

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401-7906**

**MONITORING AND REPORTING PROGRAM NO. R3-2018-0001
Waste Discharge Identification No. 3 442004001**

FOR

**CEMEX DAVENPORT CEMENT PLANT CKD LANDFILLS
Santa Cruz County**

Monitoring and Reporting Program (MRP) Order No. R3-2018-0001 for the CEMEX Davenport Cement Plant (Facility) Cement Kiln Dust (CKD) Landfills is issued by the Central Coast Regional Water Quality Control Board (Water Board) pursuant to California Water Code (CWC) §13267. Collectively, CEMEX and its subsidiary RMC Pacific Materials LLC dba CEMEX (hereafter CEMEX) and the Trust for Public Land and its subsidiary Coast Dairies and Land Co. (hereafter (TPL/CDLC), are considered the "Discharger" in respect to this MRP. CEMEX is primarily responsible for compliance with this MRP and TPL/CDLC are also responsible as landowners for all waste discharges to their land. If CEMEX acquires the TPL/CDLC land that includes the landfills, TPL/CDLC will no longer be responsible for compliance with this MRP. This MRP is required to determine compliance with the CWC, applicable state and federal regulations, and Waste Discharge Requirements Order No. R3-2018-0001. Failure to comply with this MRP may subject the Discharger to enforcement actions including, but not limited to, civil liability of up to \$1,000 per day for each day in which the violation occurs pursuant to Water Code §13268.

PART I: MONITORING AND OBSERVATION SCHEDULE

Unless otherwise indicated, the Discharger shall report all required monitoring and observations as outlined in **PART IV**.

A. SITE INSPECTIONS

The Discharger shall inspect the Landfills, in accordance with the following schedule, and record (including photographs, when appropriate), at a minimum, the Standard Observations listed below:

1. Site Inspection Schedule:

- a. During the wet season (October 1 through April 30); at least **monthly** and during or within 24 hours following each storm event that produces high intensity stormwater runoff and/or a storm event that produces a minimum of one inch of rain within a 24-hour period¹.

¹ The intent of this requirement is for Landfill staff to use professional judgment to determine whether high intensity runoff triggers an inspection and/or how quickly (during or within 24 hours) a landfill inspection is warranted after a storm event to ensure that the storm event has not resulted in erosion or other stormwater-related issues that can potentially impact water quality or the integrity of the final cover and storm water conveyance systems (i.e., drainage control systems).

- b. During the dry season (May 1 through September 30); a minimum of one inspection during each **three month** period and during or within 24 hours following each storm event that produces high intensity stormwater runoff and/or a storm event that produces a minimum of one inch of rain within a 24-hour period.

2. Standard Observations:

- a. At the Landfills and along landfill perimeters:
 - i. Whether stormwater sedimentation/retention basins contain liquids.
 - ii. Evidence of liquid leaving or entering the Landfill, estimated size of affected area, and flow rate (show affected area on map).
 - iii. Evidence of ponding water at any point on the waste management facility (identify affected area on map).
 - iv. Presence of odors; characterization, source, and distance odor detected from source.
 - v. Evidence of erosion and/or exposed waste.
 - vi. Integrity of all drainage and containment systems.
 - vii. Evidence of waste in the drainage system (e.g., drainage channels and stormwater sediment/retention basins.)
 - viii. Evidence of trespass/illegal access and damage to the cover system, structures, monitoring points, or any other onsite equipment.
- b. For Receiving Waters:
 - i. Floating and suspended materials of waste origin – presence or absence, source, and size of affected area.
 - ii. Discoloration and turbidity; description of color, and size of affected area.
 - iii. Evidence of odors; presence or absence, characterization, source, and distance of odor detected from source.
 - iv. Evidence of beneficial use; presence of water-associated wildlife.
 - v. Estimated flow rate to the receiving water.
 - vi. Weather conditions; wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

B. DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect all drainage control systems following each runoff producing storm event and record the following information:

1. General conditions of the stormwater facilities;
2. Description of whether storm water sedimentation/retention basins and drainage ditches contain liquids, have adequate freeboard, and if basins are discharging;
3. Document compliance with the Landfills Storm Water Pollution Prevention Plans to insure that the terms of the State Water Resources Control Board (State Water Board) General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial General Permit or IGP) and General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit or CGP) are properly implemented, if applicable; and

4. Steps taken to correct any problems found during the inspections, as required under Part IA of the MRP and date(s) when corrective action was taken. Include photographic documentation.

C. RAINFALL DATA

The Discharger shall record the following information from the nearest monitoring station:

1. Total daily precipitation, in inches, during each **month** period.
2. Number of storms (greater than one inch in 24 hours) received during each **month**.
3. Precipitation, in inches, and return interval (25 year, 100 year, etc.) of the most intense 24-hour rainfall event occurring within each **month**.

D. MONITORING LOCATIONS AND ANALYTICAL MONITORING

The Discharger shall monitor the Landfills in accordance with the following schedule(s). Monitoring locations are shown on Monitoring Locations Map, **MRP Figure 1**. The Discharger shall comply with the sampling, analyses, and reporting requirements discussed in **Parts II, III, and IV** of this MRP.

1. Monitoring Periods:

- a. **Semiannually** - The 1st and 2nd semiannual monitoring periods are January 1 – June 30, and July 1 – December 31, respectively.
- b. **Annually** – The annual monitoring period is from January 1 – December 31.

2. Monitoring Programs:

The Discharger shall sample and analyze the Landfill's monitoring points as summarized in **Table 1**:

Table 1: Monitoring Summary

Monitoring Group	Monitoring Point I.D. ⁽¹⁾⁽²⁾	Medium	Parameters	Constituents of Concern	Frequency ⁽³⁾
Lonestar Closed CKD Landfill	MW-5	Background Groundwater	Table 2	Table 3	Annual ⁽⁴⁾⁽⁵⁾
	MW-1, MW-2, MW-3, MW-4	Groundwater	Table 2	Table 3	Semiannual ⁽⁴⁾⁽⁵⁾
	SW-Farmers Pond	Surface Water	Table 2	NA	Annual
	SW-Culvert	Surface Water	Table 2	NA	Annual
	SW-ChristyBox, SW-Lower Pond	Stormwater	Table 2	NA	Annual/Wet Weather ⁽⁶⁾
North CKD Area	PZ-1, PZ-5	Background Groundwater (Santa Cruz Mudstone)	Table 2	Table 3	Annual ⁽⁴⁾⁽⁵⁾
	PZ-3, PZ-10	Groundwater (Terrace Deposits)	Table 2	Table 3	Semiannual ⁽⁴⁾⁽⁵⁾
	PZ-2, PZ-4, PZ-6, PZ-7, PZ-9, PZ-11, PZ-12, PZ-13, PZ14, PZ-15MW1 ⁽⁷⁾	Groundwater (Santa Cruz Mudstone)	Table 2	Table 3	Semiannual ⁽⁴⁾⁽⁵⁾
	PZ-8 ⁽⁸⁾	CKD Leachate	Table 2	Table 3	Semiannual ⁽⁴⁾⁽⁵⁾
	Detention Pond	Surface Water	Table 2	NA	Annual
	Retention Pond	Surface Water	Table 2	NA	Annual
	Discharger Point 001	Stormwater	Table 2	NA	Monthly/Wet Weather ⁽⁶⁾⁽⁹⁾
Leachate Seeps	To be Documented: Seep Location & Affected Surface Water	Leachate/Surface Water/Stormwater	Table 2	NA	Conditional ⁽¹⁰⁾

(1) See **MRP Figure 1**.

(2) For new monitoring points, the Discharger shall conduct quarterly monitoring for four consecutive quarters starting from the date first sampled. After completing the initial quarterly samples, monitor at the specified monitoring frequency for the assigned Monitoring Group, except as provided under **Part III C** of this MRP.

(3) The Discharger shall collect and analyze samples as specified in **Part I D.7** of this MRP.

(4) Groundwater monitoring well elevations shall be monitored semiannually as specified in **Part I D.6** of this MRP.

(5) Sample Constituents of Concern (COC) once every five years as specified in **Part I D.4** except as provided under **Part III C** of this MRP.

(6) The Discharger shall collect and analyze samples as specified in **Part I D.5** of this MRP.

(7) PZ-15MW1 may be formally abandoned to facilitate expansion of the Retention Pond during final closure of the North CKD Area. Prior to abandoning PZ-15MW1, the Discharger shall propose a replacement monitoring well(s) to evaluate Retention Pond corrective actions.

(8) PZ-8 shall be formally abandoned during final closure of the North CKD Area.

(9) The Discharger may request a reduction in monitoring frequency from monthly to annual for Discharge Point 001 as specified in **Part I D.5** of this MRP.

(10) The Discharger shall collect and analyze samples as specified in **Part I D.5.d** and **Part IV C.1** of this MRP.

3. Monitoring Parameters:

The Discharger shall analyze all groundwater surface water, and leachate seep samples for the monitoring parameters in **Table 2** below:

Table 2: Groundwater, Surface Water, and Leachate Monitoring Parameters

Parameters	Method ⁽¹⁾⁽²⁾⁽³⁾	Units ⁽⁴⁾
pH	Field	pH Units
Turbidity	Field	NTU
Dissolved Oxygen	Field	mg/L
Temperature	Field	°F/C
Electrical Conductivity (EC)	Field	µmhos/ cm
Total Alkalinity	Footnote 1, 2	mg/L
Total Dissolved Solids	Footnote 1, 2	mg/L
Iron	Footnote 1,2, 3	µg/L
Chloride	Footnote 1, 2	mg/L
Sulfate	Footnote 1, 2	mg/L
Calcium	Footnote 1, 2, 3	mg/L
Potassium	Footnote 1, 2, 3	mg/L
Sodium	Footnote 1, 2, 3	mg/L
Antimony	Footnote 1,2, 3	µg/L
Arsenic	Footnote 1,2, 3	µg/L
Barium	Footnote 1,2, 3	µg/L
Chromium (Total)	Footnote 1,2, 3	µg/L
Chromium (VI) ⁽⁵⁾	Footnote 1,2, 3	µg/L
Copper	Footnote 1,2, 3	µg/L
Lead	Footnote 1,2, 3	µg/L
Mercury	Footnote 1,2, 3	µg/L
Molybdenum	Footnote 1,2, 3	mg/L
Nickel	Footnote 1,2, 3	µg/L
Selenium	Footnote 1,2, 3	µg/L
Vanadium	Footnote 1,2, 3	µg/L
Zinc	Footnote 1,2, 3	µg/L

(1) An approved United States Environmental Protection Agency (US EPA) method that provides the lowest practicable detection limit or in accordance to an Executive Officer approved Sampling and Analysis Plan pursuant to **Part II A** of this MRP.

(2) Statistical and non-statistical assessment methods, as required by **Part III**, shall be used to evaluate the sampling results of laboratory-derived parameters.

(3) All metals shall be field filtered prior to laboratory analysis, or as approved in accordance to **Part II A** of this MRP, and analyzed for total metals.

(4) NTU – nephelometric turbidity units; mg/L – milligrams per liter; µmhos/cm – micromillimhos per centimeter; °F/C – degrees Fahrenheit/Centigrade; µg/L – micrograms per liter

(5) Chromium (VI) analysis is only necessary if total chromium is detected.

4. Constituents of Concern Monitoring:

The Discharger shall analyze samples from groundwater for the Constituents of Concern (COC) listed in **Table 3**, **once every five years** (next sampling event **2nd Semiannual 2021**). If there is an identification of new release (**Part IV C.4**), then the Discharger is also required to monitor for COC. Monitoring for COC shall include only those constituents in **Table 3** that are not analyzed as part of the routine monitoring program. Additionally, within three months of installing a new groundwater monitoring point, the Discharger shall collect and analyze samples for **Table 2** parameters and **Table 3** COC.

Table 3: Constituents of Concern

Constituents	Method ⁽¹⁾⁽²⁾	Units ⁽³⁾
Chromium (VI)	Footnote 1, 2	µg/L
CCR Title 22 Metals, (CAM 17)	Footnote 1, 2	µg/L
Total Petroleum Hydrocarbons	Footnote 1	mg/L
Total Organic Carbon	Footnote 1	mg/L
Semi-Volatile Organic Compounds ⁽⁴⁾	Footnote 1, 4	µg/L
Volatile Organic Compounds ⁽⁵⁾	Footnote 1, 5	µg/L

(1) An approved United States Environmental Protection Agency (US EPA) method that provides the lowest practicable detection limit or in accordance with an Executive Officer approved Sampling and Analysis Plan pursuant to **Part II A** of this MRP.

(2) All COC metals shall be field filtered prior to laboratory analysis, or as approved in accordance with **Part II A** of this MRP, and analyzed for total metals.

(3) mg/L – milligrams per liter; µg/L – micrograms per liter

(4) Semi-Volatile Organic Compounds shall include all SVOCs detectable using USEPA Method 8270C, and all unidentified peaks whenever practical.

(5) Volatile Organic Compounds (VOCs) include all VOCs detectable using USEPA Method 8260B, and all unidentified peaks whenever practical.

5. Stormwater Monitoring:

- a. When the Retention Pond is discharging to Discharge Point 001, the Discharger shall collect samples **monthly** from Discharge Point 001 (after pH adjustment) and analyze for monitoring parameters in **Table 2**. Following final closure of the North CKD Area and remediation of the Detention and Retention Ponds, the Discharger may request a reduction in monitoring frequency from monthly to annual for Discharge Point 001, if Discharge Point 001 monitoring, along with supplemental pH sampling (before pH adjustment), confirms reduced impacts to stormwater. If Discharge Point 001 monitoring continues to document significant impacts to stormwater, the Discharger shall propose and implement additional monitoring to differentiate potential sources.
- b. When wet weather results in runoff from the Lonestar Closed CKD Landfill to the SW-Christy Box or SW-Lower Pond monitoring points, the Discharger shall collect samples from both monitoring points **annually** and analyze for monitoring parameters in **Table 2**.
- c. The Discharger shall also collect stormwater samples pursuant to the Industrial General Permit and Construction General Permit, as applicable, and summarize the results.
- d. If leachate seeps contact surface waters or stormwater, the Discharger shall sample all impacted onsite sedimentation/retention ponds and onsite/offsite stormwater discharge

locations for the monitoring parameters included in **Table 2** and pursuant to the applicable stormwater General Permit. These sampling requirements are independent of other required monitoring specified in this MRP, and shall be collected whether the facility discharges stormwater offsite or not.

6. Groundwater Flow Rate and Direction:

- a. For each monitored groundwater body or area, the Discharger shall measure the water elevation in every well, at least **semiannually**, including the times of expected highest and lowest groundwater elevations, and determine the presence of vertical gradients, and groundwater flow rate and direction for the respective groundwater body or area. Groundwater elevations for all wells in a given groundwater body or area shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.
- b. The Discharger shall compare observed groundwater characteristics with those associated with previous measurements, noting any trends and changes in the hydrogeologic conditions beneath the site.

7. Sample Procurement Limitation:

For any given monitored medium, the Discharger shall collect samples from monitoring points with a span not exceeding **30 days** within a given monitoring period and collect samples in a manner that ensures sample independence to the greatest extent feasible.

PART II: SAMPLE COLLECTION AND ANALYSIS

A. SAMPLING AND ANALYTICAL METHODS

The Discharger shall collect, store, and analyze samples according to the most recent version of Standard US EPA methods (US EPA publication "SW-846"), and in accordance with a sampling and analysis plan approved by the Water Board's Executive Officer. A laboratory certified for these analyses by the State of California Environmental Laboratory Accreditation Program (ELAP) shall perform all water analyses and they shall identify the specific methods of analysis. The director of the laboratory whose name appears in the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Water Board. In addition, the Discharger is responsible for ensuring that the laboratory analysis of samples from monitoring points meets the following restrictions:

1. Method Selection:

The methods of analysis and the detection limits used shall be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., trace) in historical data for that medium, the analytical method having the lowest Method Detection Limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects involved.

2. Trace Results:

The Discharger shall report trace results (i.e., results falling between the MDL and the Practical Quantitation Limit (PQL), and the result shall be accompanied by both the (nominal or estimated) MDL and PQL values for that analytical run.

3. Nominal or Estimated MDL and PQL:

The laboratory shall derive MDLs and PQLs for each analytical procedure, according to State of California ELAP procedures. Both limits shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the laboratory shall flag the results accordingly and the laboratory shall include an estimate of the detection limit and/or quantitation limit actually achieved.

4. Quality Assurance/Quality Control (QA/QC) Data:

Report Quality Assurance and Quality Control (QA/QC) data along with the sample results to which it applies. Also, report sample results unadjusted for blank results or spike recovery. The QA/QC data submittal shall include the:

- a. Method, equipment, and analytical detection limits;
- b. Recovery rates and an explanation for any recovery rate that is less than 80%;
- c. Results of equipment and method blanks;
- d. Results of spiked and surrogate samples;
- e. Frequency of quality control analysis; and,
- f. Name and qualifications of the person(s) performing the analyses.

5. Common Laboratory Contaminant:

Upon receiving written approval from the Executive Officer, the Discharger can use an alternative statistical or non-statistical procedure for determining the significance of analytical results for a constituent that is a common laboratory contaminant (e.g., methylene chloride, acetone, 2-butanone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Monitoring Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, the Discharger shall report and flag analytical results involving detection of these analytes for easy reference by Water Board staff.

6. Unknowns:

The Discharger shall report known and unknown chromatographic peaks, along with an estimate of the concentration of the known and unknown analytes. When known and unknown peaks are encountered, the laboratory shall perform second column or second

method confirmation procedures to attempt to identify and more accurately quantify the known and unknown analytes.

7. Contaminants in QA/QC Samples:

In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the Discharger shall appropriately flag the accompanying sample results.

8. Method Detection Limit:

The Discharger shall always calculate a MDL such that it represents a concentration associated with a 99% reliability of a non-zero result. In relatively interference-free water, laboratory-derived MDLs are expected to closely agree with published USEPA MDLs.

9. Practical Quantitation Limit:

The PQL shall be the lowest acceptable calibration standard (acceptable as defined for a linear response or by actual curve fitting) multiplied by the sample extract dilution factor times any additional factors to account for matrix interference.

10. Matrix Effect:

The matrix effect is any increase in the MDLs or PQLs for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

B. CONCENTRATION LIMIT DETERMINATION

1. For the purpose of establishing concentration limits for monitoring parameters detected in greater than 10 percent of a medium's samples, the Discharger shall:
 - a. Statistically analyze existing monitoring data (**Part III**), and propose, to the Executive Officer, statistically derived Concentration Limits for each monitoring parameter and COC at each monitoring point for which sufficient data exist.
 - b. In cases where sufficient data for statistically determining Concentration Limits do not exist, the Discharger shall collect samples and analyze for monitoring parameter(s), which require additional data. Once sufficient data are obtained, the Discharger shall submit proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than **two calendar years**.
 - c. Sample and analyze new monitoring points, including any added by this Order, until sufficient data are available to establish a proposed concentration limit for all monitoring parameters and COC. Once sufficient data are obtained, the Discharger shall submit the proposed concentration limit(s) to the Executive Officer for approval. This procedure shall take no longer than **two calendar years**.
2. Once established, review concentration limits a minimum of **annually**. Propose new concentration limits, when appropriate.

C. RECORDS MAINTENANCE

The Discharger shall maintain records in accordance with CCR Title 27 §21720(f), including maintenance and retention of analytical records for a minimum of five years by the Discharger or laboratory. The Discharger shall extend the period of retention during the course of any unresolved litigation or when requested by the Executive Officer. Such records shall show the following for each sample:

1. Identification of sample and of the monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
2. Date and time of sampling;
3. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Results of analyses, and the MDL and PQL for each analysis. Chromatographs and calculation of results, if applicable; and
6. A complete chain of custody log.

PART III: STATISTICAL AND NON-STATISTICAL ANALYSIS OF DATA

A. STATISTICAL METHOD

For detection monitoring, the Discharger shall use statistical methods to analyze COC and monitoring parameters that exhibit concentrations that equal or exceed their respective MDL in at least ten percent of applicable historical samples. The Discharger may propose and use any statistical method that meets the requirements of CCR Title 27, §20415(e)(7). All statistical methods and programs proposed by the Discharger are subject to Executive Officer approval.

B. NON-STATISTICAL METHOD

For detection monitoring, the Discharger shall use the following non-statistical method for analyzing constituents that are detected in less than ten percent of applicable historical samples. This method involves a two-step process:

1. For constituents that this non-statistical method applies, compile a specific list of constituents that exceed their respective MDL. The Discharger shall compile the list based on data from a single sample, or in cases of multiple independent samples, from the sample which contains the largest number of constituents;
2. Evaluate whether the listed constituents meet either of two possible triggering conditions. Either the list from a single sampling location contains two or more constituents, or the list contains one constituent that equals or exceeds its PQL. If either condition is met, the Discharger shall conclude that a release is tentatively identified and the Discharger shall immediately implement the re-test procedure under **Part III C.**

C. RE-TEST PROCEDURE

1. In the event that a release² has been tentatively identified, the Discharger shall carry out the reporting requirements of **Part IV C.2** and, within **30 days** of receipt of analytical results, collect two new duplicate samples and analyze for the identified COC or monitoring parameter(s) at each affected monitoring point.
2. As soon as the re-test required data is available, the Discharger shall analyze the re-test analytical results using the same statistical method (or non-statistical comparison) that provided the tentative identification of a release. If the test results of either (or both) of the re-tested data suites confirm the original identification, the Discharger shall conclude that a release has been discovered and shall carry out the requirements of **Part IV C.4**.
3. The Discharger shall carry out re-tests only for the monitoring point(s) for which a release is tentatively identified, and only for the monitoring parameter(s) or COC, which triggered the identification. If the retest includes VOCs or SVOCs, the Discharger shall retest for all compounds detectable by US EPA Method 8260B and 8270C, respectively.

PART IV: REPORTING

A. MONITORING REPORT

The Discharger shall submit a monitoring report **semiannually** by **January 31st** and **July 31st** of each year. Submit the monitoring reports in an electronic format, with transmittal letter, text, tables, figures, laboratory analytical data, and appendices in PDF format (one PDF for the entire report). The Discharger is required to upload the full monitoring report into GeoTracker, as stipulated by California State law. All monitoring reports shall include, but should not be limited to the following:

1. Letter of Transmittal:

The Discharger shall submit a transmittal letter with each monitoring report. The transmittal letter shall include a discussion of violations that have occurred since submittal of the last such report. If the Discharger has not observed any new violations since the last submittal, the Discharger shall state this in the transmittal letter. Both the monitoring report and the transmittal letter shall be signed as follows: for private facilities, a principal executive officer at the level of vice president; for public agencies, the director of the agency. Upon Water Board Executive Officer approval, the cited signature can be by a California registered civil engineer, professional geologist, or other certified specialty geologist who has been given signing authority by the cited signatories. The transmittal 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.

² The intent of the requirement for tentatively identified release retesting and subsequent requirements for release discovery response (**Part IV C.4**) are intended to apply to new releases. The Discharger shall evaluate each tentatively identified releases and determine if it is (1), a new release, requiring retesting, or (2), monitoring of a historical or known release, requiring an update to the corrective action summary (**Part IV A.3**).

2. General:

- a. All data required by this monitoring program.
- b. All previous groundwater data in tabular form to allow comparison of historical data.
- c. An evaluation and interpretation of all available data.

3. Compliance Summary:

Discuss compliance with concentration limits, release indicators, and any corrective actions taken.

4. Graphical Representation of Analytical Data:

- a. For each monitoring point in each medium, submit, in graphical format, the complete history of laboratory analytical data. Graphs shall effectively illustrate trends and/or variations in the laboratory analytical data. Each graph shall plot a single constituent concentration over time at one (for intra-well comparison) or more (for inter-well comparisons) monitoring points in a single medium. Where applicable, include Maximum Contaminant Levels (MCLs) and/or concentration limits along with graphs of constituent concentrations. When multiple samples are taken, graphs shall plot each datum, rather than plotting mean values.
- b. The Discharger shall also determine horizontal gradients, groundwater flow rate, and flow direction for each respective groundwater body. Present these data on a figure that depicts groundwater contours and flow directions as well as gradient. Include one figure for each water level measuring period in the semiannual monitoring report.

5. Corrective Action Summary:

Discuss significant aspects of any corrective actions implemented during the monitoring period and the status of any ongoing corrective action efforts, including constituent trend analysis.

6. Laboratory Results:

Summarize and report laboratory results and statements demonstrating compliance with **PART II**. Additionally, the Discharger shall summarize and report results of all sampling and analyses performed at the site, outside the requirements of this Monitoring and Reporting Program.

7. Sampling Summary:

- a. For each groundwater monitoring point addressed by the report, a description of: 1) the method and time of water level measurement, 2) the method of purging and purge rate and well recovery time, and 3) field parameter readings.
- b. For each monitoring point addressed by the report, a description of the type of sampling device used, its placement for sampling, and a description of the sampling procedure (i.e., number of samples, field blanks, travel blanks, and duplicate samples taken; the date and time of sampling; the name and qualification of the person actually

taking the samples; description of any anomalies).

8. Standard Observations:

A summary of all standard observations (**Part I**) made during the monitoring period.

9. Map(s):

The base map for the monitoring report shall consist of a current aerial photograph or include relative topographical features, along with monitoring points and features of the landfill facility.

B. ANNUAL SUMMARY REPORT

By no later than **January 31st** of each year, the Discharger shall submit an annual report to the Water Board covering the previous monitoring year. The annual monitoring period ends on December 31st each year. . The Discharger may combine the annual summary report with the second semiannual monitoring report of the year. The annual report shall include the information outlined in **Part IV A.** above and the following:

1. Discussion:

Include a comprehensive discussion of the compliance record as it relates to Waste Discharge Requirements Order No. R3-2018-0001, a review of the past year's 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 upcoming year.

2. Statistical Limit Review:

The Discharger shall review the statistically derived concentration limits a minimum of annually, and revise them as necessary. The Discharger shall discuss data collected during the past year and consider for inclusion in, and determination of, proposed limits for the coming year. For statistical limits that are changed from the previous year, include a comprehensive discussion of the proposed limit for Executive Officer review and consideration.

3. Analytical Data:

Complete historical analytical data for detected analytes presented in tabular form in Excel™ format or in another file format acceptable to the Executive Officer.

4. Map(s):

A map, or set of maps, that indicate(s) the type of cover material in place (final, long-term intermediate, or intermediate) over inactive and completed areas.

C. CONTINGENCY RESPONSE

1. Leachate Seep

The Discharger shall notify Water Board staff by telephone or email within **24 hours** of discovering leachate seepage from the disposal area. The Discharger shall submit a written report to the Water Board within seven days, containing at least the following information:

- a. A map showing the location(s) of seepage along with photographic documentation;
- b. An estimate of the flow rate;
- c. Location of sample(s) collected for laboratory analyses. Unless otherwise directed by Water Board staff, the Discharger shall sample all leachate seeps and affected surface waters for the monitoring parameters in **Table 2**. In the event multiple seeps occur in a similar localized area (slope or bench), the Discharger may use professional judgment to reduce the number of leachate seep samples provided the Discharger collects representative samples. The Discharger shall photo document sample locations, all observed seeps/spills, and document the sample location(s) on a map or diagram. The Discharger is also required to sample affected surface waters and stormwater in accordance with **Part I D.5.d**;
- d. A description of the nature of the discharge (e.g. pertinent observations, analyses, etc.); and
- e. A summary of corrective actions both taken and proposed, with a time schedule for proposed actions.

2. Initial Release Indication Response:

Should the initial statistical or non-statistical comparison (under **Part III A. or B.**) determine that a new release is tentatively indicated, the Discharger shall:

- a. Within **24 hours**, notify the Water Board by telephone or email of 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. Either of the following:
 - i. Carry out a discrete re-test in accordance with **Part III C**. If the re-test confirms the existence of a release or the Discharger fails to perform the re-test, the Discharger shall carry out the requirements of **Part IV C.4**. In any case, the Discharger shall inform the Water Board of the re-test outcome within **24 hours** of results becoming available, and follow up with written results submitted by certified mail within **seven days**, or;
 - ii. Make a determination, in accordance with CCR Title 27, §20420(k)(7), that a source other than the WMU(s) caused the release or that the data variance is an artifact of an error in sampling, analysis, or statistical evaluation, or is due to natural variations in groundwater, surface water, or the unsaturated zone.

3. Physical Evidence of a Release:

If either the Discharger or the Executive Officer determine that there is significant physical evidence of a new release pursuant to CCR Title 27, §20385(a)(3), the Discharger shall conclude that a release has been discovered and shall:

- a. Within **24 hours**, notify the Water Board by telephone or email of the release;
- b. Within **seven days** notify the Executive Officer of the release by certified mail (or acknowledge the Executive Officer's determination);
- c. Carry out the requirements of **Part IV C.4.** for potentially-affected mediums; and
- d. Carry out any additional investigations stipulated in writing by the Executive Officer for the purpose of identifying the cause of the release.

4. Release Discovery Response:

If it has been concluded that a new release has occurred, the Discharger shall do the following:

- a. If the determination is not based upon monitoring for COC, the Discharger shall sample for COC at all monitoring points in the affected medium. Within **seven days** of receiving the laboratory analytical results, the Discharger shall notify the Executive Officer, by certified mail, of the concentration of COC at each monitoring point. This notification shall include a synopsis, for each monitoring point, of the constituents that exhibit unusually high concentrations;
- b. The Discharger shall, within **90 days** of discovering the release, submit to the Executive Officer a Revised Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that: 1) meets the requirements of CCR Title 27, §20420 and §20425' and 2) satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well directly down gradient of the center of the release;
- c. The Discharger shall immediately begin delineating the nature and extent of the release to determine data or monitoring gaps, and if necessary, propose for Executive Officer approval, additional monitoring wells to assure that the Discharger can meet the requirements of CCR Title 27, §20425 to submit a delineation report within **90 days** of when the Executive Officer directs the Discharger to begin implementing the Evaluation Monitoring and Reporting Program.
- d. The Discharger shall, within **180 days** of discovering the release, submit to the Executive Officer a preliminary engineering feasibility study meeting the requirements of CCR Title 27, §20420; and

5. Release Beyond Facility Boundary:

Any time the Discharger or the Executive Officer concludes that a release from the Landfill has migrated beyond the facility boundary, the Discharger shall notify persons who either own or reside upon the land that directly overlies any part of the plume and are immediately down gradient of the plume (Affected Persons). The Discharger shall also

notify the County of Santa Cruz Environmental Health Services to verify that all downgradient Affected Persons are accounted for.

- a. Initial notification to Affected Persons and the County 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 Affected Persons and the County, 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.
- c. Each time the Discharger sends a notification to Affected Persons and the County (under a. or b. above), the Discharger shall, within **seven days** of sending such notification, provide the Executive Officer with both a copy of the notification and a current mailing list of Affected Persons.

PART V: DEFINITION OF TERMS

A. AFFECTED PERSONS

Individuals who either own or reside upon the land which directly overlies any part of that portion of a gas, or liquid phase release that may have migrated beyond the facility boundary.

B. CONCENTRATION LIMITS

The concentration limit for any given COC or monitoring parameter in a given monitored medium shall be either:

1. The constituent's statistically determined background value or tolerance limit, established using an Executive Officer approved method (**Part III**); or
2. In cases where the constituent's MDL is exceeded in less than 10 percent of historical samples, the MDL is the concentration limit defined in **Part II A.1**.

C. CONSTITUENTS OF CONCERN (COC)

An extensive list of constituents potentially present in the solid waste landfill. The COC for this Landfill are listed in **Table 3**.

D. MATRIX EFFECT

Any increase in the MDL or PQL for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

E. METHOD DETECTION LIMIT (MDL)

The lowest concentration at which a given laboratory, using a given analytical method to detect a given constituent, can differentiate with 99 percent reliability, between a sample which

contains the constituent and one which does not. The MDL shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory.

F. MONITORED MEDIUM

Those media that are monitored pursuant to this Monitoring and Reporting Program (e.g., groundwater, surface water, leachate, and other as specified).

G. MONITORING PARAMETERS

A list of constituents and parameters used for the majority of monitoring activities. The monitoring parameters for the Landfills are listed in **Table 2**.

H. MONITORING PERIOD

The duration of time, or frequency, during which sampling and reporting shall occur. The monitoring period for the various media and programs is specified in **Part I D.1** and **Part I D.2**.

I. PRACTICAL QUANTITATION LIMIT (PQL)

The lowest acceptable calibration standard (acceptable as defined for a linear response, or by actual curve fitting) times the sample extract dilution factor times any additional factors to account for matrix effects. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be re-stated from US EPA analytical method manuals. Laboratory derived PQLs are expected to agree closely with published US EPA estimated quantitation limits (EQL).

J. RECEIVING WATERS

Any surface water or groundwater that is subject to discharges or potential discharges of wastes due to runoff or percolation of water that is either generated by or comes into contact with waste materials.

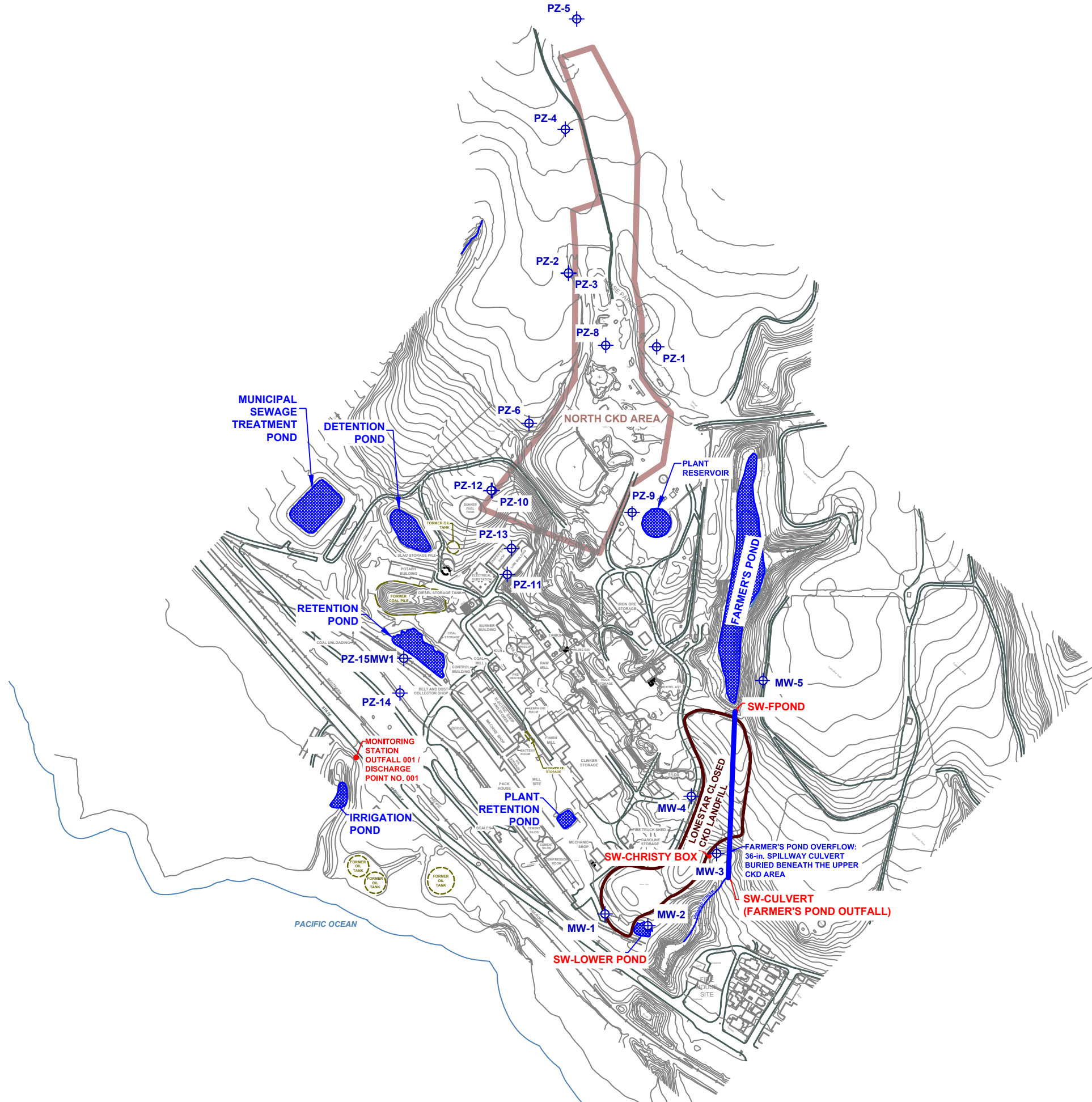
The Executive Officer may revise this MRP at any time.

Ordered By: John M. Robertson Digitally signed by John M. Robertson
Date: 2018.02.22 08:54:36 -08'00'
Executive Officer





February 22, 2018
Date

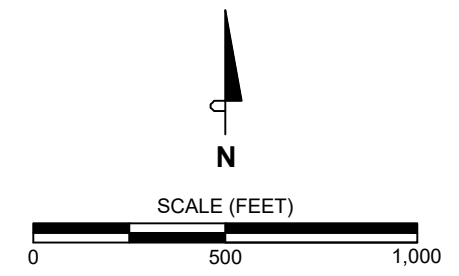
Figure:
MRP Figure 1 – Monitoring Location Map

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LEGEND

-  Approximate location of former site feature
-  Monitoring well
-  Approximate boundary of North CKD Landfill
-  Approximate boundary of Lonestar Closed CKD Landfill



SOURCE: Topographic Map of Davenport Cemex Plant by Towill Surveying, Mapping and GIS Services, October 2007.

MONITORING LOCATIONS MAP
CEMEX Davenport Cement Plant
CKD Landfills
MRP No. R3-2018-0001