monitoring Probes

Probe ID	Estimated Ground Surface Elevation (ft. MSL)	Boring Depth (ft. bgs)	Probe Depth (ft. bgs)
P-1(1)	427	270	93
P-1(2)	427	270	156
P-1(3)	427	270	230
P-3(1)	485	63	60
P-4(1)	490	70	70
P-5A(1)	510	64	55
P-6(1)	515	72	70
P-7(1)	515	71	70
P-8(1)	520	72	70
P-9A(1)	520	73	70
P-10(1)	562	110	56
P-10(2)	562	110	110
P-11(1)	600	145	90
P-11(2)	600	145	145
P-12(1)	620	170	110
P-12(2)	620	170	165
P-13(1)	640	158	107
P-13(2)	640	158	158
P-14A(1)	660	177	110
P-14A(2)	660	177	175
P-15(1)	670	115	85
P-23(1)	575	117	80
P-23(2)	575	117	115
P-24(1)	565	113	70
P-24(2)	565	113	110
P-25A(1)	567	112	70
P-25A(2)	567	112	110
P-26(1)	542	63	45
P-27(1)	505	40	40
P-28(1)	465	35	30
P-29(1)	430	34	30
P-30(1)	420	35	30

ft. MSL = feet relative to mean sea level

ft. bgs = feet below ground surface

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Table 2:
Soil-Gas Volatile Organic Compound Screening Levels

Chlorinated Anthropogenic VOCs	Soil-Gas Screening Level (ppbv) Cg	Molecular Weight (g/mole) MW	Soil-Gas Concentration (ug/m3) Cg	Henry's Law Constant (atm-m3/mol) H	Groundwater Reporting Limits (ug/L) Cw
Benzyl Chloride	3	127	17.1	0.0004	1
Bromodichloromethane	10	164	67	0.0016	1
Chlorobenzene	33	113	152.5	0.0037	1
Carbon tetrachloride	200	154	1259.2	0.03	1
Chloroethane	170	65	451.8	0.011	1
Chloromethane	970	50	2002	0.024	2
Chloroform	31	119	151.3	0.00367	1
Dibromochloromethane	4.2	208	35.3	0.00085	1
1,2-Dichlorobenzene	13	147	78.1	0.0019	1
1,3-Dichlorobenzene	13	147	78.1	0.0019	1
1,4-Dichlorobenzene	17	147	102.2	0.00243	1
1,1-Dichloroethane	57	99	230.7	0.0056	1
1,2-Dichloroethane	10	99	40.5	0.00098	1
1,1-Dichloroethene	270	97	1070.7	0.026	1
cis -1,2-Dichloroethene	43	97	170.5	0.0041	1
trans -1,2-Dichloroethene	99	97	392.6	0.0094	1
1,2-Dichloropropane	25	113	115.5	0.0028	1
1,2 cis- 1,3-Dichloropropene	12	111	54.5	0.0013	1
trans- 1,3-Dichloropropene	12	111	54.5	0.0013	1
Trichlorotrifluoroethane (Freon 113)	2850	187	21832.5	0.526	1
Trichlorofluoromethane (Freon 11)	725	137	4060.7	0.097	1
Dichlorodifluoromethane (Freon 12)	830	121	4105.9	0.1	1
1,2-Dichlorotetrafluoroethane (Freon 114)	16500	171	115351.6	2.8	1
Hexachlorobutadiene	102	261	1088.4	0.026	1
Methylene Chloride	27	85	92.1	0.0022	1
1,1,2,2-Tetrachloroethane	4.3	168	29.5	0.00035	2
Tetrachloroethene	110	166	746.5	0.018	1
1,2,4-Trichlorobenzene	16	180	117.7	0.0014	2
1,1,1-Trichloroethane	130	133	706.9	0.017	1
1,1,2-Trichloroethane	7	133	38.1	0.00091	1
Trichloroethene	78	131	417.7	0.01	1
Vinyl Chloride	435	63	1120.4	0.027	1

Henry's Law: $C_w = (C_g \times 0.024) / 1000 / H$

C_w = liquid phase concentration (ug/L)

C_g = vapor phase concentration (ug/m3)

H = Henry's law coefficient (atm-m3/mol)

0.024 = the value for $R \times T$, where R is the Universal Gas Constant and T is degrees Kelvin

1000 = conversion factor for cubic meters to liters

Screening level concentrations calculated at standard temperature (25 degrees C) and pressure (1 atmosphere) conditions.

Conversion from ppbv to ug/m3:

$ug/m3 = ppbv / 24.46 \times MW$

24.46 = molar volume

$ug/m3 = 0.001 ug/L$