CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION

PUBLIC REVIEW DRAFT
MONITORING AND REPORTING PROGRAM
ORDER NO. R1-2027-0002
FOR THE CITY OF UKIAH
CLOSURE AND POST-CLOSURE MAINTENANCE
UKIAH SOLID WASTE DISPOSAL SITE
WDID No. 1B75043OMEN, Mendocino County

I. INTRODUCTION

The City of Ukiah (City or Discharger) owns, operates, and maintains the inactive Ukiah Solid Waste Disposal Site (Site). The Discharger shall maintain water quality monitoring systems appropriate for detection monitoring and corrective action monitoring that comply with California Code of Regulations (CCR), title 27, division 2, subdivision 1, chapter 3, subchapter 3, and any other applicable provisions.

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code section 13267(b) and requires monitoring and submission of technical reports necessitated by the fact that the Site is a solid waste disposal site. The objective of monitoring conducted under this MRP is to provide the Discharger and the North Coast Regional Water Quality Control Board (North Coast Water Board) with information concerning groundwater, surface water, and leachate quality and whether the Site's waste management unit (WMU) is responsible for any impacts to that quality; the status of waste containment measures; the status of corrective action measures; and the status of compliance with CCR, title 27. The burden, including costs, of these reports bears a reasonable relationship to the need for the reports and the benefits to be obtained from them.

Compliance with this MRP is ordered by Waste Discharge Requirements (WDRs) Order No. R1-2027-0002. Failure to comply with this MRP constitutes noncompliance with the WDRs and with the Water Code, and may result in the imposition of administrative civil liability of up to $1,000 per day pursuant to Water Code section 13268. Furnishing false information is a misdemeanor.

This MRP supersedes Monitoring and Reporting Program No. R1-2002-0061 upon the effective date of Order No. R1-2027-0002. This MRP will be updated for per- and polyfluoroalkyl substances (PFAS) monitoring and reporting upon adoption of the PFAS general order for closed municipal solid waste landfill sites currently under development by the North Coast Water Board.

II. ELECTRONIC SUBMITTAL OF INFORMATION

A. All monitoring data required by this MRP shall be submitted electronically to the State Water Resources Control Board's (State Water Board) GeoTracker database in accordance with the Electronic Submittal of Information requirements described in the State Water Board's Policy for Electronic Submittal of Information (Resolution 2023-0059 or any subsequent revision) and as required by CCR, title 23, division 3, chapter 30.

B. The Discharger shall submit a copy of each monitoring report in electronic format, with transmittal letter, text, tables, figures, laboratory analytical data, and appendices in Portable Document Format as a single file, and shall notify the assigned North Coast Water Board staff of the upload by email.

C. The Discharger is responsible for ensuring that all electronic submissions are complete, accurate, and submitted by the applicable deadlines. If a data submission is rejected by GeoTracker, the Discharger shall correct and resubmit the data within 14 days of notification of the rejection.

III. MONITORING REQUIREMENTS

Part I — Monitoring and Observation Schedule

A. Groundwater Monitoring

1. Monitoring Network. The groundwater monitoring network consists of the monitoring points designated in Table 1. Monitoring wells 90-8 and 92-4 are removed from the monitoring network upon the effective date of this MRP, based on their position outside the WMU watershed, the absence of hydraulic communication with groundwater underlying the WMU, and the attribution of BTEX detected at both wells to a natural thermogenic source. The supporting hydrogeologic, isotopic, hydrochemical, and soil-gas evidence is set out in Attachment G to the WDRs at paragraphs F.12 through F.14 and I.7 through I.8; the removal of 92-4 from the corrective action monitoring program is addressed at paragraph I.13. Monitoring point locations are shown on Attachment C to the WDRs.

Table A: Groundwater Monitoring Network Designations

Designation	Monitoring Wells
Detection monitoring — alluvial deposits	87-1, 90-1, 94-1
Detection monitoring — continental basin deposits	90-2, 90-5, 90-6, 92-2, 92-3, 94-2, 96-1, 96-2, 96-3
Corrective action monitoring — alluvial deposits	90-3, 90-4, 92-1
Corrective action monitoring — continental basin deposits	90-7
Point of compliance — alluvial deposits	87-1, 90-3, 90-4
Point of compliance — continental basin deposits	90-2, 90-5, 90-7

2. Water Level Measurements. Groundwater surface elevation, in feet and hundredths relative to mean sea level, shall be measured in all monitoring wells semi-annually and used to determine the velocity and direction of groundwater flow in each monitored water-bearing unit. Measurements shall be taken prior to purging and sampling. Elevations for all wells within a given water-bearing unit shall be measured within a period short enough to avoid temporal variations that would preclude accurate determination of gradient and direction. Semi-annual measurement covers

the times of expected highest and lowest water levels for the respective water-bearing units, consistent with CCR, title 27, section 20415(e)(15).

3. Siltation. The amount of siltation in each monitoring well shall be measured as needed during routine sampling. Siltation data shall be used to make recommendations for well maintenance or replacement. Any monitoring well that is no longer operational or is damaged shall be replaced, and additional monitoring wells shall be added to the program as needed.

4. Groundwater Sampling. Samples shall be collected from the monitoring points designated in Table 1 and analyzed for the parameters and at the frequencies in Table 2.

Table B: Groundwater Monitoring Program

Parameter	Units	Frequency
Groundwater elevation †	ft./tenths TOC [1]	Semi-annual
pH (field) †	pH units	Quarterly [2] / Semi-annual
Specific conductance †	µmhos/cm	Quarterly [2] / Semi-annual
Temperature †	°C	Quarterly [2] / Semi-annual
Turbidity †	turbidity units	Quarterly [2] / Semi-annual
Siltation in well casing †	ft./tenths	As needed
Total dissolved solids ‡	mg/L	Quarterly [2] / Semi-annual
Bicarbonate alkalinity ‡	mg/L	Quarterly [2] / Semi-annual
Carbonate alkalinity ‡	mg/L	Quarterly [2] / Semi-annual
Chloride ‡	mg/L	Quarterly [2] / Semi-annual
Sulfate ‡	mg/L	Quarterly [2] / Semi-annual
Nitrate as nitrogen ‡	mg/L	Quarterly [2] / Semi-annual
Total ammonia ‡	mg/L	Quarterly [2] / Semi-annual
Manganese (dissolved) ‡	µg/L	Quarterly [2] / Semi-annual
Boron (dissolved) ‡	µg/L	Quarterly [2] / Semi-annual
Volatile organic compounds ‡	µg/L	Quarterly [2] / Semi-annual
Total petroleum hydrocarbons ‡ [3]	mg/L	Quarterly [2] / Semi-annual
Extractable oil and grease ‡	mg/L	Annually
Inorganics (dissolved) §	µg/L	Every five years

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Parameter	Units	Frequency
Semi-volatile organic compounds §	µg/L	Every five years
Chlorophenoxy herbicides §	µg/L	Every five years
Organophosphorus pesticides §	µg/L	Every five years
Polychlorinated biphenyls §	µg/L	Every five years
Organochlorine pesticides §	µg/L	Every five years

[1] TOC: top of casing.

[2] Quarterly frequency applies to monitoring wells 87-1, 90-2, 94-2, 96-1, and 96-3, which are situated between the WMU and downgradient off-site receptors. All other wells are sampled semi-annually. All results are reported semi-annually.

[3] Reported in gasoline (GRO), diesel (DRO), and motor oil (HRO) ranges.

† Field parameter. ‡ Monitoring parameter (see Attachment 1). § Constituent of concern (see Attachment 1).

B. Surface Water Monitoring

1. Monitoring Points. Surface water monitoring points S-1 and S-2 are located on the unnamed ephemeral creek as shown on Attachment C to the WDRs. S-1 is upstream of the WMU and S-2 is downstream. Because the final cover is an engineered alternative that may increase runoff relative to a traditional vegetative cover, S-2 shall also be used to visually evaluate and monitor for indications of erosion and sand ballast transport from the WMU, and observation logs shall be prepared at the frequency shown in Table 3 for erosion.
2. Rainfall. Daily rainfall shall be measured at an on-site gauge or at the nearest National Oceanic and Atmospheric Administration (NOAA) weather station and reported in tabular form in each semi-annual monitoring report.
3. Sampling Schedule. Surface water samples shall be collected during the first quarter and the fourth quarter of each calendar year, when flow is present, and analyzed for the parameters in Table 3.

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Table C: Surface Water Monitoring Program

Parameter	Units	Frequency
pH †	pH units	Semi-annual
Specific conductance †	µmhos/cm	Semi-annual
Temperature †	°C	Semi-annual
Turbidity †	turbidity units	Semi-annual [1]
Rainfall †	inches	Daily
Erosion †	visual scour	Semi-annual
Total dissolved solids ‡	mg/L	Semi-annual
Chloride ‡	mg/L	Semi-annual
Sulfate ‡	mg/L	Semi-annual
Total nitrogen ‡	mg/L	Semi-annual
Total ammonia ‡	mg/L	Semi-annual
Un-ionized ammonia (calculated) ‡	mg/L	Semi-annual
Chemical oxygen demand ‡	mg/L	Semi-annual
Total suspended solids ‡	mg/L	Semi-annual [1]
Total settleable solids ‡	mL/L	Semi-annual
Extractable oil and grease ‡	mg/L	Annually
Constituents of concern §	µg/L	After a verified release [2]

[1] Turbidity and total suspended solids may be substituted for each other depending on which method is more readily available.

[2] Sampling shall take place during the next flow event following a verified measurably significant release to surface water. Verification shall be determined according to CCR, title 27, section 20420(j).

† Field parameter. ‡ Monitoring parameter (see Attachment 1). § Constituent of concern (see Attachment 1).

C. Leachate Monitoring

1. Monitoring Points. Leachate samples shall be collected from the leachate wet well as shown on Attachment C to the WDRs. Leachate levels shall be monitored semi-annually at leachate monitoring wells LW-1, LW-2, and LW-3. If additional leachate samples are collected at the request of the receiving wastewater treatment plant, those results shall also be reported to the North Coast Water Board.
2. Leachate Volume. The volume of leachate disposed since the previous monitoring report shall be recorded monthly and reported in each semi-annual monitoring report. Closure construction backfills the emergency leachate pond and installs an

underground storage tank for overflow protection, so that after closure the lift station totalizer records leachate only. Each Annual Report shall compare annual leachate generation volume against the pre-closure baseline, as required by Part IV, Section C.h.

3. Leachate Seeps. Any leachate seep located during inspection shall be reported to North Coast Water Board staff within 24 hours by telephone or email, and shall be sampled as soon as possible and no more than seven days after discovery. Seep samples shall be analyzed for the parameters listed in Table 4 at the first occurrence and weekly thereafter until the seep is corrected and ceases to discharge. If a seep is determined to contain leachate, the Discharger shall abate the discharge.

4. Sampling Schedule. Leachate wet well samples shall be collected and analyzed for the parameters in Table 4 twice each year: once during the wet season, between December 1 and March 31, and once during the dry season, between August 1 and October 31. Sampling on a wet-season and dry-season schedule is required because leachate concentrations vary with flow, and because the final cover is expected to reduce the rainfall contribution to leachate over the post-closure maintenance period. Each result shall be reported together with the leachate disposal volume for the corresponding period so that concentrations can be evaluated against flow. If the wet well cannot be sampled in either window, the Discharger shall document the condition that prevented sampling and collect the sample as soon as conditions allow.

Table D: Leachate Monitoring Program

Parameter	Units	Frequency[1]
Leachate elevation †	ft./tenths TOC	Semi-annual [2]
Disposal volume †	gallons	Monthly / reported semi-annually
pH †	pH units	Semi-annual [4]
Specific conductance †	µmhos/cm	Semi-annual [4]
Temperature †	°C	Semi-annual [4]
Total dissolved solids ‡	mg/L	Semi-annual [4]
Bicarbonate alkalinity ‡	mg/L	Semi-annual [4]
Carbonate alkalinity ‡	mg/L	Semi-annual [4]
Chloride ‡	mg/L	Semi-annual [4]
Sulfate ‡	mg/L	Semi-annual [4]
Nitrate as nitrogen ‡	mg/L	Semi-annual [4]
Total ammonia ‡	mg/L	Semi-annual [4]

Parameter	Units	Frequency[1]
Biochemical oxygen demand ‡	mg/L	Semi-annual [4]
Chemical oxygen demand ‡	mg/L	Semi-annual [4]
Volatile organic compounds ‡	µg/L	Semi-annual [4]
Total petroleum hydrocarbons ‡ [3]	mg/L	Semi-annual [4]
Extractable oil and grease ‡	mg/L	Semi-annual [4]
Inorganics (dissolved) §	µg/L	Every five years
Semi-volatile organic compounds §	µg/L	Every five years
Chlorophenoxy herbicides §	µg/L	Every five years
Organophosphorus pesticides §	µg/L	Every five years
Polychlorinated biphenyls §	µg/L	Every five years

[1] Frequency shown applies to the leachate wet well. Leachate seep samples shall be analyzed for the annual leachate constituents as provided in Part I, Section C.3.

[2] Measured at leachate monitoring wells LW-1, LW-2, and LW-3.

[3] Reported in gasoline (GRO), diesel (DRO), and motor oil (HRO) ranges.

† Field parameter. ‡ Monitoring parameter (see Attachment 1). § Constituent of concern (see Attachment 1).

D. Landfill Gas Monitoring

1. Regulatory Framework. Landfill gas at the Site is regulated under two programs administered by other agencies. Perimeter landfill gas monitoring is governed by CCR, title 27, sections 20921 and 20933 and by the Solid Waste Facility Permit issued by the Mendocino County Local Enforcement Agency and the California Department of Resources Recycling and Recovery (CalRecycle), which are the lead agencies for that program. Methane emissions from the landfill surface, and the performance of the landfill gas collection and control system, are governed by the California Air Resources Board Landfill Methane Regulation, CCR, title 17, sections 95460 through 95476, enforced by the Air Resources Board and the Mendocino County Air Quality Management District. This MRP imposes no separate or additional landfill gas monitoring requirements; the provisions below require reporting to the North Coast Water Board of monitoring conducted under those programs.
2. Perimeter Monitoring. Consistent with MRP No. R1-2002-0061, the Discharger shall conduct quarterly landfill gas monitoring of perimeter monitoring points GAS-1 through GAS-10, including all monitoring probes at each point, in accordance with the Solid Waste Facility Permit and CCR, title 27, sections 20921 and 20933.

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3. Quarterly Reports. The Discharger shall submit quarterly landfill gas monitoring reports to the North Coast Water Board concurrently with submittal to the Local Enforcement Agency and CalRecycle.

4. Annual Summary. The results of the perimeter landfill gas monitoring program for the reporting year, including the status of any unresolved exceedance of the regulatory compliance level and the status of any pending remediation work plan, shall be summarized in the Annual Report required by Part IV of this MRP. The summary shall also identify the status of any unresolved surface emissions exceedance reported under the Landfill Methane Regulation.

5. Gas Collection and Control System. Upon commissioning of the full-scale landfill gas collection and control system, the Discharger shall report the operating status of the system in each semi-annual monitoring report, and shall manage and report the disposition of landfill gas condensate in accordance with the WDRs. Condensate is a waste subject to the WDRs; monitoring of the gas collection and control system itself remains within the programs identified in Section D.1.

E. Inspections and Standard Observations

1. Standard observations shall be performed monthly during the wet season (October 1 through April 30) and quarterly during the dry season (May 1 through September 30). Standard observations shall also be performed following any Major Storm Event.

2. For purposes of this MRP, a Major Storm Event is any rainfall event that exceeds the 2-year, 24-hour probabilistic rainfall depth for the Site as published by the NOAA Precipitation Frequency Data Server. That depth is 3.5 inches as of the effective date of this MRP. The Discharger shall inspect the Site within 72 hours following a Major Storm Event, or as soon thereafter as the Site is safely accessible.

3. Post-Construction Inspections. During the first two wet seasons following Executive Officer approval of the certification of closure, the Discharger shall perform inspections of the final cover, drainage control facilities, and sand infill ballast distribution once every two weeks during the period October 1 through April 30, in addition to the standard observations required by Section E.1 and the Major Storm Event inspections required by Section E.2. These inspections do not require performance by a registered professional.

4. Standard observations shall include: condition of the WMU cover, including any exposed turf, exposed geomembrane, and whether storm water drainage ditches and sedimentation basins contain sand infill ballast or liquids; condition of drainage facilities; condition of sedimentation basins; presence of leachate seeps, including estimates of seep size and flow; presence of odors; evidence of ponding; evidence of erosion or potential erosion; slope failures or potential slope failures; differential settlement; inspection of storm water discharge locations for evidence of non-storm water discharges; evidence of floating or suspended material or plastics, including plastic fibers or microfibers from the engineered turf; discoloration or turbidity in the receiving waters; presence of odors in the receiving waters; condition of monitoring wells, including caps, locks, surface seals, and protective casings; condition of access roads; evidence of unauthorized access or dumping; other problems that could affect compliance with the WDRs; and weather conditions during the observations and precipitation during the preceding five days.

5. Each monitoring report shall include a summary and certification of completion of all standard observations for the entire facility, including the WMU, the perimeter of the WMU, and the receiving waters, together with the standard observation logs and the name of the person performing the observations.

6. Annual Settlement Observation. Annually, at the time when ponding is most likely to be present, the Discharger shall inspect and note any areas of differential settlement warranting future observation or repair. After repairs are made during drier weather, the Discharger shall survey the revised surface of the repair and outline the repaired areas on the as-built drawings or the most recent iso-settlement map, showing updated contours. If no areas of settlement are found, the Discharger shall so state. This information shall be included in the Annual Report, and the notation and delineation shall be made by or under the supervision of a California registered civil engineer or registered geologist.

7. Five-Year Iso-Settlement Map. The Discharger shall produce an iso-settlement map of the WMU footprint and submit it with the Annual Report five years following Executive Officer approval of the certification of closure, and every five years thereafter, until the Executive Officer determines that differential settlement is unlikely to be of such magnitude as to impair the WMU's containment features or the free drainage of surface flow. If replacement of the engineered turf is required and completed, a new as-built elevation contour map shall be submitted and the next iso-settlement map shall be due five years after the replacement. The iso-settlement map shall: accurately depict the estimated total change in elevation of the final cover surface; show total lowering of the surface elevation relative to the baseline topographic map submitted in the Final Closure Certification Report, indicating all areas of visually noticeable differential settlement; be drawn to the same scale and contour interval as that baseline map, with overprinted isopleths indicating total settlement to date; and be prepared by or under the direction of a California registered civil engineer or certified engineering geologist and be stamped and signed. Land surveying may be substituted for aerial surveying.

Part II — Sample Collection and Analysis

A. For any given monitored medium, samples taken from all monitoring points to satisfy the data analysis requirements for a given reporting period shall be taken within a span not to exceed 15 days, unless a longer period is approved by the Executive Officer, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

B. Sample collection, storage, and analysis shall be performed in accordance with the most recent editions of applicable U.S. EPA methods, including Methods for the Analysis of Organics in Water and Wastewater (EPA 600 Series), Test Methods for Evaluating Solid Waste (SW-846), and Methods for Chemical Analysis of Water and Wastes (EPA 600/4-79-020), and in accordance with the approved Sampling and Analysis Plan. If methods other than U.S. EPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval prior to use. The Discharger may, with Executive Officer approval, use alternative analytical methods provided the method detection limits are equal to or lower than those for the methods specified in Attachment 1.

C. All analyses other than field parameters shall be performed by a laboratory certified by the State Water Board's Environmental Laboratory Accreditation Program for the specific

analytes reported, in accordance with Health and Safety Code section 100825 et seq. Instruments used for field parameters shall be kept in good condition and calibrated according to the manufacturer's requirements on the day of use.

D. The methods of analysis and the detection limits used shall be appropriate for the expected concentrations. For any constituent or parameter found in concentrations that produce more than 90 percent non-numerical determinations in data from background monitoring points for that medium, the analytical method having the lowest method detection limit shall be selected from among those methods that would provide valid results in light of any matrix effects or interferences.

E. Method detection limits (MDLs) and practical quantitation limits (PQLs) shall be reported. MDLs and PQLs shall be derived by the laboratory for each analytical procedure according to State of California laboratory accreditation procedures and shall reflect the capabilities of the specific procedure and equipment used, rather than being quoted from U.S. EPA method manuals. Trace results — those falling between the MDL and the PQL — shall be reported as such and accompanied by the estimated MDL and PQL for that analytical run. If the laboratory suspects that, due to matrix or other effects, the true detection or quantitation limit for a particular run differs significantly from the derived values, the results shall be flagged with estimates of the limits actually achieved.

F. All peaks shall be reported, including those that cannot be quantified or specifically identified. Unknown chromatographic peaks shall be reported, flagged, and tracked for comparison to unknown peaks observed in future sampling events. Identification of unknown peaks that recur in subsequent events may be required.

G. All quality assurance and quality control data shall be reported with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, percent recovery, an explanation for any recovery outside quality control limits, results of equipment and method blanks, results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries, and shall be flagged where contaminants are detected in field, trip, or laboratory blanks.

H. The Discharger shall notify the North Coast Water Board in the next monitoring report of any change in the analytical laboratory performing the work required by this MRP, and shall identify any resulting change in reporting limits together with an evaluation of the effect of that change on the concentration limits established under Part III.

I. The Discharger shall maintain a current Sampling and Analysis Plan describing sample collection procedures for each monitored medium; well purging methods and stabilization criteria for field parameters; sample containers, preservation methods, and holding times; chain-of-custody procedures; equipment decontamination procedures; and field quality control procedures. An existing document describing procedures already in use may be submitted to satisfy this requirement. The Sampling and Analysis Plan shall be provided with each monitoring report submitted under Part IV, and any revision shall be identified in the monitoring report for the period in which it took effect.

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Part III — Data Analysis

A. Water Quality Protection Standard

1. The Water Quality Protection Standard consists of the constituents of concern, concentration limits, monitoring points, points of compliance, and compliance period established by this MRP and the WDRs.
2. Constituents of Concern. The constituents of concern required under CCR, title 27, section 20395 include all constituent groups identified in Attachment 1. The Discharger shall test samples for all constituents of concern every five years, or more frequently as required under this MRP or under a corrective action monitoring program.
3. Concentration Limits. Concentration limits for constituents that are not naturally occurring shall be set at the method detection limit for the individual analyte. Concentration limits for naturally occurring constituents shall be determined statistically as provided in Section B below.
4. Monitoring Points. Groundwater monitoring points are those designated in Table 1. Surface water monitoring points are S-1 and S-2. Leachate monitoring points are the leachate wet well and leachate monitoring wells LW-1 through LW-3.
5. Points of Compliance. The point of compliance for the WMU is the vertical surface located at the hydraulically downgradient limit of the WMU that extends through the alluvial deposit and continental basin deposit water-bearing units underlying the WMU. The point of compliance monitoring points for each water-bearing unit are those designated in Table 1. Those designations continue the point of compliance designations established in MRP No. R1-2002-0061, except that monitoring well 90-8 is removed for the reasons stated in Part I, Section A.1 of this MRP.
6. Compliance Period. The compliance period is the number of years equal to the active life of the WMU plus the closure period. Each time the Water Quality Protection Standard is exceeded, the Site begins a compliance period on the date the North Coast Water Board directs the Discharger to begin an evaluation monitoring program. If the corrective action program has not achieved compliance with the Standard by the scheduled end of the compliance period, the compliance period is automatically extended until the Site has been in continuous compliance for at least three consecutive years.

B. Statistical Methods and Verification Procedures

1. Statistical analyses shall be performed as soon as monitoring data are available. Intrawell statistical analyses shall be used to calculate concentration limits for naturally occurring constituents, using an approved statistical method pursuant to CCR, title 27, section 20415(e)(8), or another appropriate method approved by the Executive Officer. The intrawell approach is appropriate at this Site given the documented spatial variability in natural groundwater geochemistry across the two water-bearing units.
2. Statistical Methodology. Intrawell prediction limits shall be calculated using DUMPStat statistical modeling software, consistent with the Unified Guidance published by the United States Environmental Protection Agency. Upper prediction

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limits shall be calculated for all naturally occurring parameters, except that both upper and lower prediction limits shall be calculated for pH. Field pH shall be the value used for statistical evaluation of pH. Because laboratory pH is no longer analyzed, concentration limits for pH shall be recalculated from a background data set of field pH measurements comprising not fewer than eight observations at each monitoring point. Until that data set is complete at a given monitoring point, field pH at that point shall be evaluated by graphical review against the historical range and reported in each monitoring report. The Discharger shall report, in the first Annual Report following completion, the date on which the field pH background data set is complete and prediction limits for pH are reinstated. Any value excluded from a background data set as a statistical outlier shall be identified, reviewed, and tabulated as required by Part IV, Section B.e.

3. Trace Detections and Values Below the Practical Quantitation Limit. Any PQL validated pursuant to CCR, title 27, section 20415(e)(7) and used in the statistical method shall be the lowest concentration that can be reliably achieved within the limits of precision and accuracy specified for routine laboratory operating conditions available to the facility. A trace detection, meaning a value at or above the method detection limit but below the practical quantitation limit, shall be reported, identified as a trace detection, and used in the non-statistical tests required by Section B.6. For parameters subject to statistical testing under Section B.7, estimated values below the practical quantitation limit shall be treated as non-detect, consistent with the treatment of the historical data set from which the concentration limits were derived; estimated detections shall be presented graphically and evaluated qualitatively in each Annual Report.

4. Corrective Action Monitoring Points. Data from corrective action monitoring wells shall be evaluated by trend analysis and graphical review rather than by the statistical tests applied to detection monitoring wells. Each Annual Report shall state whether concentrations at each corrective action monitoring well are stable, increasing, or decreasing relative to the preceding five years of record, and shall identify any increasing trend. Trend determinations shall be made quantitatively using Sen's Slope or the Mann-Kendall test, and the test statistic and significance level shall be reported for each monitoring point and parameter evaluated.

5. Confirmation of Measurably Significant Evidence of a Release. Whenever a constituent is detected at a monitoring point at a concentration that exceeds the concentration limit established under the Water Quality Protection Standard, the Discharger shall conduct verification sampling to confirm whether the exceedance is due to a release or is a false positive, unless previous monitoring has already confirmed a release for that constituent at that monitoring point. An exceedance of a concentration limit is measurably significant evidence of a release that must be either confirmed or denied. Section B.6 provides the procedure for analytes detected in less than 10 percent of the background samples, such as volatile organic compounds and other constituents that do not occur naturally. Section B.7 provides the procedure for analytes detected in 10 percent or more of the background samples, such as chloride and other naturally occurring constituents.

6. Verification Procedure for Analytes Detected in Less Than 10 Percent of Background Samples. The Discharger shall use the following non-statistical method for all analytes detected in less than 10 percent of the background samples.

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a. Initial Determination. Identify each analyte in the current monitoring point sample that exceeds its method detection limit or its practical quantitation limit and for which a release has not previously been confirmed. The Discharger shall conclude that the exceedance is a preliminary indication of a release, or of a change in the nature or extent of a release, at that monitoring point if either the data contain two or more analytes that equal or exceed their respective method detection limits, or the data contain one or more analyte that equals or exceeds its practical quantitation limit.

b. Discrete Retest, pursuant to CCR, title 27, sections 20415(e)(8)(E) and 20420(j)(1) through (3). If the Discharger or North Coast Water Board staff concludes under Section B.6.a that there is a preliminary indication of a release, the Discharger shall immediately notify North Coast Water Board staff by telephone or email and shall, within 30 days of that indication, collect two new retest samples from the monitoring point where the release is preliminarily indicated and analyze them for the constituents that caused the need for the retest.

c. Confirmation of a Release. As soon as the retest data are available, the Discharger shall conclude that measurably significant evidence of a release is confirmed if, not including the original sample, two or more analytes equal or exceed their respective method detection limits, or one or more analyte equals or exceeds its practical quantitation limit. The Discharger shall then immediately notify the North Coast Water Board verbally whether the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, follow with written notification submitted by certified mail within seven days of the verbal notification, carry out the requirements of Section C of this Part if a release has been confirmed, and add any constituent of concern confirmed by this method to the monitoring parameter list so that it is monitored during each regular monitoring event.

7. Verification Procedure for Analytes Detected in 10 Percent or More of Background Samples. The Discharger shall use a statistical or non-statistical method pursuant to CCR, title 27, section 20415(e)(8)(E) for all analytes detected in 10 percent or more of the background samples. The Discharger shall use one of the statistical methods required by section 20415(e)(8)(E) unless another method has been proposed by the Discharger and approved by the North Coast Water Board in this MRP pursuant to section 20415(e)(8)(A) through (D) or section 20415(e)(8)(E).

a. Initial Determination. The Discharger shall compare the value reported by the laboratory for each analyte to the statistically derived concentration limit from the most recent Annual Report or Water Quality Protection Standard Report that uses the approved statistical procedure. If the value exceeds the concentration limit for that constituent, the Discharger shall conclude that there is measurably significant evidence of a release, pursuant to CCR, title 27, section 20420(i).

b. Retest Method, pursuant to CCR, title 27, sections 20415(e)(8)(E) and 20420(j)(1) through (3). If the Discharger or North Coast Water Board staff concludes under Section B.7.a that there is a preliminary indication of a release, the Discharger shall immediately notify North Coast Water Board staff by telephone or email and shall, within 30 days of that indication, implement a verification procedure in accordance with CCR, title 27, sections 20415(e)(8)(E)

and 20420(j)(2). The verification procedure shall consist of either a single composite retest, meaning a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release, or of at least two discrete retests, meaning statistical analyses each of which analyzes only newly acquired data from that monitoring point. The verification procedure shall comply with CCR, title 27, section 20415(e)(8)(E) and with the performance standards of section 20415(e)(9). Retest samples shall be collected from the monitoring point where the release is preliminarily indicated and shall be analyzed for the constituents that caused the need for the retest. If the results of one or more of the retest data suites confirm the original indication, the Discharger shall conclude that measurably significant evidence of a release has been confirmed.

c. Confirmation of a Release. As soon as the retest data are available, the Discharger shall evaluate the results under Section B.7.b and shall immediately notify the North Coast Water Board verbally whether the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, follow with written notification submitted by certified mail within seven days of the verbal notification, carry out the requirements of Section C of this Part if a release has been confirmed, and add any constituent of concern confirmed by this method to the monitoring parameter list so that it is monitored during each regular monitoring event.

C. Notification of Release and Re-Test

1. If the results of the detection monitoring program show a measurably significant increase in a monitoring parameter or waste constituent over the Water Quality Protection Standard at or beyond the points of compliance, the Discharger shall:
   a. Immediately notify North Coast Water Board staff of the exceedance by telephone and email;
   b. Within seven days of the initial finding, provide written notification, or acknowledgment of the North Coast Water Board's finding;
   c. Within 30 days of the initial finding, conduct verification sampling at the monitoring point where the standard was exceeded, in accordance with Section B.6 or Section B.7 of this Part; and
   d. Within 60 days of the initial finding, submit the results of the re-sampling and statistical analysis, indicating whether an exceedance or release was confirmed by the re-test.
2. Detection of a Release. Immediately following detection of a release as confirmed by re-testing, the Discharger shall sample all monitoring points in the affected medium and determine the concentration of all constituents of concern. Because this scan does not involve statistical testing, a single sample from each monitoring point is sufficient. The Executive Officer may approve an appropriate subset of monitoring points based on hydrogeologic conditions at the WMU, pursuant to CCR, title 27, section 20420(k)(1).
3. Within 90 days of determining measurably significant evidence of a release, the Discharger shall submit an amended Report of Waste Discharge to establish an evaluation monitoring program in accordance with CCR, title 27, section 20420(k)(5).

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4. Within 180 days of verifying measurably significant evidence of a release, the Discharger shall submit an engineering feasibility study for a corrective action program in accordance with CCR, title 27, section 20420(k)(6). The corrective action program shall meet the requirements of CCR, title 27, section 20430.
5. Upon verifying measurably significant evidence of a release according to CCR, title 27, section 20420(j), the Discharger shall follow the procedures and timeline described in CCR, title 27, section 20420(k).
6. Upon confirmation of an exceedance from an existing release, the Discharger shall transfer the affected monitoring point from the detection monitoring program to the corrective action monitoring program. Upon confirmation that concentrations at a previously affected monitoring point have been reduced below concentration limits, the Discharger may, with Executive Officer approval, transfer that monitoring point from corrective action monitoring to detection monitoring.

Part IV — Reporting

A. Reporting Schedule

1. Monitoring reports shall be prepared and submitted to the North Coast Water Board semi-annually on the schedule in Table 5. Groundwater sampling shall occur in the second quarter (April through June) and the fourth quarter (October through December) of each year, except that the monitoring wells identified in Table 2, note 2 shall be sampled quarterly with results reported semi-annually. Surface water sampling shall occur as provided in Part I, Section B.3. Leachate wet well sampling shall occur as provided in Part I, Section C.4.

Table E: Monitoring and Reporting Periods

Reporting Period	Period No.	Report Due
January through June	1	September 15
July through December (Annual Report)	2	March 15

2. An Annual Report summarizing the monitoring results for the prior two semi-annual periods shall be submitted by March 15 and may be combined with the semi-annual monitoring report also due March 15.
3. Constituent of concern monitoring for groundwater and leachate shall alternate between spring and fall seasons in conjunction with the regular semi-annual sampling: spring 2027, fall 2032, and every five years thereafter. Surface water constituent of concern testing shall occur after a verified release. Constituent of concern results shall be reported in the monitoring report for the period in which the sampling occurred.

B. Semi-Annual Monitoring Report Content

Each semi-annual monitoring report shall include, at a minimum:

a. A letter of transmittal conveying the essential points of the report and discussing any violations since submittal of the last report, or stating that none were observed. The transmittal letter and the report shall be signed by a principal executive officer,

ranking elected official, or duly authorized representative and shall contain the certification statement in Section E below.

b. A compliance summary containing a narrative discussion of the monitoring results, including compliance with concentration limits, any water quality violations, and any other results of potential significance to water quality, together with a description of corrective actions taken.

c. Tabular presentation of all analytical results arranged so that the date, monitoring point, constituent, concentration, units, MDL, PQL, and any data qualifiers are readily discernible.

d. Groundwater elevation data in tabular form, and a figure depicting groundwater contours, flow direction, and gradient for each water level measuring period and each monitored water-bearing unit.

e. Statistical analysis results for all monitoring parameters subject to statistical evaluation, identification of any exceedance of a concentration limit, and for any exceedance, a discussion of the potential cause, whether verification sampling was conducted, and the results of that sampling. Any value excluded from a background data set as a statistical outlier shall be tabulated with the date, monitoring point, parameter, value, and the basis for exclusion.

f. A trend evaluation for each corrective action monitoring well as required by Part III, Section B.4.

g. A sampling summary describing, for each monitoring point, the method and time of water level measurement; the method of purging, purge rate, and well recovery time; field parameter readings; the type and placement of the sampling device; and the sampling procedure, including the number of samples, field blanks, travel blanks, and duplicates, the date and time of sampling, the name and qualifications of the person collecting the samples, and a description of any anomalies. Any monitoring point that was dry or yielded insufficient volume for the full analyte suite shall be identified, with the analytes not collected and the date on which the make-up sample will be collected.

h. A summary of leachate detection and collection results and the volume of leachate disposed since the last report, reported as required by Part I, Section C.2.

i. Standard observation logs for the reporting period, including Major Storm Event inspections and post-construction inspections, and daily rainfall data in tabular form.

j. A corrective action summary discussing significant aspects of any corrective action measures conducted during the period and the status of ongoing corrective action efforts.

k. Copies of laboratory analytical reports, chain-of-custody documentation, field sampling logs, and leachate seep inspection logs.

l. A base map consisting of an aerial photograph or a map showing relative topographic features, receiving waters, monitoring points, and features of the WMU.

C. Annual Report — Additional Content

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In addition to the semi-annual report content, the Annual Report shall include:

a. For each monitoring point in each medium, graphical presentation of the complete history of laboratory analytical data. Each graph shall plot a single constituent concentration over time at one or more points in a single medium, shall plot each datum rather than mean values, and shall show applicable concentration limits. Graphs for the same constituent shall be plotted at the same scale. Graphs are not required until a minimum of two samples of a given analyte have been collected at a given point, or where an analyte has always been non-detect at that point.

b. A summary of the perimeter landfill gas monitoring program results for the reporting year as required by Part I, Section D.4, including the status of any unresolved surface emissions exceedance reported under the Landfill Methane Regulation; the results of the annual final cover leak search conducted by surface emissions monitoring pursuant to CCR, title 17, section 95471(c) and CCR, title 27, section 21090(a)(4)(A); and, for each defect identified, its location, the repair performed, the date of repair, and the result of the retest confirming the adequacy of the repair under the closure CQA Plan.

c. The annual leachate management system inspection and integrity testing results required by the WDRs, including a statement as to the presence or absence of leachate.

d. Proof of adequate assurances of financial responsibility for closure, post-closure maintenance, and corrective action, in accordance with CCR, title 27, sections 20380(b), 20950(f), 22210, 22211, 22212, 22220, 22221, and 22222, including annual accounting for inflation and confirmation that the post-closure maintenance cost estimate includes the cost of purchase and installation of a complete replacement of the 50-mil geomembrane component of the final cover, normalized over the 30-year post-closure maintenance period.

e. Every five years following Executive Officer approval of the certification of closure, updated post-closure maintenance and corrective action cost estimates, together with the demonstration required by Provision F.8 of the WDRs.

f. A map showing any areas of differential settlement noted by visual observation, highlighting areas of repeat or severe settlement. If settlement greater than five feet is noted, the map shall be prepared by or under the direction of a California registered civil engineer or certified engineering geologist.

g. The five-year iso-settlement map, in the years it is due under Part I, Section E.7.

h. An evaluation of the effectiveness of post-closure maintenance activities during the year, including a comparison of annual leachate generation volume against the pre-closure baseline.

i. A discussion of compliance with, and any changes to, the Water Quality Protection Standard.

j. A certification that the Site is being maintained in compliance with the approved Final Closure and Postclosure Maintenance Plan.

D. Other Reports

1. Annual Erosion Control Report. By December 15 of each year, the Discharger shall submit a report describing measures taken to comply with the erosion control

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requirements of the WDRs, including any erosion control measures implemented and any construction, maintenance, or repairs of precipitation and drainage control facilities. Upon request, the Executive Officer may exempt the Discharger from this requirement upon determining that no erosion control work is necessary prior to the return of winter rains.

2. Emergency Response Plan. The Discharger shall maintain an Emergency Response Plan, updated as necessary in the event it does not provide an adequate response to a failure or release, upon changes in post-closure land use or on-site structures, upon written notification by the Executive Officer that the plan is inadequate, upon identification of problems during its implementation, or upon changes in key emergency response personnel.

3. Post-Closure Repair Reports. Post-closure maintenance activities entailing repair of the final cover's low-hydraulic-conductivity layer shall be reported and certified by the CQA Certifying Engineer overseeing the repair and submitted under penalty of perjury in accordance with CCR, title 27, sections 20324(c) and 20324(d). The report shall include daily summary reports; material acceptance reports; photograph logs of repair activities; final CQA documentation; and laboratory and field testing results. If the repair area is two acres or larger, an as-built topographic map of the repaired area shall be prepared at a scale of one inch to 100 feet with a contour interval of two feet.

4. Report Preparation. Monitoring reports shall be prepared by or under the direction of a California registered civil engineer, certified engineering geologist, or professional geologist, and shall be signed and stamped by that professional.

E. Certification Statement

Each report shall include the following certification:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

The Discharger shall implement this Monitoring and Reporting Program beginning on the effective date of Order No. R1-2027-0002.

Ordered by: _____

Valerie Quinto, Executive Officer

[DATE]

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ATTACHMENT 1

MONITORING PARAMETERS AND CONSTITUENTS OF CONCERN — APPROVED ANALYTICAL METHODS

This Attachment identifies the field parameters, monitoring parameters, and constituents of concern referenced in Tables 2, 3, and 4 of this MRP, and the analytical methods approved for each. Methods designated "EPA" are those published in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, or in CFR, title 40, part 136. Methods designated "Standard Methods" are those published in Standard Methods for the Examination of Water and Wastewater. The most recent revision of each method approved by the United States Environmental Protection Agency applies.

Where more than one method is identified for a parameter, the Discharger shall report which method was used. The Discharger may use an alternative method that satisfies CCR, title 27, section 20415(e)(7) with the prior written approval of the Executive Officer.

A. Field Parameters

Parameter	Approved analytical method	Units
pH	Field meter, Standard Methods 4500-H^+ B	pH units
Specific conductance	Field meter, Standard Methods 2510 B	µmhos/cm
Temperature	Field meter, Standard Methods 2550 B	°C
Turbidity	Field meter, EPA 180.1 or Standard Methods 2130 B	turbidity units
Groundwater and leachate elevation	Electronic water level indicator, read to 0.01 foot	feet
Siltation in well casing	Sounding against the well construction log	feet

Field parameters are measured in the field at the time of sampling and are identified by the symbol † in Tables 2, 3, and 4. Rainfall, erosion, and leachate disposal volume are recorded by observation or by meter and require no analytical method.

B. Monitoring Parameters

Parameter	Approved analytical method	Units
Total dissolved solids	Standard Methods 2540 C	mg/L
Bicarbonate alkalinity	Standard Methods 2320 B	mg/L
Carbonate alkalinity	Standard Methods 2320 B	mg/L
Chloride	EPA 300.0 or Standard Methods 4500-Cl^-	mg/L
Sulfate	EPA 300.0 or Standard Methods 4500-SO_4^{2-}	mg/L
Nitrate as nitrogen	EPA 300.0 or Standard Methods 4500-NO_3^-	mg/L

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Parameter	Approved analytical method	Units
Total nitrogen	Standard Methods 4500-N C	mg/L
Total ammonia	EPA 350.1 or Standard Methods 4500-NH_3	mg/L
Un-ionized ammonia	Calculated from total ammonia, pH, and temperature	mg/L
Manganese (dissolved)	EPA 6010D or EPA 6020B	µg/L
Boron (dissolved)	EPA 6010D or EPA 6020B	µg/L
Volatile organic compounds	EPA 8260D, including methyl tert-butyl ether	µg/L
Total petroleum hydrocarbons	EPA 8015C or 8015D, purgeable and extractable fractions reported separately	mg/L
Extractable oil and grease	EPA 1664B, n-hexane extractable material	mg/L
Biochemical oxygen demand	Standard Methods 5210 B	mg/L
Chemical oxygen demand	EPA 410.4 or Standard Methods 5220 D	mg/L
Total suspended solids	Standard Methods 2540 D	mg/L
Total settleable solids	Standard Methods 2540 F	mL/L

Monitoring parameters are identified by the symbol ‡ in Tables 2, 3, and 4. Dissolved metals shall be field filtered through a 0.45 micron filter before preservation.

C. Constituents of Concern

Constituent group	Approved analytical method	Units
Inorganics (dissolved)	EPA 6010D or EPA 6020B; mercury by EPA 7470A	µg/L
Volatile organic compounds	EPA 8260D	µg/L
Semi-volatile organic compounds	EPA 8270E	µg/L
Organochlorine pesticides	EPA 8081B	µg/L
Polychlorinated biphenyls	EPA 8082A	µg/L
Organophosphorus pesticides	EPA 8141B	µg/L
Chlorophenoxy herbicides	EPA 8151A	µg/L

Constituents of concern are identified by the symbol § in Tables 2, 3, and 4. The constituents of concern required under CCR, title 27, section 20395 are the constituents listed in Appendix II to CFR, title 40, part 258, which is the default constituent of concern list for a municipal solid waste landfill; the monitoring parameters identified in Section B of this Attachment; and any additional constituent detected in leachate under Part I, Section C of this MRP and confirmed

on retest, which shall be added to the constituent of concern list for groundwater and surface water.

D. Laboratory and Reporting Requirements

1. All analyses shall be performed by a laboratory certified for the applicable analyte and method by the State Water Resources Control Board Environmental Laboratory Accreditation Program, as required by Water Code section 13176.

2. Method detection limits shall be determined in accordance with CFR, title 40, part 136, appendix B. The method detection limit and the practical quantitation limit achieved for each analyte shall be reported with each result.

3. All chromatographic peaks shall be reported, including peaks that cannot be quantified or specifically identified.

4. Values at or above the method detection limit but below the practical quantitation limit shall be reported and identified as trace detections, and shall be evaluated in accordance with Part III, Section B.3 of this MRP.

5. The Discharger shall notify the North Coast Water Board of any change in the laboratory performing the analyses required by this MRP, in accordance with Part II, Section H.

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