

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

MONITORING AND REPORTING PROGRAM (No. CI-2567)

FOR
WASTE MANAGEMENT
(AZUSA LAND RECLAMATION LANDFILL)

Waste Management (Discharger) shall implement this revised monitoring and reporting program (M&RP¹) at the Azusa Land Reclamation Landfill (Landfill) beginning the effective date of Regional Board Order No. R4-2009-0XXX. This M&RP may be revised pending review of the report required by General Provisions K.5. in Order No. R4-2009-0XXX.

I. REQUIRED REPORTS AND CONTINGENCY RESPONSE

The Discharger shall submit the following reports to this Regional Board in accordance with the schedules specified.

A. QUARTERLY MONITORING REPORTS

A written Monitoring Report shall be submitted quarterly and an Annual Summary Report due by the following dates of each year:

Report	Date due to this Regional Board
January 1 to March 31	May 15
April 1 to June 30	August 15
July 1 to September 31	November 15
October 1 to December 31	February 15
Annual Report	February 15

Quarterly Reports shall include, but should not be limited to, the following:

1. Transmittal Letter: A letter transmitting the essential points, as described below, shall accompany each report. The letter shall identify any violations occurring since the last report, shall include a discussion of how and why the violations occurred, 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.

¹ Terms and acronym used in this Program are defined in Attachment A of Board Order R4-2009-XXXX as well as Section 20164 of 27 CCR.

2. 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 discharger 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 include a listing of each well/MPar pair that has changed its mode (detection mode, tracking mode, or Phase I proof mode), together with any new COC identified, new compliance or background well installed, and any COC that has changed from the landfill's UCOC List to its MPar List, during that Reporting Period. 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.
3. Site Conditions: General discussion of site conditions (geology, climate, 100 year 24 hour storm, and watershed specifics, etc.) relative to water quality monitoring, including two ground water contour maps of sufficient scope to identify ground water recharge and extraction areas that may impact ground water elevations and flow direction and gradient at the Landfill. One map shall reflect the ground water contour-and-flow conditions at the start of the Reporting Period and the other shall show those conditions as they existed mid-way through the Reporting Period.
4. Narrative Description – A narrative discussion of the site's various monitoring activities and results. Each requirement of Part II of this M&RP shall be specifically discussed.
5. Laboratory Results: Laboratory results and statements demonstrating compliance with Part II of this M&RP.
6. Management of Liquids: A summary of the total volumes, on a monthly basis, of landfill leachate, gas condensate, and contaminated subdrain water extracted at the site, and how these liquids are handled.
7. Waste Disposal Reporting: Waste disposal activities at the site, including:
 - a. A tabular list of the estimated average monthly quantities (in cubic yards and tons) deposited each month.
 - b. An estimate of the remaining capacity (in cubic yards and tons) and the remaining life of the site in years and months.
 - c. A certification that all wastes were deposited in compliance with the Regional Board's requirements, and that no wastes were deposited outside of the boundaries of the waste management area as specified in the Regional Board's requirements.
 - d. 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.)
 - e. The Discharger shall report all unacceptable wastes inadvertently received at this site and their disposition. The following details shall be included:

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- i. The source (if known), including the hauler, of the unacceptable wastes and date received and/or discovered.
- ii. Identification of waste (if known) and the amount of waste.
- iii. The name and address of the hauler who removed the waste from this site.
- iv. The ultimate point of disposal for the waste.
- v. The Discharger's actions to prevent recurrence of the attempted depositing of unacceptable wastes by this source or individual.

If no unacceptable wastes were received (or discovered) during the month, the report shall so state.

8. Map(s): Map(s) or aerial photograph(s) showing waste disposal and monitoring locations, relative physical features, and include monthly contour maps, including flow nets, showing impacts from groundwater pumping and spreading within a one-mile radius of the Landfill on the groundwater monitoring system for the Landfill.

B. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual summary report to the Regional Board covering the previous monitoring year. The annual monitoring period ends December 31. This report may be combined with the fourth quarterly report of the year and shall be submitted no later than February 15 of each year. The annual summary report shall include at least the following:

1. Discussion: Include a comprehensive discussion of the compliance record, any significant monitoring system and operational changes, a summary of corrective action results and milestones, and a review of construction projects, with water quality significance, completed or commenced in the past year or planned for the up-coming year.
2. Graphical Presentation of Analytical Data: For each well/MPar pair that is no longer in detection mode, submit in graphical format the laboratory analytical data for all samples taken within at least the previous eight calendar years, as a concentration-versus-time plot. Each such graph shall plot the concentration of the monitoring data for that well/MPar pair together with a similar plot of the background data set (concentration limit) with both plots at the same scale, which scale shall be appropriate to show trends or variations in water quality. Maximum contaminant levels (MCL) shall be graphed (each MCL concentration as a horizontal line on the plot) along with constituent concentrations where applicable. Graphs shall plot each datum, rather than plotting means values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. The accompanying Annual CAMs Effectiveness Analysis shall address the following issues, by reference both to these tracking mode well/MPar pair plots and to the proportion of release-affected well/MPar pairs that have transitioned to Phase 1 proof mode:

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- a. Each such plot shall show a horizontal line indicating the concentration limit's (background data set's) mean value, and the submittal shall include a discussion as to whether the corrective action measures (CAMs) are proving effective at bringing each released waste constituent back down to its respective background mean value at a rate that will result in the landfill's coming back into compliance with its Water Quality Protection Standard within a foreseeable period of time. For any MPar in tracking mode at one or more MPt wells, if this analysis cannot verify that the CAMs are achieving this goal, the report shall propose an updated suite of CAMs that will achieve this goal; likewise,
- b. For any instance in which an MPt well that was previously unaffected by the release (i.e., all MPar's were in detection mode at that well, as of the adoption date of the CAP WDRs), if any MPar at that well transitions to tracking mode (release indication), the report shall include a proposed revision to the CAMs such that the release will not continue to expand beyond its footprint as of the adoption date of the CAP WDRs.

The change from a semi-annual CAMs Effectiveness Analysis to this annual approach is taken pursuant to 27 CCR §20080(a)(1), given that the reliability of trend inferences of such a report is improved by addressing the prior two new data points at each release-affected (tracking mode) well/MPar pair, rather than the single new datum that would be available under a semi-annual approach.

3. Analytical Data: All monitoring analytical data obtained during the previous year, presented in tabular form. Additionally, complete data histories of each well shall be submitted in an electronic format acceptable to the Regional Board.
4. Map(s): Map(s) showing the areas where any significant events have taken place during the previous calendar year and, for final-closed portions of the landfill, the degree, and location, of differential settlement noted in the final cover.
5. M&RP Appendices Updated Annually — An update to any of the following Appendices to this M&RP, as needed to reflect any change, therein, since the prior annual report or, for the first year, since the CAP WDRs were adopted:
 - a. The Concentration Limits, Modes (MPar), and 85th Percentiles (UCOC), by Well/COC Pair listing for each well/COC pair (Appendix 1 to this M&RP);
 - b. The Data Analysis Methods listing for each well/MPar pair (Appendix 2 to this M&RP); and
 - c. The MPar List and UCOC List (Appendix 3 to this M&RP) to reflect any new COCs for which the background data (concentration limit) is being collected for each well/COC pair, any new COC added to the MPar List or UCOC List (after establishing its respective concentration limit at each MPt well), any new MPt well for which concentration limits for each existing MPar and UCOC are being developed, and any COC that has moved from the UCOC List to its MPar list.

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C. CONTINGENCY RESPONSE

1. Leachate Seep: The Discharger shall, within 24 hours of discovery, report to the Regional Board by telephone any previously unreported seepage from the Landfill. A written report shall be filed with the Regional Board 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.
 - c. Description - A description of the nature of the discharge (e.g., all pertinent observations and analyses).
 - d. Location - Location of sample(s) collected for laboratory analysis, as appropriate.
 - e. Corrective measures - approved (or proposed for consideration) by the Executive Officer.
2. Response to an Initial Indication of a Release: Should the initial statistical or non-statistical comparison (for a given Reporting Period) indicate that the existing release is tentatively identified by analysis of the beginning-of-Reporting-Period sample for any detection mode well/MPar pair, the Discharger shall:
 - a. Within 24 hours, verbally notify the designated Regional Board staff contact as to the monitoring point(s) and constituent(s) or parameter(s) involved;
 - b. Provide written notification by certified mail within seven days of such determination; and
 - c. Do either of the following:
 - i. For a well/MPar pair using a statistical data analysis method, carry out a pass-1-of-3 retesting approach in accordance with Section II.B.8 of this M&RP. If the re-testing confirms the release indication, or the Discharger fails to perform the re-test, the Discharger shall immediately change that well/MPar pair to tracking mode and shall carry out the response requirements in Section I.C.4. In any case, the Discharger shall inform the Regional Board of the re-test outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days, or
 - ii. For a well/MPar pair that qualifies for the California Nonstatistical Data Analysis Method (CNSDAM)² described in Appendix 4 to this M&RP, carry out the pass-1-of-2 retesting approach and response actions therein described.

² In case the CNSDAM re-test is triggered by detections of common laboratory contaminants (i.e., acetone, toluene, methylene chloride, and carbon disulfide) the Discharger shall remove that VOC from the scope list for that MPt well and shall begin analyzing it using an approved statistical method beginning with the next Reporting Period.

- d. If a data analysis (under ¶I.C.2.c) provides a verified transition to tracking mode for any well/MPar pair, and the Discharger believes that this indication is in error, the Discharger can make a demonstration, in accordance with 27 CCR section 20420(k)(7), that a source other than the waste management unit caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone. If the Executive Officer agrees with the Discharger's demonstration, the affected well/MPar pair(s) can return to detection mode.
3. Physical Evidence of a Release: If either the Discharger or the Executive Officer determines that there is significant physical evidence (27 CCR, section 20385(a)(3)) that the existing release to groundwater has extended beyond the geographic area it covered as of the adoption date of Order No. R4-2009-0XXX, the Discharger shall conclude that the existing corrective action measures (CAMs) are inadequate and shall:
 - a. Within seven days notify the Regional Board of this fact by certified mail (or acknowledge the Regional Board's determination).
 - b. Carry out the requirements of Section I.C.4. and
 - c. Carry out any additional investigations stipulated in writing by the Executive Officer for the purpose of identifying the cause of the indication.
4. Release Discovery Response: If either the Discharger or the Executive Officer concludes that a release has been discovered, the following steps shall be carried out:
 - a. Release is Expanding — If this change involves the transition from detection mode to tracking mode for any MPar at a MPt well that is located outside the geographical area the release covered as of the date of adoption of Order No. R4-2009-0XXX, the Discharger shall, within 90 days, submit an Amended report of Waste Discharge proposing and substantiating a revised suite of corrective action measures (CAMs) that will prevent the release from extending any further into previously-unaffected portions of the aquifer.
 - b. New Constituent in the Release — If this change involves the transition from detection mode to tracking mode at any MPt well for a constituent that is in detection mode at all other MPt wells, the Discharger shall conclude that there is a new constituent is actively involved in the release and shall, within 90 days thereafter, submit an Amended Report of Waste Discharge that includes a determination as to whether the existing CAMs are adequate to remediate the new release constituent and, if not, proposing and substantiating a suite of revised CAMs that will provide effective remediation of all released constituents, including this new one.
 - c. Minor Change Within the Release Footprint — If this change involves the transition from detection mode to tracking mode at any MPt well for a constituent that is in tracking mode at one or more wells within the geographic area of the release (as of the adoption date of Order No. R4-2009-0XXX), the Discharger shall note this change prominently in the next monitoring report and the Annual Monitoring Report.

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- d. Apparent Return to Compliance — Any time a well/MPar pair in tracking mode has two Reporting Periods in a row in which each compliance datum for that pair plots at-or-below the mean background concentration (the horizontal line showing the mean background concentration), that well/MPar pair shall transition automatically from tracking mode to Phase I proof mode and the Discharger shall indicate this change immediately to their Regional Water Board contact (by phone or e-mail), shall highlight that change in monitoring report for that Reporting Period and in the annual summary monitoring report, with special focus on that change in summary report's CAMs effectiveness analysis required under ¶I.B.2.
5. Release Beyond Facility Boundary: Any time the Discharger concludes (or the Executive Officer directs the Discharger to conclude) that a release from the Landfill 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) as follows:
 - a. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.
 - b. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release [see ¶I.C.2 through ¶I.C.4].
 - c. Each time the Discharger sends a notification to Affected Persons (under a. or b., above), the Discharger shall, within seven days of sending such notification, provide the Regional Board with both a copy of the notification and a current mailing list of Affected Persons.

D. SUBMITTING OF REPORTS

1. Each monitoring report shall contain the following statement:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments 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 fine and imprisonment. [CWC Sections 13263, 13267, and 13268]”
2. 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.

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3. The Discharger shall submit all scheduled reports required in this M&RP electronically, in accordance with section 3890 et. seq. of the 23 CCR, division 3. In addition, a hard copy of the report and a compact disk that contains all electronic submittals shall be submitted to the Regional Board. To reduce volume, appendices to the report, such as field records and laboratory reports, may be omitted from the hard copy.
4. 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

II. REQUIRED MONITORING AND INSPECTIONS

The Discharger shall conduct the following monitoring and inspections at the Landfill. Unless otherwise indicated, all monitoring data and inspection results shall be reported to the Regional Board as outlined in Section I of this M&RP. In addition, Regional Board staff shall conduct annual testing appropriate to confirm the accuracy of the Discharger's self monitoring.

A. ENVIRONMENTAL MONITORING NETWORKS

The Discharger shall conduct quarterly analytical monitoring on groundwater, surface water, and the vadose (unsaturated) zone and semi-annual analytical monitoring for leachate at the Landfill. The current environmental monitoring points for the Landfill are summarized in Table T-1 and their locations are displayed on Figure T-1.

Table T-1: Monitoring Points at the Azusa Land Reclamation Landfill

Media Monitored	Monitoring Point	Location
Groundwater	ALR-1, ALR-2R, ALR-6, ALR-8	Down-gradient
	ALR-3, ALR-9, ALR-10, ALR-11	Up gradient
Leachate	Leachate sumps	Zone II

B. ANALYTICAL MONITORING

1. Initial Full Appendix II Scan – Within 30 days of the adoption of this Order, all groundwater monitoring points where a full Appendix II scan has not been performed within the last five years must be sampled and analyzed for the presence or absence of all Appendix II constituents that are not yet on the Landfill's monitoring parameter (MPar) list. Such sampling shall also be performed at any new groundwater monitoring well within 30 days of its installation. For any Appendix II constituent detected in the scan that is not yet on the Landfill's MPar list, the Discharger shall resample for that constituent,

within 30 days, at all monitoring points where the constituent(s) was detected. Any Appendix II constituent that is detected and confirmed at one or more groundwater monitoring points becomes a new constituent of concern (COC) for the Landfill and shall be added to the Landfill's MPar list, pursuant to 40 CFR 258.55(b-d).

2. COC List — As of the date of this M&RP, the COC list for the Landfill consists of all those constituents listed in Table T-2 below. In addition, at any subsequent time, the COC list shall include: all Appendix II constituents detected and verified in the initial scan under Sections II.B.1. and all Appendix II constituents that have been detected and affirmed in the leachate scan required by this M&RP. The Discharger shall notify Regional Board staff of any such new addition to the COC list immediately, via phone, fax, or e-mail, shall note it in the operating record within 14 days of the verification, and shall note prominently the constituent(s) added to the COC list in the next scheduled monitoring report.

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Table T- 2 Current Constituents of Concern at the Landfill

Monitoring Parameters		Supplemental Parameters	Other COCs
Indicator Parameters			
Inorganic Parameters: Alkalinity, total Ammonia, nitrogen Chemical oxygen demand (COD) Chloride Potassium, total Total dissolved solids (TDS) Total organic carbon (TOC) Appendix I VOCs: 1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,3-Trichloropropane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,4-Dichlorobenzene 2-Butanone 2-Hexanone 4-Methyl-2-Pentanone Acetone Acrylonitrile Benzene	Bromochloromethane Bromodichloromethane Bromoform Bromomethane c-1,2-Dichloroethene c-1,3-Dichloropropene Carbon Disulfide Carbon Tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane Dibromomethane Dichlorodifluoromethane Ethylbenzene Iodomethane Methylene chloride o-Xylene p/m-Xylene Styrene t-1,2-Dichloroethene t-1,3-Dichloropropene t-1,4-Dichloro-2-Butene Tetrachloroethene Toluene Trichloroethene Trichlorofluoromethane Vinyl Acetate Vinyl Chloride Other Organics: Dichlorodifluoromethane (DCDFM) Methyl tertiary butyl ether (MTBE) 1,4-Dioxane	Bicarbonate (as CaCO ₃) Boron, total Bromide Calcium, total Carbon dioxide, lab Fluoride Iron, total Magnesium, total Manganese, total Nitrate-N pH, field Sodium, total Sulfate Sulfide Specific conductance, field Temperature, field Turbidity, field	Metals: Antimony Arsenic Barium Beryllium Chromium, total Cobalt Copper Lead Mercury Nickel Selenium Silver Thallium Vanadium Zinc Emergent Chemicals not already listed: Per chlorate N-Nitrosodimethylamine (NDMA) Polybrominated Diphenyl Ethers (PBDE) Hexavalent Chromium Pharmaceutical and Personal Care Products (PPCPs) Any other pollutants that are detected and confirmed in landfill leachate

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3. Monitoring Parameters (MPars): Current groundwater MPars at the Landfill are described below:
 - a. Indicator Parameters, including all inorganic indicator parameters, and Appendix I VOCs listed in Table T-2, as well as methyl tertiary butyl ether (MTBE), and 1,4-Dioxane. These constituents are considered capable of providing reliable indication of a release from the Landfill. The Discharger shall apply the statistical analyses described in Section II.B.8. or nonstatistical analysis in Section II.B.9. of this M&RP to analyze all groundwater monitoring data obtained under this program
 - b. Supplemental Parameters are inorganic constituents that provide important information regarding groundwater geochemistry but are not expected to show significant variation in groundwater in the event of a Landfill release. Monitoring data for the Supplemental Parameters will generally be used for informational purposes only and will not be subjected to routine statistical analysis.
 - c. Other COCs: These include trace metals and any other pollutants that have been detected and confirmed to be in leachate from the Landfill.
4. Ongoing Background Well Testing - The Discharger shall continue to monitor background wells for each MPar and COC each time that MPar or COC is monitored at down gradient wells. Water quality data obtained from background wells shall be processed and reported the same way as detection monitoring wells. The Discharger shall follow the requirements in Section I.C.2. of this M&RP in response to the detection of any VOCs at any background well at the site.
5. Water Quality Protection Standard (WQPS) - In accordance with 27 CCR section 20390, WQPS for the ARL Landfill is established as the natural background groundwater quality at the site, which is set to either the statistically predicted value (if the constituent naturally exists) or the laboratory detection limit (if the constituent does not naturally exist in the water).
6. Development and Updating of Concentration Limits – The Discharger shall continue to develop and update concentration limits following the procedures provided in Section III.B.8.a. of this M&RP. The Discharger shall review concentration limits biannually in its annual reports submitted to the Regional Board. When appropriate, new concentration limits shall be proposed.
7. Groundwater Quality Monitoring – The Discharger shall conduct the following groundwater monitoring activities at the Landfill:
 - a. Quarterly Monitoring shall be conducted at all groundwater monitoring wells. Water samples from these monitoring points shall be analyzed for all indicator parameters on a quarterly basis and all supplemental parameters on a quarterly basis;
 - b. Five-Yearly COC Scan - Every five years, starting in 2009, the Discharger shall analyze a sample from each ground water monitoring point for the detectable presence (including trace determinations) of all COCs that are not yet on the monitoring parameter list. This constitutes the means by which the Discharger continues to meet the requirements of 40 CFR 258.55(b)-(d).

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- i. During each such COC scanning event, the Discharger shall obtain and analyze a minimum of one sample from each monitoring well (sufficient to obtain a datum for each COC that is subject to the scan). Upon detecting (including trace value) a COC that is not yet on the MPar list, the Discharger shall, within 30 days, take a single resample from the indicating affected well(s) and reanalyze it only for the newly-detected constituent(s).
 - ii. Any COC detected in samples collected from a groundwater monitoring well, and verified by a retest, automatically becomes part of the MPar list for the facility. This constitutes the means by which the Discharger shall meet the requirements of 40 CFR 258.55(d)(2).
- 8. Concentration Limits and the Analysis of Monitoring Data - All well/COC pair testing for the landfill use the "interwell comparison" approach whereby the concentration limit (reference background data set) is derived from an appropriate background well, which data is compared against a recent datum from a compliance well (which well stands along the travel path that a release would take).
 - a. Moving Window Concentration Limits — The basis for any statistical or nonstatistical detection mode test for a well/MPar pair (to identify a waste release indication for that MPar at that well) is the pair's respective background reference data set (concentration limit). For any well/UCOC pair, during a UCOC scan of compliance wells, the 85th percentile of the well/UCOC pair's concentration limit data serves as a reference concentration which, if exceeded in the initial scan and the single retest, causes the UCOC to be monitored, thereafter, as an MPar at all compliance wells. Thus, all COCs (whether they are an MPar or a UCOC) must have a concentration limit.
 - i. Moving Window Concentration Limits for Extant COCs — For all COCs that are on MPar and UCOC Lists as of the effective date of Order No. R4-2009-0XXX, its respective concentration limit, as of that adoption date, consists of all validated data from the proposed up gradient background well for that MPar from the period 1995 through 2002, and that initial background data set shall be updated continually, as follows. Each Reporting Period thereafter, the new background data point (from that background well for that MPar) shall replace the oldest datum. The Discharger shall report the updated background data set, for each such well/COC pair, in each Annual Summary Monitoring Report, as an updated replacement for the listing shown in Appendix 1 of this M&RP. Likewise, the Annual Summary Monitoring Report shall present a listing consisting of a detailed listing of the data analysis method used for each well/MPar pair, as an updated replacement for the information presented in Appendix 2 of this M&RP.
 - ii. Concentration Limits for New COCs — For any non-COC Appendix II constituent that is identified at any concentration above its respective PQL in the initial sample of the annual leachate scan and that exceeds its PQL in the subsequent mid-Reporting-Period (pass-1-of-2 approach) retest becomes a new COC for the Landfill. For any such new COC, whether it is a new MPar or a new UCOC, the Discharger shall sample all background wells each Reporting Period at least once, thereafter, and shall add the new background datum (from a given

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background well) to the concentration limit for that COC at each compliance well until adding each such new background datum to the constituent's concentration limit at each compliance well that derives its background data set (concentration limit) from that background well. Note that this means that the UCOCs will be sampled at each background well each Reporting Period even in Reporting Periods for which there is no UCOC scan. This concentration limit expansion shall continue until the concentration limit "sample size" (i.e., the number of data points) equals 28, at which point the concentration limit for that COC at each compliance well shall be handled (from then onward), instead, as described in ¶II.B.8.a.i.

- iii. Concentration Limits at a New Compliance Well — Any time the Discharger installs, or the Regional Water Board Executive Officer requires the Discharger to install, a new compliance well, the Discharger shall follow the concentration limit development approach described in ¶II.B.8.a.ii for all COCs, but shall carry out the quarterly background sampling only at the existing-or-new background well the Regional Water Board Executive Officer determines is applicable to that new compliance well.
- b. Statistical Methods — Well/MPar pairs having a concentration limit (background data set) for which the data exceed the constituent's respective Method Detection Limit (MDL) in 10% or more of the background data to date shall use the most appropriate of the following statistical methods, under a pass-1-of-3 retesting approach: parametric upper prediction limit (UPL) using Normal or transform-Normal data; or, especially for a background data set with from 16% to 75% non-detect (ND) values, shall use a Gamma UPL statistical method (ask your Regional Water Board contact to direct you to the papers: Gibbons and Bhaumik, 2006; and Bhaumik and Gibbons, 2006). For any well/MPar pair for which its concentration limit contains trace determinations, the Discharger shall substitute for each such determination its estimated concentration (often called its "J-value") and proceed with applying the statistical method. If, after making this J-value substitution, the concentration limit data set contains 76% to 90% "ND" values, the Discharger shall propose and substantiate a suitable statistical data analysis method (under a pass-1-of-3 retesting approach) or nonstatistical data analysis method (under a pass-1-of-2 retesting approach) for approval by delegated Regional Water Board staff. By the end of the first Reporting Period following adoption of Order No. R4-2009-0XXX, the Discharger shall submit, as part of the monitoring report for that Reporting Period, a derived statistical power curve for each detection mode well/MPar pair that uses the parametric UPL method which power curve shall demonstrate that the method beats the USEPA's Reference Power Curve, given the background sample size (number of data points in the concentration limit), the transformation formula applied (if any), the method settings (e.g., an error rate {alpha} less than 0.01), and the pass-1-of-3 retesting approach the Discharger is applying to the analysis of that detection mode well/MPar pair.
- c. Nonstatistical Method — For all non-VOC MPars in detection mode whose respective concentration limit exceeds its respective MDL in less than 10% of that background data, and for all VOCs in detection mode, the Discharger shall apply the California Nonstatistical Data Analysis Method (CNSDAM) described in Appendix 4 of this M&RP. That method tests all qualifying constituents in one test at any given MPt.

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- d. Mode-Based Water Quality Monitoring Approaches — The monitoring approach used for each monitoring parameter at each MPt well (well/MPar pair) shall be controlled by its respective compliance status mode (mode), as follows:
- i. Detection Mode —Any well/MPar pair that has not produced a measurably significant increase is in “detection mode.” The purpose of monitoring in detection mode, for that well/MPar pair, is to watch for the MPar's arrival at that well at a concentration strong enough to trigger a measurably significant release-detection indication using an appropriate statistical or nonstatistical data analysis method. Given a measurably significant indication (including retesting), the well/MPar pair automatically switches to “tracking mode,” and the Discharger provides the appropriate response under ¶I.C.4;
 - ii. Tracking Mode —A well/MPar pair that has produced a measurably significant increase moves from detection mode to tracking mode. The purpose of the tracking mode monitoring is to verify the suitability and effectiveness of the existing corrective action measures (CAMs) by tracking changes in the MPar's concentration at that location via an evolving concentration-versus-time plot (new background data points and new compliance data points each go to their respective graph on that plot). These plots are used in the Annual CAMs Effectiveness Analysis that is included in the annual summary monitoring report (see ¶I.B.2). Any time that all of the newest compliance data points for that well/MPar pair, covering two consecutive Reporting Periods, plot at-or-below the then-current background mean concentration line, the well/MPar pair switches automatically to Phase 1 proof mode, given that there is a good likelihood that it has returned to compliance with its respective concentration limit, and the Discharger reports this to the Regional Water Board contact immediately, declares it prominently in the monitoring report for that Reporting Period, and includes discussion of the change in the Annual CAMs Effectiveness Analysis; or
 - i. iii. Phase 1 Proof Mode — For a well/MPar pair in Phase 1 proof mode, the monitoring goal is to continue tracking the pair's apparent return to compliance with its respective concentration limit. As such, the Discharger continues to plot new compliance and background data points on the well/MPar pair's concentration-versus-time plot, just as is done under tracking mode. For any well/MPar pair in Phase 1 proof mode, the Discharger shall discuss the pair's ongoing apparent state of compliance, by reference to where the most recent data points have plotted, relative to the background mean concentration, in the Annual CAM Effectiveness Analysis (see ¶I.B.2).
9. California Nonstatistical Data Analysis Method (CNSDAM)
- a. Non-Statistical Method for Detection Mode for MPars Seldom Found in Background - For any given compliance (downgradient) well, regardless of the monitoring program (DMP, EMP, AMP, or CAP), the Discharger shall use this data analysis method, jointly, for all constituents on the “scope list” in Section II.B.9.a.i. of this M&RP (or, for each retest sample, the modified scope list of Section II.B.9.b.ii.

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- 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 MPar, at that well, that exceeds its MDL in less than 10% of its background data.
 - ii. Two Triggers - From the scope list made under Section II.B.9.a.i. above, for an initial test (or, for a retest, the modified scope list under Section II.B.9.b.ii. below), the Discharger shall identify each MPar in the current sample from that well that exceeds either its respective MDL or PQL. The Discharger shall conclude that these exceeding MPars 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 MPars on a monitoring well’s scope list exceed their respective MDL; or
 - (b) At least one of the MPars on a monitoring well’s scope list equals or exceeds its respective PQL.
- b. Discrete Retest [27 CCR § 20415(e)(8)(E)]:
- i. In the event that the Discharger concludes (pursuant to Section II.B.9.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 (re-test) 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 Section II.B.9.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 Section II.B.9.a.ii above, but using this modified scope list) to separately analyze each of the two suites of retest data at that compliance well.
 - iii. If either (or both) of the retest samples trips either (or both) of the triggers under Section II.B.9.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.
10. Groundwater Flow Direction – the Discharger shall measure the water level in each well at least quarterly and determine the presence of horizontal and vertical gradients and groundwater flow rate and direction of the groundwater..
11. Leachate Monitoring – The Discharger shall conduct leachate monitoring at all leachate collection sumps, including a one-time analysis of leachate from Zone 1, at the Landfill as follows:

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- a. Annual Appendix II Constituent Scan - Leachate samples shall be taken at each leachate sump each year during the month of October. The samples shall be analyzed for all those Appendix II constituents in 40 CFR, Part 258 that are not already a COC for the Landfill.
 - b. Pass-1-of-2 Retest - If any non-COC constituent is detected in the leachate sampling event at-or-above its respective PQL concentration at any leachate sump sampled, the Discharger shall resample that indicating leachate sump three months later and analyze the leachate sample for those detected constituents only. If any such constituent exceeds its respective PQL in both the initial and retest leachate sample, the constituent becomes a COC for the Landfill and the Discharger shall report this to the Regional Board within two weeks of the confirmation. For any such new COC, the Discharger shall follow ¶II.B.5.a.ii to develop its initial concentration limit at each MPt well.
 - c. Reporting - Leachate monitoring results shall be included in the quarterly and annual report that covers the period during which the monitoring is conducted..
12. Vadose Zone Monitoring – The Discharger shall include in each semi-annual monitoring report all the monthly gas probe monitoring results conducted during that Reporting Period in accordance with South Coast Air Quality Management District Rule 1150.1 I shall include:
 13. Surface Water Monitoring – Surface water monitoring is not required in this M&RP because runoffs at the site are monitored under the General NPDES Stormwater Permit and the M&RP for the Landfill (CI-2567).
 14. Water Used on Site for Irrigation and Dust Control: The Discharger shall record the amount of water used on site for the purposes of irrigation and dust control from each source on a monthly basis. Each water source, other than potable water, shall be sampled quarterly and analyzed for pH, heavy metals, nitrate, and VOCs.

C. SITE INSPECTIONS

The Discharger shall inspect the Landfill in accordance with the following schedule, and record, at a minimum, standard observations.

1. 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.
2. During the dry season, a minimum of one inspection shall be performed every three months.
3. Standard Observations during a site inspection shall include at least the following:
 - a. Evidence of any surface water leaving or entering the waste management unit, estimated size of affected area, and estimated flow rate (show affected area on map).

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- b. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
- c. Evidence of erosion and/or of exposed refuse.
- d. Inspection of all storm water discharge locations for evidence of non-storm water discharges during dry seasons, and integrity during wet seasons.
- e. Evidence of ponded water at any point on the waste management facility (show affected area on map).
- f. Compliance with the Storm water Pollution Prevention Plan, insuring that the terms of the General NPDES Storm water Permit are properly implemented.
- g. Integrity of all drainage systems.

PART III: SAMPLING AND ANALYTICAL PROCEDURES

A. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA publication "SW-846"), and in accordance with a sampling and analysis plan acceptable to the Executive Officer. A State of California approved laboratory shall perform water analysis. Specific methods of analysis must be identified. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Regional Board. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from all Monitoring Points meets the following restrictions:

The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For any COC or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., Trace) in historical data for that medium, the SW-846 analytical method having the lowest Method Detection Limit (MDL) shall be selected.

- 2. Report J-Values — Each trace result (i.e., the concentration falls between the constituent's MDL and its Practical Quantitation Limit (PQL)) shall be reported as an estimated concentration (e.g., concentration is in parentheses and it is flagged as a "J-value"). Thus, for the purposes of analyses made for either of these landfills, the "reporting limit" is the constituent's MDL.
- 3. MDL and PQL shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.

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4. For each COC (MPar or UCOC) addressed during a given reporting period, the Discharger shall include in the monitoring report a listing of the prevailing MDL and PQL for that COC, together with an indication as to whether the MDL, PQL, or both have changed since the prior reporting period. The Discharger shall require the analytical laboratory to report censored data (trace level and non-detect determinations). In the event that an MPar's MDL and/or PQL change, the Discharger shall highlight that change in the report's summary and the report shall include an explanation for the change that is written and signed by the owner/director of the analytical laboratory.
 5. Quality assurance and quality control (QA/QC) data shall be reported along with the sample results to which it applies. The main sample result for a given analyte shall be reported unadjusted for blank results or spike recovery, but the "alt. value" column can show what the laboratory estimates to be the constituent's true concentration, if flagged accordingly. The QA/QC data submittal shall include:
 - a. The method, equipment, and analytical detection limits.
 - b. The recovery rates, including an explanation for any recovery rate that is outside the USEPA-specified recovery rate.
 - c. The results of equipment and method blanks.
 - d. The results of spiked and surrogate samples.
 - e. The frequency of quality control analysis.
 - f. The name and qualifications of the person(s) performing the analyses.
 6. QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.
 7. Non-targeted chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When significant unknown peaks are encountered, second column or second method confirmation procedures shall be performed in an attempt to identify and more accurately quantify the unknown analyte(s).
- B. RECORDS TO BE MAINTAINED**
- Analytical records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. The period of retention shall be extended during the course of any unresolved litigation or when directed by the Executive Officer. Such records shall show the following for each sample:
1. Identity of sample and the actual Monitoring Point designation from which it was taken, along with the identity of the individual who obtained the sample.
 2. Date and time of sampling.
 3. Date and time that analyses were started and completed, and the name of personnel performing each analysis.

**Monitoring and Reporting Program
Waste Management Incorporated
Azusa Land Reclamation Landfill**

No. CI-2567

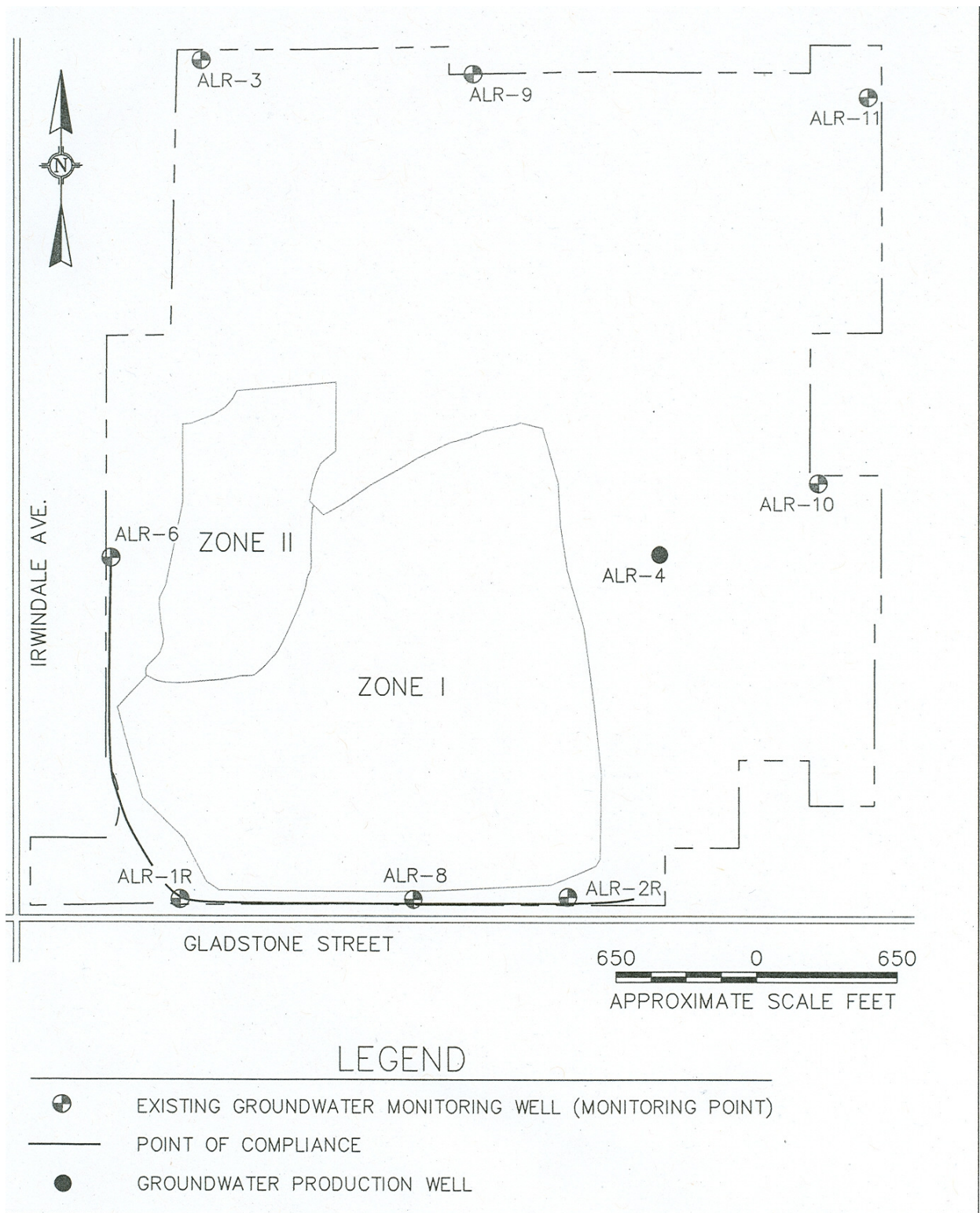
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Results of analyses, and Method Detection Limit and Practical Quantitation Limit for each analysis.

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 Quality Control Board, Los Angeles Region.

ORDERED BY: _____
Tracy J. Egoscue
Executive Officer

DATE: July 16, 2009

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