

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2019-0033

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF TULARE
EXETER DISPOSAL SITE
CLASS III LANDFILL
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
TULARE COUNTY

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) finds that:

1. The County of Tulare (Discharger) owns and maintains the Exeter Disposal Site (Facility) located about 3.3 miles south of Exeter, in Section 34, T19S, R26E, MDB&M, as shown in **Attachment A**. The Facility is a solid waste landfill regulated under authority given in Water Code section 13000 et seq.; California Code of Regulations, title 27 (Title 27), section 20005 et seq.¹
2. The following documents are attached to this Order and hereby incorporated into and made a part of this Order by reference:
 - a. Attachment A—Site Location Map
 - b. Attachment B—Site Plan
 - c. Information Sheet
 - d. Monitoring and Reporting Program R5-2019-0033 (MRP)
 - e. Standard Provision and Reporting Requirements dated December 2015 (SPRRs)
3. The Facility is on a 49.4-acre property located at the northeast corner of the intersection of Road 188 and Avenue 242 near Exeter. The existing landfill consists of one unlined waste management unit (WMU) covering 34 acres and is shown in **Attachment B**. The Facility is comprised of Assessor's Parcel Numbers (APN) 153-210-051.
4. This Order updates the waste discharge requirements (WDRs) for the Facility's WMU or landfill, as part of an administrative policy of periodic review, to incorporate revisions to regulations and policies adopted thereunder, for continued post-closure maintenance and corrective action.
5. The Facility's landfill operated between 1952 and 1989, and ceased accepting waste in 1989. Closure construction began on 7 June 2005, was completed on 10 January 2006, and approved by Central Valley Water Board staff in February 2007.

¹ Unless otherwise specified, all sections cited herein are to Title 27.

6. On 16 June 2000, the Central Valley Water Board classified the Facility as a Class III waste disposal site with the adoption of WDRs Order 5-00-161. The Central Valley Water Board subsequently adopted WDRs Orders R5-2003-0114 and R5-2010-0072, which continued to classify the Facility as a Class III waste disposal site in accordance with §20004 et seq. This Order continues to classify the Facility as a Class III waste disposal site in accordance with Title 27.
7. The Facility's existing landfill consists of one closed, unlined WMU covering approximately 34 acres. There is a passive landfill gas venting system one-site and there no leachate collection and removal system. The Facility has two stormwater basins. One is a retention basin located along the eastern side of the Facility and the other is a pass-through basin located along the eastern half of the northern side of the Facility.
8. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated federal MSW regulations under the Resource Conservation and Recovery Act (RCRA), Subtitle D. These regulations are under 40 Code of Federal Regulations (CFR) section 258 and these regulations apply to all California Class II and Class III landfills that have accepted MSW after 9 October 1991. Since waste acceptance ceased prior to 9 October 1991, these regulations do not apply.
9. This Order implements the applicable regulations for discharges of solid waste to land through various prohibitions, specifications and provisions, as well as monitoring and reporting requirements. Prohibitions, specifications and provisions are listed in Sections A-H of the WDRs below, as well as in the SPRRs (incorporated herein). Monitoring and reporting requirements are included in MRP No. R5-2019-0033, and in the SPRRs. Generally, requirements are included in the SPRRs when they are based on regulations, or otherwise applicable to all landfills. Any site-specific deviations from the SPRRs are set forth in Sections A-H of the WDRs, which shall supersede any conflicting requirement in the SPRRs.
10. Title 27 contains regulatory standards for discharges of solid waste promulgated by the State Water Board and the California Department of Resources Recovery and Recycling (CalRecycle). In certain instances, this Order cites CalRecycle regulatory sections. Title 27, section 20012 allows the Central Valley Water Board to cite CalRecycle regulations from Title 27 where necessary to protect water quality provided it does not duplicate or conflict with actions taken by the Local Enforcement Agency (LEA) in charge of implementing CalRecycle's regulations.

WASTE CLASSIFICATION AND UNIT CLASSIFICATION

11. The Discharger previously discharged non-hazardous solid waste, including lesser amounts of municipal solid waste (as defined per 40 CFR § 258.1), and inert solid waste (as defined per Title 27, § 20230, subd. (a)).

SITE DESCRIPTION

12. The Facility is located on a topographically flat region of the San Joaquin Valley. The native ground surface is approximately 335 feet above mean sea level (MSL) and slopes approximately 10 feet per mile toward the west. The Facility overlies Quaternary-age alluvial deposits from Lewis Creek, which consist of moderately to highly permeable, interbedded fluvial deposits of gravelly-sand, silty-sand, silt, and clay. Information is not available about the

type of basement rocks directly underlying the Facility. Granite, metagabbro, metasedimentary rock, and ultramafic rock outcrop approximately four miles east of the Facility. The alluvium underlying the Facility may be derived in part, from the weathering and erosion of some or all of the aforementioned igneous and metamorphic rocks.

13. Land uses within one mile of the Facility include agricultural in all directions with some residential to the south and east, a wastewater treatment plant and former industrial surface impoundments to the southeast, and a dairy to the west. Land to the west (West Side Brine Ponds) and southeast (East Side Brine Ponds) of the Facility was previously used by the City of Lindsay and Lindsay Olive Growers for the discharge of olive processing brine water. Discharges of olive processing brine water to the West Side and East Side Brine Ponds ceased in 1992. Neither of these sites is owned by the Discharger and both these sites are regulated under separate WDRs and/or Cleanup and Abatement Order(s).
14. There are approximately 25 municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the Facility.
15. The measured hydraulic conductivity of the native soils underlying the landfill units ranges between 7×10^{-4} and 5×10^{-5} centimeters per second (cm/s).
16. Based on a site-specific seismic analysis, the controlling maximum probable earthquake (MPE) for the site is a moment of magnitude 6.7 event along the Coalinga Nose Fault at a closest rupture distance of 68 miles/kilometers from the site. It is estimated that a MPE event would produce a peak ground acceleration of 0.03 g.
17. The Facility receives an average of 11 inches of precipitation per year as measured at the Lindsay Station. The mean pan evaporation is 79 inches per year as measured at the Delano Government Camp Station.
18. The 100-year, 24-hour precipitation event for the Facility is estimated to be 4.11 inches based on the NOAA Atlas 14 Point Precipitation Frequency Estimates for the Lindsay Station.
19. The Facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 06107C1300E. However, the majority of the Facility is within the Zone X designated area. Areas within Zone X have a 0.2 percent Annual Chance Flood Hazard or have a 1 percent annual chance flood with an average depth of less than one foot or with drainage areas of less than one square mile.
20. The stormwater basins are located along the northern and eastern side of the Facility as shown on **Attachment B**. The basins detain storm water during the rainy season and are normally dry during the summer months.

SURFACE WATER AND GROUNDWATER CONDITIONS

21. The Facility is situated within the Tulare Lake Basin (Basin). The Central Valley Water Board's operative *Water Quality Control Plan for the Tulare Lake Basin* (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters within the Basin.

22. Surface water drainage is toward Elk Bayou, which is a tributary of the Tule River in the Kaweah Hydrologic Area (558.10) of the Basin. Surface water in the Kaweah Hydrologic Area are designated as Valley Floor Water in the Basin Plan.
23. The designated beneficial uses of the Tule River, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; navigation; water contact recreation; non-contact water recreation; commercial and sport fishing; warm fresh water habitat; wildlife habitat; and groundwater recharge.
24. Lewis Creek has been monitored when water is present since 1996 and no waste constituents have been detected in the water within Lewis Creek since the monitoring was initiated.
25. Three groundwater bearing zones have been identified beneath the Facility. The unconfined groundwater zone historically occurred down to a depth of approximately 80 feet below ground surface (bgs) but has been dry beneath the Facility in recent years. A 70-foot confining unit separates the unconfined groundwater zone from the upper semi-confined groundwater zone. The upper semi-confined groundwater zone occurs from approximately 150 feet bgs to 300 feet bgs. The lower semi-confined groundwater zone occurs at 300 feet bgs and below. The lower semi-confined aquifer has not historically been monitored.
26. During the 1st and 2nd quarter of 2018, groundwater elevations in the upper confined zone ranged from approximately 149 to 168 feet bgs and 153 to 173 feet bgs, respectively. Groundwater elevations ranged from approximately 167 to 187 feet MSL and 161 to 183 feet MSL, respectively. Groundwater was present in the unconfined zone during these quarters at a depth of 88 and 91 feet bgs, respectively.
27. Monitoring data from the 2nd semiannual 2017 self-monitoring report indicate background groundwater quality for first encountered groundwater had specific conductance of 3,400 microsiemens/cm, with total dissolved solids (TDS) of 2,300 milligrams per liter (mg/L). Downgradient wells had a specific conductance of 970 to 2,100 microsiemens/cm and a TDS concentration of 540 to 1,200 mg/L, respectively.
28. Inorganic waste constituents in groundwater beneath the Facility are derived from the olive brine waste water previously discharged to the City of Lindsay and Lindsay Olive Growers olive brine ponds located southeast and west of the Facility. The inorganic waste constituents in groundwater that have originated from the West Side Brine Ponds and East Side Brine Ponds are regulated by separate orders. Additionally, granite, metagabbro, metasedimentary rock, and ultramafic rock outcrop approximately four miles east of the Facility. The alluvium underlying the Facility may be derived in part, from the weathering and erosion of some or all of the aforementioned igneous and metamorphic rocks. As a result, inorganic constituent concentrations beneath the Facility may be partially due to the alluvium beneath and upgradient of the Facility.
29. The direction of groundwater flow in the upper semi-confined groundwater zone is generally toward the west-southwest. The estimated average groundwater gradient is approximately 0.005 feet per foot.
30. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply

GROUNDWATER, SURFACE WATER, AND UNSATURATED ZONE MONITORING

31. The existing groundwater monitoring network for the landfill units consists of groundwater monitoring wells as described in the MRP.
32. The existing surface water detection monitoring system consists of a background monitoring point on Lewis Creek located north of the Facility and a downgradient monitoring point on Lewis Creek located immediately northwest of the northwest corner of the Facility.
33. There is no unsaturated zone monitoring at the Facility as it was previously determined to be infeasible and unnecessary due to the following: the infeasibility to install soil-pore liquid sampling devices beneath the closed WMU; the low levels of maximum detected off-site volatile organic compounds (VOCs) and the comingling of the detected VOCs with a regional plume; the final cover system and passive landfill gas venting system should minimize landfill gas migration of VOC constituents to groundwater; and, a corrective action monitoring program is in operation.
34. Historically, there have been semi-annual monitoring periods where the Discharger's detection monitoring program (DMP) for groundwater at the landfill did not satisfy the requirements contained in Title 27 due to most of the wells within its monitoring network being dry. However, the most recent data has shown some increase in water levels and some previously dry wells have been able to be sampled again. Due to the inconsistency in compliance, the Discharger is being required to submit an evaluation of its detection monitoring system after both the 2019 semiannual monitoring periods.
35. VOCs are often detected in a release from a MSW landfill and are often associated with releases of landfill gas rather than leachate. Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a landfill unit. Title 27, sections 20415, subdivisions (e)(8) and (9) allows the use of a non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a landfill unit in accordance with Title 27, section 20415, subdivisions (b)(1)(B)2.-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
36. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27, section 20080, subdivision (a)(1). Water Code section 13360, subdivision (a)(1) allows the Central Valley Water Board to specify requirements to protect groundwater or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
37. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a landfill unit, the SPRRs specify a non-statistical method for the evaluation of monitoring data for non-naturally occurring compounds. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a landfill unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL) [a.k.a, laboratory reporting limit (RL)], indicates that a release of waste from a Unit has occurred.

Following an indication of a release, verification testing must be conducted to determine whether there has been a release from the landfill unit or the detection was a false detection. The detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

38. For a naturally occurring constituent of concern, the Title 27 requires concentration limits for each constituent of concern be determined as follows:
 - a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415, subdivision (e)(8); or
 - b. By an alternate statistical method meeting the requirements of Title 27, section 20415, subdivision (e)(8)(E).
39. The Discharger submitted a Water Quality Protection Standard (WQPS) report proposing statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. The WQPS report proposed to use Interwell data analysis to calculate prediction limits for the monitored constituents. The WQPS and approved data evaluation methods are included in the MRP.

GROUNDWATER DEGRADATION AND CORRECTIVE ACTION

40. Historically, the Discharger implemented a DMP pursuant to Title 27, section 20420, and determined that several organic and possibly inorganic waste constituents were released by the WMU to groundwater. An evaluation monitoring program (EMP) was completed in September 2005 and determined the nature and extent of the release, which consisted of the following VOCs: tetrachloroethylene (PCE); trichloroethylene (TCE); cis-1,2-dichloroethylene (cis-1,2-DCE); 1,1-dichloroethylene (1,1-DCE); 1,1-dichloroethane (1,1-DCA); dichlorodifluoromethane (CFC-12); 1,2-dichloropropane; and vinyl chloride.
41. At the time of the EMP, the lateral extent of the VOC plume in the unconfined groundwater was approximately 1,750 feet west of the WMU and approximately 300 feet south of the WMU. The lateral extent of the VOC plume in the upper semi-confined groundwater zone was approximately 1,400 feet west of the WMU and approximately 1,650 feet south of the WMU. The VOC plume extended beyond the Facility boundary towards the west and south. The vertical extent of VOC migration was approximately 294 feet bgs, near the base of the upper semi-confined groundwater zone.
42. An Engineering Feasibility Study for corrective action was approved by Central Valley Water Board staff on 28 July 2006. The selected corrective action measure was monitored natural attenuation (MNA) with source reduction through the passive landfill gas venting system. Off-site private agricultural and domestic wells, along with on-site monitoring wells, are utilized for the MNA.
43. All of the groundwater monitoring wells in the unconfined groundwater zone are dry and many of the groundwater monitoring wells in the upper semi-confined groundwater zone are dry. As such, there have been no monitoring points in the unconfined groundwater zone and minimal monitoring points in the upper semi-confined groundwater zone in recent years. However,

groundwater monitoring results from the remaining wells in the upper semi-confined groundwater zone have only had low level detections of PCE (0.56 µ/L and 1.2 µ/L) in the most recent groundwater monitoring event (2nd semiannual 2017).

LANDFILL CLOSURE

44. Title 27, section 21090 provides the minimum prescriptive final cover components for landfills consisting of, in ascending order, the following layers:
 - a. Two-foot soil foundation layer.
 - b. One-foot soil low flow-hydraulic conductivity layer, less than 1×10^{-6} cm/s or equal to the hydraulic conductivity of any bottom liner system.
 - c. Geomembrane layer (this layer is required for composite-lined landfills for equivalency to bottom liner).
 - d. One-foot soil erosion resistant/vegetative layer.
45. Title 27 allows engineered alternative final covers provided the alternative design will provide a correspondingly low flow-through rate throughout the post-closure maintenance period.
46. The Discharger submitted a design plan for the closure of the landfill in a Final Closure Plan dated January 2005. The Final Closure was approved by the California Integrated Waste Management Board on 16 May 2005 with Central Valley Water Board staff concurrence. The plan proposed the construction of an engineered alternative in lieu of the prescriptive cover design specified in Title 27, section 21090, subdivision (a). The engineered alternative consists of the following design (in ascending order): two-foot thick foundation layer, a geosynthetic clay liner, and a two-foot thick vegetated soil layer.
47. The Discharger has demonstrated that the engineered alternative final cover meets the performance goals of Title 27 and that it is equivalent to the prescriptive standard.
48. The Discharger performed a slope stability analysis for the proposed final cover. The Discharger's static and dynamic stability analysis demonstrates that the side slopes of the final cover will be stable in accordance with the requirements of Title 27.
49. A survey of the final cover was conducted for later comparison with iso-settlement surveys and required to be conducted every five years. (Title 27, § 21090, subd. (e)(1).)

LANDFILL POST-CLOSURE MAINTENANCE

50. The Discharger submitted a *Final Post-Closure Maintenance Plan* dated December 2006 for post-closure maintenance of the Facility. The plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period, and includes a post-closure maintenance cost estimate for the entire Facility. Inspection and maintenance will include the condition of the final cover, landfill settlement, vegetative cover, and site security. The plan has been in effect since February 2007 will be implemented for a minimum period of 30 years or until the waste no longer poses a threat to water quality, whichever is greater.

51. Once every five years during the post-closure maintenance period, iso-settlement maps will be prepared to determine the amount of differential settlement occurring over the previous five years. This Order requires iso-settlement maps to be prepared and submitted every five years. (Title 27, § 21090, subd. (e)(2).)
52. The completed final cover will be periodically tested for damage or defects by monitoring surface emissions pursuant to California Code of Regulations, Title 17, section 95471, subdivision (c), and Title 27, section 21090, subdivision (a)(4)(A). Defects will be repaired and tested for adequacy based on the closure CQA Plan.

FINANCIAL ASSURANCES

53. Title 27, sections 21840 and 22211 require a cost estimate for landfill post-closure maintenance. The amount of the cost estimate for post-closure maintenance in 2017 dollars was \$1.48 million. This Order requires that the Discharger maintain financial assurance with CalRecycle in at least the amount of the post-closure maintenance cost estimate adjusted annually for inflation. Documents provided by the Discharger indicate that the mechanism utilized for the assurance liability funds are cash in treasury. As of July 2018, the balance of the post-closure maintenance was \$1.48 million.
54. Title 27, section 22211 requires a cost estimate for corrective action of all known or reasonably foreseeable releases. The amount of the cost estimate for corrective action in 2017 dollars was \$0.74 million. This Order requires that the Discharger maintain financial assurance with the CalRecycle in at least the amount of the cost estimate adjusted annually for inflation. As of July 2018, the balance of the corrective action fund was \$0.74 million
55. Title 27, section 22100, subdivision (b) requires owners and operators of disposal facilities that are required to be permitted as solid waste landfills to provide cost estimates for initiating and completing corrective action for known or reasonably foreseeable releases of waste. Title 27, section 22101 requires submittal of a *Water Release Corrective Action Estimate* and a *Non-Water Release Corrective Action Cost Estimate*. The *Water Release Corrective Action Estimate* is for scenarios where there is statistically significant evidence of a release of waste to ground or surface water when comparing point-of-compliance analytes concentrations to background concentrations. The *Non-Water Release Corrective Action Cost Estimate* is for complete replacement of the landfill final cover system, however a site-specific corrective action plan pursuant to Title 27, section 22101, subdivision (b)(2) may be provided in lieu of the final cover replacement cost estimate. Title 27, section 22211 requires establishment of financial assurances in the amount of an approved *Water Release Corrective Action Estimate* or an approved *Non-Water Release Corrective Action Cost Estimate*, whichever is greater.

CEQA AND OTHER CONSIDERATIONS

56. The action to revise waste discharge requirements for this existing Facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code section 21000 et seq., and the CEQA guidelines (Cal. Code Regs., tit. 14, § 15301).
57. This order implements:
 - a. The applicable Basin Plan (see Finding No. 21); and

- b. The prescriptive standards and performance goals of Title 27, effective 18 July 1997, and subsequent revisions.
58. Based on the threat and complexity of the discharge, the Facility is determined to be classified 2-B as defined below:
 - a. Category 2 threat to water quality, defined as, "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
 - b. Category B complexity, defined as, "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."
59. Pursuant to Water Code section 13263, this Order implements the Central Valley Water Board's Basin Plan, which in turn incorporates the State Water Board's Statement of Policy with Respect to Maintaining High Quality of Waters in California, Resolution No. 68-16 (Antidegradation Policy). Where applicable, the Antidegradation Policy effectively constrains the Central Valley Water Board's discretion to authorize degradation of "high quality waters" in two ways. First, WDRs must maintain the existing water quality of "high quality waters" unless is demonstrated that any degradation: (1) will be consistent with maximum benefit to the people of the State; (2) will not unreasonably affect present and anticipated beneficial uses of water; and (3) will not result in water quality below objectives specified in the Basin Plan. Second, WDRs must prescribe best practicable treatment and control (BPTC) of discharges necessary to avoid a pollution or nuisance, and maintain the highest water quality consistent with the maximum benefit to the people of the State.
60. As a threshold matter, the Anti-Degradation Policy only applies when an activity will result in a discharge to "high quality waters," which are defined as waters sufficient in quality to support the beneficial uses of water designated in the Basin Plan. Because determinations are made on a constituent-by-constituent basis, a groundwater aquifer may be "high-quality" as to some constituents but not others. (See State Water Board, Resolution No. 91-10.)
61. This Order prescribes WDRs that ensure waste will not be discharged to the waters of the State, and that no degradation will occur. Accordingly, this Order complies with the Antidegradation Policy.
62. Water Code section 13267, subdivision (b) provides that: "[i]n conducting an investigation..., the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharge or discharging, or who proposed to discharge ... shall furnish, under penalty of perjury, technical or monitoring program reports..." provided that "[t]he burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."
63. The technical reports required by this Order and the attached MRP are necessary to assure compliance with these waste discharge requirements.

PROCEDURAL REQUIREMENTS

64. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
65. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
66. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to California Water Code sections 13263 and 13267, that Order R5-2010-0072 is rescinded (except for purposes of enforcement); and that the County of Tulare (Discharger), its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of any additional waste at the Facility is prohibited.
2. The cessation of any corrective action measure is prohibited without written Executive Officer approval.
3. The Discharger shall comply with all applicable Standard Prohibitions set forth in Section C of the SPRRs.

B. DISCHARGE SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this Facility in violation of this Order. If the Discharger is unable to remove and relocate the waste, the Discharger shall submit a report to the Central Valley Water Board explaining how the discharge occurred, why the waste cannot be removed, and any updates to the waste acceptance program necessary to prevent re-occurrence. If the waste is a hazardous waste, the Discharger shall immediately notify the Department of Toxic Substances Control (DTSC).
2. Water used for maintenance shall be limited to the minimum amount for dust control, construction, or proper compaction of the cover during any necessary repairs.
3. The Discharger shall comply with all applicable Standard Prohibitions listed in Section D of the SPRRs.

C. FACILITY SPECIFICATIONS

1. Annually, prior to the anticipated rainy season but no later than **31 October**, the Discharger shall implement any necessary erosion control measures and any necessary construction, maintenance, or repairs of precipitation and drainage control

facilities to prevent erosion or flooding of the Facility and to prevent surface drainage from contacting or percolating through wastes.

2. Surface drainage and subsurface drainage from tributary areas and internal site drainage from surface or subsurface soils shall not contact or percolate through wastes.
3. Cover materials shall be graded to divert precipitation from the waste management unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation.
4. Precipitation and drainage control systems for the final cover system shall be maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation event condition.
5. The closed landfill shall be maintained to prevent inundation or washout due to floods with a 100-year return period, and to prevent, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, and washout under the 100-year wet season.
6. The Discharger shall comply with all applicable Standard Facility Specifications listed in Section E of the SPRRs.

D. POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. The Discharger shall maintain the structural integrity and effectiveness of all containment structures, maintain the cover as necessary to correct the effects of settlement and other adverse factors and prevent erosion and related damage to the cover due to drainage.
2. The Discharger shall maintain in good working order any Facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
3. The Discharger shall comply with all applicable Standard Closure and Post-Closure Specifications listed in Section G of the SPRRs.
4. The Discharger shall monitor and implement the approved Post-Closure Maintenance Plan, dated December 2006, and any approved revisions thereto.

E. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for post-closure maintenance for the landfill in at least the amounts described in **Finding 53**, adjusted for inflation annually. A report regarding financial assurances for post-closure maintenance shall be submitted to the Central Valley Water Board by **1 October of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of

notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate

2. The Discharger shall update the final post-closure maintenance plan (PCMP) any time there is a change that will increase the amount of the post-closure maintenance cost estimate. The updated PCMP shall be submitted to the Central Valley Water Board, the Local Enforcement Agency, and CalRecycle. The PCMP shall meet the requirements of Title 27, section 21769, subdivision (b), and include a lump sum estimate of the cost of carrying out all actions necessary to close each Unit, to prepare detailed design specifications, to develop the final closure and post-closure maintenance plan, and to carry out the first thirty years of post-closure maintenance. Reports regarding financial assurance required in **Section E.1** above shall reflect the updated cost estimate.
3. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for initiating and completing corrective action for all known or reasonably foreseeable releases in at least the amount of the annual inflation-adjusted cost estimate described in **Finding 54**. A report regarding such financial assurances shall be submitted to the Central Valley Water Board by **1 October of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate.
4. The Discharger shall comply with all Standard Financial Assurance Specifications listed in Section H of the SPRRs.

F. MONITORING SPECIFICATIONS

1. The Discharger shall comply with the attached MRP, which is incorporated herein.
2. The Discharger shall monitor the final cover, in accordance with the Post-Closure Maintenance Plan and the attached MRP.
3. As specified in the MRP, the Discharger shall enter all reports and monitoring data into the online Geotracker database as required by Division 3 of Title 27 and Chapter 30, Division 3 of title 23.
4. The Discharger shall comply with all Standard Monitoring Specifications and Response to a Release Specifications listed in Sections I and J of the SPRRs.

G. CORRECTIVE ACTION SPECIFICATIONS

1. The Discharger shall conduct corrective action measures in accordance with the corrective action program Central Valley Water Board staff concurred with on 28 July 2006. The corrective action measure consists of MNA in conjunction with passive landfill gas venting.
2. Any modifications to the corrective action program, or a proposal for an alternative for a corrective action program, needs to be approved by the Executive Officer. A proposal

to modify the corrective action program or a proposal for an alternative corrective action program shall be submitted **90 days prior to** the proposed modification of a corrective action program or an alternative corrective action program.

3. **By 28 February of each year**, the Discharger shall submit an assessment of its corrective action program. This assessment can be combined with its 2nd semiannual and annual groundwater monitoring reports.
4. Corrective action measures may be terminated when the Discharger demonstrates to the satisfaction of the Executive Officer that the concentrations of all waste constituents are reduced to levels below their respective concentration limits throughout each zone affected by the release.
5. After suspending the corrective action measures, the Discharger shall demonstrate that the concentration of each waste constituent in each sample from each monitoring point remained at or below its concentration limit for at least three consecutive years, beginning immediately after the suspension of corrective action measures.
6. Upon completion of corrective action, the Discharger shall certify, in writing, that corrective action has been completed in compliance with Title 27 and the WDRs. The certification shall be signed by a California Registered Civil Engineer or Professional Geologist.
7. If at any time, either the Discharger or the Executive Officer determines that the corrective action program is unsuccessful in remediating waste constituents (i.e. does not satisfy the provisions of Title 27, section 20430), the Discharger shall, **within 90 days of making the determination or of receiving written notification from the Central Valley Water Board of such determination**, submit an amended report of waste discharge for Executive Officer approval, to make appropriate modifications to the corrective action program that includes a detailed work plan, and/or proposes other alternative correction action methods to remediate VOCs in groundwater.

At a minimum, a determination that the corrective action program is unsuccessful in remediating waste constituents may result if one of the following conditions is met:

- a. Waste constituent concentrations in point of compliance groundwater monitoring wells exhibit an increasing trend not originally predicted after implementation of corrective action; or
- b. Point of Compliance groundwater monitoring wells exhibit VOC concentration increases indicative of a new or renewed release; or
- c. Significant waste constituent concentrations are identified in corrective action groundwater monitoring wells, or off-site agricultural or domestic supply wells; or
- d. VOC concentrations are not decreasing at a sufficient rate to meet the remediation objectives; or

The amended report of waste discharge shall include the following:

- a. A discussion as to why existing corrective action measures have been ineffective or insufficient;
 - b. A revised evaluation monitoring plan, if necessary, to further assess the nature and extent of the release;
 - c. A discussion of corrective action needs and alternatives;
 - d. Proposed alternative corrective action measures, as necessary;
 - e. A plan to monitor the progress of corrective action measures consistent with the MRP; and
 - f. Cost estimates for implementing additional and/or alternative corrective action measures, including monitoring.
8. **Within one year** of Executive Officer approval of the amended report of waste discharge that determines that the corrective action program is unsuccessful in remediating VOCs in groundwater, the Discharger needs to implement a modified or alternative corrective action program.

H. PROVISIONS

1. The Discharger shall maintain a copy of this Order at its office, including the MRP and the SPRRs dated December 2015 which are part of this Order, and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.
3. The Discharger shall comply with MRP, which is incorporated into and made part of this Order by reference.
4. The Discharger shall comply with the applicable portions of the SPRRs and/or Title 27.
5. If there is any conflicting or contradictory language between the WDRs, the MRP, or the SPRRs, then language in the WDRs shall supersede either the MRP or the SPRRs, and language in the MRP shall supersede the SPRRs.
6. All reports required by this Order shall be submitted pursuant to Water Code section 13267, and shall be prepared by a California-registered Civil Engineer or Certified Engineering Geologist.

7. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

Task	Compliance Date
1. Submit an evaluation of the groundwater detection monitoring program	31 January 2020
2. Annual Review of Financial Assurance	1 October, Annually

8. The Discharger shall comply with all General Provisions listed in Section K of the SPRRs.
9. The Central Valley Water Board has converted to a paperless office system. All project correspondence and reports required under this Order shall therefore be submitted electronically rather than in paper form, as follows:

All technical reports and monitoring reports required under this Order shall be converted to PDF and uploaded via internet to the State Water Board's GeoTracker database at <http://geotracker.waterboards.ca.gov>, as specified in California Code of Regulations, title 23, sections 3892(d) and 3893. Project-associated analytical data shall be similarly uploaded to the GeoTracker database in an appropriate format specified under this Order under a site-specific global identification number. Information on the GeoTracker database is provided at:

http://www.swrcb.ca.gov/ust/electronic_submittal/index.shtm

Notification of the Geotracker upload shall be emailed to the Central Valley Water Board at: centralvalleyfresno@waterboards.ca.gov. To ensure that the submittal is routed to the appropriate staff as quickly as possible, the following information shall be included in the body of the email:

Attention:	Title 27 Compliance & Enforcement Unit Or Title 27 Permitting Unit
Report Title	
Geotracker Upload ID	
Discharger name:	County of Tulare
Facility name:	Exeter Landfill
County:	Tulare
CIWQS place ID:	223119

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23 (§2050 and following). The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday, the petition must be

received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet (at the address below), and will be provided upon request.

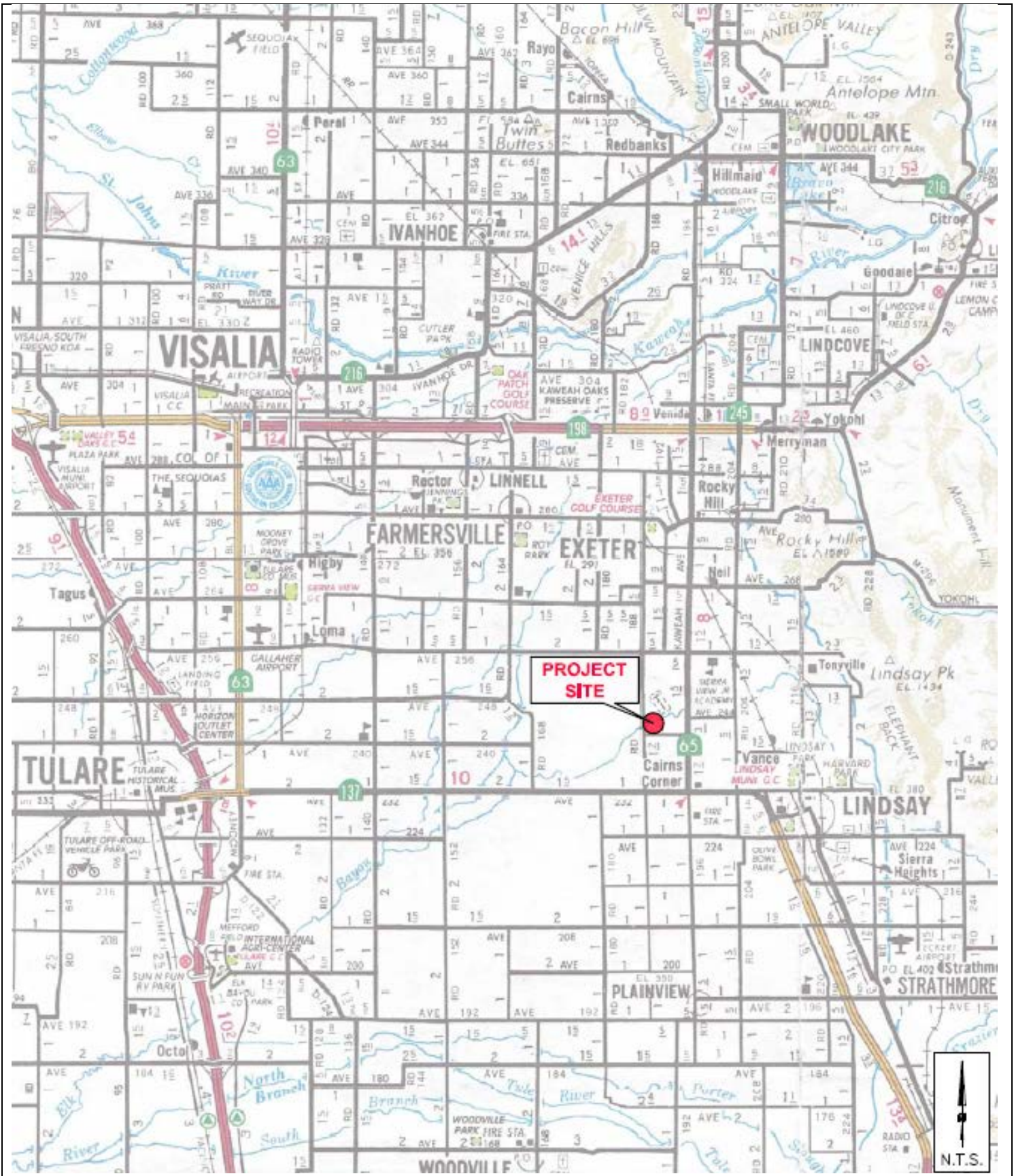
http://www.waterboards.ca.gov/public_notices/petitions/water_quality

I, PATRICK PULUPA, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 5 April 2019.

Original Signed By

PATRICK PULUPA
Executive Officer

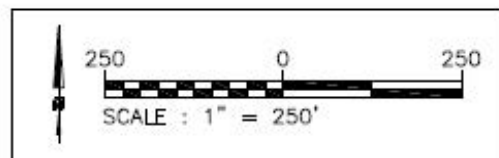
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WASTE DISCHARGE REQUIREMENTS
 ORDER NO. R5-2019-0033
 COUNTY OF TULARE
 EXETER DISPOSAL SITE
 TULARE COUNTY
 ATTACHMENT A



LEGEND	
	M-1 GROUNDWATER MONITORING WELL (UNCONFINED GROUNDWATER ZONE)
	M-14P GROUNDWATER MONITORING WELL (UPPER SEMI-CONFINED GROUNDWATER ZONE)
	S-B SURFACE WATER MONITORING POINT
	WMU WASTE MANAGEMENT UNIT



WASTE DISCHARGE REQUIREMENTS
 ORDER NO. R5-2019-0033
 COUNTY OF TULARE
 EXETER DISPOSAL SITE
 TULARE COUNTY
 ATTACHMENT B

INFORMATION SHEET

ORDER R5-2019-0033
COUNTY OF TULARE
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
EXETER DISPOSAL SITE
TULARE COUNTY

The County of Tulare (hereinafter Discharger) owns and maintains the Exeter Disposal Site (Facility) located approximately 3.3 miles south of Exeter at the northeast corner of the intersection of Road 188 and Avenue 242, in Section 34, T19S, R26E, MDB&M. The Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements (WDRs) Order No. R5-2010-0072 on 27 May 2010, which continued to classify the Facility as a Class III landfill as defined in Title 27, California Code of Regulations, section 20005 et seq. (hereafter Title 27). The proposed revised Order provides for continuing post-closure maintenance and corrective action.

The 49.4-acre Facility consists of one unlined waste management unit covering approximately 34 acres. The Facility accepted waste from the 1950's until 1989. A final cover system was constructed in 2007 in accordance with Title 27. The final cover system consists of the following design (in ascending order): two-foot thick foundation layer, a geosynthetic clay liner, and a two-foot thick vegetated soil layer.

Three groundwater bearing zones have been identified beneath the facility. The unconfined groundwater zone historically occurred down to a depth of approximately 80 feet bgs but has been dry beneath the Facility in recent years. A 70-foot confining unit separates the unconfined groundwater zone from the upper semi-confined groundwater zone. The upper semi-confined groundwater zone occurs from approximately 150 feet bgs to 300 feet bgs. The lower semi-confined groundwater zone occurs at 300 feet bgs and below. The lower semi-confined aquifer has not historically been monitored. During the 1st and 2nd quarter of 2018, groundwater elevations in the upper confined zone ranged from approximately 149 to 168 feet below ground surface (bgs) and 153 to 173 feet bgs, respectively. Groundwater elevations ranged from approximately 167 to 187 feet MSL and 161 to 183 feet MSL, respectively. Groundwater was present in the unconfined zone during these quarters at a depth of 88 and 91 feet bgs, respectively.

Volatile organic compounds (VOCs) have been detected in groundwater and the Facility is in corrective action. The approved corrective action measure is monitored natural attenuation and passive landfill gas venting. The latest self-monitoring report (2nd Semiannual 2017) reported low-levels of tetrachloroethylene (0.56 µ/L and 1.2 µ/L) in two downgradient groundwater monitoring wells. The current groundwater detection monitoring system has been in and out of compliance with the applicable requirements of Title 27 due to most of the wells within the monitoring network being dry. However, the most recent data has shown some increase in water levels and some previously dry wells have been able to be sampled again. Due to the inconsistency in compliance, the Discharger is being required to submit an evaluation of its detection monitoring system after both the 2019 semiannual monitoring periods.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2019-0033
FOR
COUNTY OF TULARE
EXETER DISPOSAL SITE
CLASS III LANDFILL
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
TULARE COUNTY

This monitoring and reporting program (MRP) is issued pursuant to California Water Code section 13267 and incorporates requirements for groundwater and surface water monitoring and reporting; facility monitoring, maintenance, and reporting; and financial assurances reporting contained in California Code of Regulations, title 27, section 20005, et seq. (Title 27), Waste Discharge Requirements (WDRs) Order R5-2019-0033, and the Standard Provisions and Reporting Requirements (SPRRs) dated December 2015. Compliance with this MRP is ordered by the WDRs and the Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer.

A. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and surface water in accordance with Standard Monitoring Specifications in Section I of the SPRRs and the Monitoring Specifications in Section F of the WDRs. All monitoring shall be conducted in accordance with the most current approved *Sample Collection and Analysis Plan*, which includes quality assurance/quality control standards.

All compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) as indicated and listed in Tables I through V.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program, and are identified in the approved Sample Collection and Analysis Plan.

The monitoring program of this MRP includes:

<u>Section</u>	<u>Monitoring Program</u>
A.1	Groundwater Monitoring
A.2	Leachate Seep Monitoring
A.3	Surface Water Monitoring
A.4	Facility Monitoring
A.5	Corrective Action Monitoring

1. Groundwater Monitoring

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27, Subchapter 3 “Water Monitoring”. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The current groundwater detection monitoring system has been in and out of compliance with the applicable requirements of Title 27 due to most of the wells within the monitoring network being dry. However, the most recent data has shown some increase in water levels and some previously dry wells have been able to be sampled again. Due to the inconsistency in compliance, the Discharger is being required to submit an evaluation of its detection monitoring system after both the 2019 semiannual monitoring periods.

The current groundwater monitoring network consists of the following:

<u>Mon Pt.</u>	<u>Status</u>	<u>Zone</u>
M-1	Other	Unconfined
M-2A	Background	Unconfined
M-2B	Background	Unconfined
M-2C	Background	Unconfined
M-3A	Detection, Corrective Action	Unconfined
M-3B	Detection, Corrective Action	Unconfined
M-3C	Detection, Corrective Action	Unconfined
M-4	Detection, Corrective Action	Unconfined
M-5	Detection, Corrective Action	Unconfined
M-6A	Background	Unconfined
M-6B	Background	Unconfined
M-6C	Background	Unconfined
M-7	Detection, Corrective Action	Unconfined
M-8A	Detection, Corrective Action	Unconfined
M-8B	Detection, Corrective Action	Unconfined
M-8C	Detection, Corrective Action	Unconfined
M-9	Detection, Corrective Action	Unconfined
M-10	Other	Unconfined
M-11	Other	Unconfined
M-12D	Background	Unconfined
P-1	Other	Unconfined/Confining Unit

The current groundwater monitoring network consists of the following (continued):

<u>Mon Pt.</u>	<u>Status</u>	<u>Zone</u>
M-6P	Background	Upper Semi-Confined
M-12P	Background	Upper Semi-Confined
M-13P	Detection, Corrective Action	Upper Semi-Confined
M-14P	Detection, Corrective Action	Upper Semi-Confined
Brower Well #71-1 ¹	Off-Site, Corrective Action	Upper Semi-Confined
Brower Well #74-R ¹	Off-Site, Corrective Action	Upper Semi-Confined
East Hilaridies Well #44-1 ¹	Off-Site, Corrective Action	Upper Semi-Confined
West Hilaridies Well #44-1a ¹	Off-Site, Corrective Action	Upper Semi-Confined
LMW 13 ¹	Off-Site, Corrective Action	Upper Semi-Confined
LMW 16A ¹	Off-Site, Corrective Action	Upper Semi-Confined
LMW 20 ¹	Off-Site, Corrective Action	Upper Semi-Confined

¹The off-site corrective action program wells represent a pool of monitoring wells and water supply wells owned by others that may or may not be utilized for monitoring since access is not always guaranteed.

Groundwater samples shall be collected from the background wells, detection monitoring wells, corrective action monitoring wells, and any additional wells added as part of the approved groundwater monitoring system. The collected samples shall be analyzed for the parameters and constituents listed in Table I in accordance with the specified methods and frequencies. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

Once per quarter, the Discharger shall measure the groundwater elevation in each well, determine groundwater flow direction, and estimate groundwater flow rates in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation monitored. The results shall be reported semiannually, including the times of expected highest and lowest elevations of the water levels in the wells, pursuant to Title 27, section 20415(e)(15).

Samples collected for the COC monitoring specified in Table I shall be collected and analyzed in accordance with the methods listed in Table V every five years. Five-year COCs were last monitored in 2017 and shall be monitored again in **2022**. The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

2. Leachate Seep Monitoring

Leachate that seeps to the surface from a landfill unit shall be sampled and analyzed for the Field and Monitoring Parameters listed in Table II upon detection. The quantity of leachate shall be estimated and reported as Leachate Flow Rate (in gallons/day). Reporting for leachate seeps shall be conducted as required in Section B.3 of this MRP, below.

3. Surface Water Monitoring

The Discharger shall operate a surface water detection monitoring system for any landfill facility where runoff from landfill areas flows or could flow to waters of the United States. The monitoring system shall comply with the applicable provisions of Title 27, sections 20415 and 20420. The current surface water detection monitoring system meets the applicable requirements of Title 27.

The current surface water monitoring points for the landfill are:

<u>Mon Pt.</u>	<u>Status</u>
S-B	Background or Upstream
S-D	Discharge or Downstream

For surface water detection monitoring, a sample shall be collected when possible at each monitoring point location and analyzed for the monitoring parameters and constituents in accordance with the methods and frequency specified in Table III. All surface water monitoring samples shall be collected and analyzed for the 5-year COCs specified in Table III when possible to coincide with any 5-year COC event for groundwater monitoring.

4. Facility Monitoring

a. Annual Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for drainage control systems, cover systems, and groundwater monitoring wells; and shall assess preparedness for winter conditions (including but not limited to erosion and sedimentation control). The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. Annual facility inspection reporting shall be submitted as required in Section B.4 of this MRP.

b. Major Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities and all landfill side slopes for damage **within 7 days** following major storm events capable of causing damage or significant erosion. The Discharger shall take photos of any problems areas before and after repairs. Necessary repairs shall be completed **within 30 days** of the inspection. Notification and reporting requirements for major storm events shall be conducted as required in Section B.5 of this MRP.

c. Five-Year Iso-Settlement Survey for Closed Units

For closed landfill units, the Discharger shall conduct a five-year iso-settlement survey and produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer. For each portion of the landfill, this map shall show the total lowering of the surface elevation of the final cover, relative to the baseline topographic map [Title 27, section 21090(e)(1 & 2)]. Reporting shall be in accordance with Section B.6 of this MRP.

d. Standard Observations

The Discharger shall conduct Standard Observations at the landfill in accordance with this section of the MRP. Standard observations shall be conducted in accordance with the following schedule:

<u>Landfill Unit Type</u>	<u>Frequency</u>	<u>Season</u>
Inactive/Closed	Monthly	Wet: 1 October to 30 April
Inactive/Closed	Quarterly	Dry: 1 May to 30 September

The Standard Observations shall include:

- 1) For the landfill units:
 - a) Evidence of ponded water at any point on the landfill outside of any contact storm water/leachate diversions structures on the active face (show affected area on map); and
 - b) Evidence of erosion and/or of day-lighted refuse.
- 2) Along the perimeter of the landfill units:
 - a) Evidence of leachate seeps, estimated size of affected area, and flow rate (show affected area on map); and
 - b) Evidence of erosion and/or of day-lighted refuse.
- 3) For receiving waters:
 - a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area; and
 - b) Discoloration and turbidity - description of color, source, and size of affected area.

Results of Standard Observations shall be submitted in the semiannual monitoring reports required in Section B.1 of this MRP.

5. Corrective Action Monitoring

The Discharger shall conduct corrective action monitoring to demonstrate the effectiveness of corrective action in accordance with Title 27, section 20430 and this MRP. Groundwater monitoring wells that are in a corrective action monitoring program shall be monitored in accordance with the groundwater monitoring requirements in parts A.1 of this MRP, except as modified in this part of the MRP for any additional constituents or modified monitored frequencies.

B. REPORTING

The Discharger shall submit the following reports in accordance with the required schedule:

Reporting Schedule

<u>Section</u>	<u>Report</u>	<u>End of Reporting Period</u>	<u>Due Date</u>
B.1	Semiannual Monitoring Report	30 June, 31 December	31 August, 28 February
B.2	Annual Monitoring Report	31 December	28 February
B.3	Seep Reporting	Continuous	Immediately & 7 Days
B.4	Annual Facility Inspection Report	31 October	15 November
B.5	Major Storm Event Reporting	Continuous	7 days from damage discovery
B.6	Survey and Iso-Settlement Map for Closed Landfills	Every Five Years	At Closure Completion and Every Five Years
B.7	Financial Assurances Report	31 December	1 October

The Discharger shall enter all monitoring data and reports into the online Geotracker database as required by Division 3 of Title 27 and Chapter 30, Division 3 of Title 23. Notification of the Geotracker upload shall be emailed to the Central Valley Water Board at: centralvalleyfresno@waterboards.ca.gov. To ensure that the submittal is routed to the appropriate staff as quickly as possible, the following information shall be included in the body of the email:

Attention:	Title 27 Compliance & Enforcement Unit Or Title 27 Permitting Unit
Report Title	
Geotracker Upload ID	
Discharger name:	County of Tulare
Facility name:	Exeter Landfill
County:	Tulare
CIWQS place ID:	223119

Reporting Requirements

The Discharger shall submit monitoring reports **semiannually** with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order R5-2019-0033 and the Standard Provisions and Reporting Requirements (particularly Section I: "Standard Monitoring Specifications" and Section J: "Response to a Release"). In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format, such as a computer disk.

Field and laboratory tests shall be reported in each monitoring report. Semiannual and annual monitoring reports shall be submitted to the Central Valley Water Board in accordance with the above schedule for the calendar period in which samples were taken or observations made.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure period. Such records shall be legible and shall show the following for each sample:

- a) Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b) Date, time, and manner of sampling;
- c) Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;

- d) Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- e) Calculation of results; and
- f) Results of analyses, and the MDL and PQL for each analysis. All peaks shall be reported.

Required Reports

1. **Semiannual Monitoring Report:** Monitoring reports shall be submitted semiannually and are due on **31 August** and **28 February**. Each semiannual monitoring report shall contain at least the following:
 - a) For each groundwater monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - 3) The method of purging used to stabilize water in the well bore before the sample is taken including the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; results of pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water;
 - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
 - b) A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
 - c) The estimated quarterly groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report [Title 27, section 20415(e)(15)].
 - d) Cumulative tabulated monitoring data for all monitoring points and constituents for groundwater, unsaturated zone, leachate, and surface water. Concentrations below the laboratory reporting limit shall not be reported as "ND" unless the reporting limit is also given in the table. Otherwise they shall be reported "<" the reporting limit (e.g., <0.10). Units shall be as required in Tables I through III unless specific justification is given to report in other units. Refer to the SPRRs Section I "Standard Monitoring Specifications" for requirements regarding MDLs and PQLs.

- e) Laboratory statements of results of all analyses evaluating compliance with requirements.
 - f) An evaluation of the concentration of each monitoring parameter (or 5-year COC when five year COC sampling is conducted) as compared to the current concentration limits, and the results of any required verification testing for constituents exceeding a concentration limit . Report any actions taken under Section J: Response to a Release for verified exceedances of a concentration limit for wells/constituents not already in corrective action monitoring.
 - g) A summary of inspection, leak search, and repair of final covers on any closed landfill units in accordance with an approved final post-closure maintenance plan as required by Standard Closure and Post-Closure Maintenance Specifications G.26 through G.29 of the SPRRs.
 - h) A comprehensive discussion of any Corrective Action Program required by this MRP under Section A.5.
2. **Annual Monitoring Report:** The Discharger shall submit an Annual Monitoring Report to the Central Valley Water Board by **28 February** covering the reporting period of the previous monitoring year. If desired, the Annual Monitoring Report may be combined with the second semiannual report, but if so, shall clearly state that it is both a semi-annual and annual monitoring report in its title. Each Annual Monitoring Report shall contain the following information:
- a) All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. If a 5-year COC event was performed, than these parameters shall also be graphically presented. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b) An evaluation of the monitoring parameters with regards to the cation/anion balance, and a graphical presentation using a Stiff diagram, a Piper graph, or a Schoeller plot.
 - c) All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file format such as a computer disk. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27, section 20420(h)], that facilitates periodic review by the Central Valley Water Board.
 - d) Hydrographs of each well showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the

pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

- e) A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
 - f) A map showing the area and elevations in which filling has been completed during the previous calendar year and a comparison to final closure design contours, and include a projection of the year in which each discrete landfill module will be filled.
 - g) A written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.
 - h) The results of the annual testing of leachate collection and removal systems required under Standard Facility Specification E.14 of the SPRRs.
 - i) Updated concentration limits for each monitoring parameter at each monitoring well based on the new data set.
3. **Seep Reporting:** The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Central Valley Water Board **within seven days**, containing at least the following information:
- a) A map showing the location(s) of seepage;
 - b) An estimate of the flow rate;
 - c) A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d) Verification that samples have been submitted for analyses of the Field Parameters and Monitoring Parameters listed in Table II of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
 - e) Corrective measures underway or proposed, and corresponding time schedule.
4. **Annual Facility Inspection Reporting:** By **15 November** of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures implemented, preparations for winter, and include photographs of any problem areas and the repairs. Refer to Section A.4.a of this MRP, above.
5. **Major Storm Event Reporting:** Following major storm events capable of causing damage or significant erosion, the Discharger **immediately** shall notify Central Valley Water Board staff of any damage or significant erosion upon discovery and report subsequent repairs within **14 days** of completion of the repairs, including photographs of the problem and the repairs. Refer to Section A.4.b of this MRP, above.

6. **Survey and Iso-Settlement Map for Closed Landfills:** The Discharger shall conduct a survey and submit an iso-settlement map for each closed area of the landfill every five years pursuant to Title 27, section 21090(e). Refer to Section A.4.c of this MRP, above.
7. **Financial Assurances Report:** By **1 October** of each year, the Discharger shall submit a copy of the annual financial assurances report due to CalRecycle that updates the financial assurances for closure, post-closure maintenance, and corrective action. Refer to Financial Assurances Specifications E.1 and E.3 of the WDRs.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit, the Water Quality Protection Standard shall consist of all COCs, the concentration limit for each constituent of concern, the verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points. Any proposed changes to the Water Quality Protection Standard other than annual update of the concentration limits shall be submitted in a report for review and approval.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a waste management unit or portion of a unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, and the groundwater monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).
- d. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E).

- e. Include a retesting procedure to confirm or deny measurably significant evidence of a release pursuant to Title 27, section 20415(e)(8)(E) and section 20420(j)(1-3).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

The Discharger proposed the methods for calculating concentration limits in the August 2000 *Water Quality Protection Standard Report*. The limits are calculated using Interwell tolerance limits at 95% confidence and 95% coverage based on background data from background monitoring well(s).

The Water Quality Protection Standard shall be updated annually for each monitoring well using new and historical monitoring data.

2. Monitoring Parameters

Monitoring parameters are a select group of constituents that are monitored during each monitoring event that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in Tables I through IV for the specified monitored medium.

3. Constituents of Concern (COCs)

The COCs include a larger group of waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit, and are required to be monitored every five years [Title 27, sections 20395 and 20420(g)]. The COCs for all waste management units at the facility are those listed in Tables I through III for the specified monitored medium, and Table VI. The Discharger shall monitor all COCs every five years, or more frequently as required in accordance with a Corrective Action Program. The last 5-year COC report was submitted to the Central Valley Water Board in the 2017 *Annual Monitoring Report*, and 5-year COCs are due to be monitored again in **2022**.

4. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or

- b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

5. Retesting Procedures for Confirming Evidence of a Release

If monitoring results indicate measurably significant evidence of a release, as described in Standard Monitoring Specification I.45 of the SPRRs, then:

- a. For analytes that are detected in less than 10% of the background samples (such as non-naturally occurring constituents), the Discharger shall use the non-statistical retesting procedure required in Standard Monitoring Specification I.46 of the SPRRs.
- b. For analytes that are detected in 10% or greater of the background samples (naturally occurring constituents), the Discharger shall use one of the statistical retesting procedure as required in Standard Monitoring Specification I.47 of the SPRRs.

6. Point of Compliance

The point of compliance for the water standard at each waste management unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the unit.

7. Compliance Period

The compliance period for each waste management unit shall be the number of years equal to the active life of the unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the waste management unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program [Title 27, section 20410].

8. Monitoring Points

A monitoring point is a well, device, or location specified in the waste discharge requirements, which monitoring is conducted and at which the water quality protection standard applies. The monitoring points for each monitored medium are listed in Section A of this MRP.

D. TRANSMITTAL LETTER FOR ALL REPORTS

A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also

state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Discharger shall implement the above monitoring program on the effective date of this Program.

I, PATRICK PULUPA, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a MRP adopted by the California Regional Water Quality Control Board, Central Valley Region, on 5 April 2019

Original Signed By

PATRICK PULUPA, Executive Officer

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Geotracker Code</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Field Parameters				
Groundwater Elevation	GWELEV	Ft. & 100ths, M.S.L.	Quarterly	Semiannual
Temperature	TEMP	°F	Semiannual	Semiannual
Electrical Conductivity	SC	µmhos/cm	Semiannual	Semiannual
pH	PH	pH units	Semiannual	Semiannual
Turbidity	TURB	Turbidity units	Semiannual	Semiannual
Monitoring Parameters				
Total Dissolved Solids (TDS)	TDS	mg/L ¹	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate	CACO3	mg/L	Semiannual	Semiannual
Bicarbonate	BICACO3	mg/L	Semiannual	Semiannual
Nitrate - Nitrogen	NO3N	mg/L	Semiannual	Semiannual
Sulfate	SO4	mg/L	Semiannual	Semiannual
Calcium	CA	mg/L	Semiannual	Semiannual
Magnesium	MG	mg/L	Semiannual	Semiannual
Potassium	K	mg/L	Semiannual	Semiannual
Sodium	NA	mg/L	Semiannual	Semiannual
Volatile Organic Compounds (USEPA Method 8260B (short list) and SRL-524M-TCP, see Table V)		µg/L ²	Semiannual	Semiannual
5-Year Constituents of Concern (see Table V)				
Total Organic Carbon	TOC	mg/L	5 years	2022
Inorganics (dissolved)		µg/L	5 years	and every 5 years
Volatile Organic Compounds (USEPA Method 8260B (extended list) and SRL-524M-TCP)		µg/L	5 years	thereafter
Semi-Volatile Organic Compounds (USEPA Method 8270C or D)		µg/L	5 years	" "
Chlorophenoxy Herbicides (USEPA Method 8151A)		µg/L	5 years	" "
Organophosphorus Compounds (USEPA Method 8141B)		µg/L	5 years	" "

¹ Milligrams per liter

² Micrograms per liter

TABLE II
LEACHATE SEEP MONITORING ¹

<u>Parameter</u>	<u>Geotracker Code</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Field Parameters				
Total Flow		Gallons	When a seep is present.	
Flow Rate	FLOW	Gallons/Day	“	
Electrical Conductivity	SC	µmhos/cm	“	
pH	PH	pH units	“	
Monitoring Parameters				
Total Dissolved Solids (TDS)	TDS	mg/L	When a seep is present.	
Chloride	CL	mg/L	“	
Carbonate	CACO3	mg/L	“	
Bicarbonate	BICACO3	mg/L	“	
Nitrate - Nitrogen	NO3N	mg/L	“	
Sulfate	SO4	mg/L	“	
Calcium	CA	mg/L	“	
Magnesium	MG	mg/L	“	
Potassium	K	mg/L	“	
Sodium	NA	mg/L	“	
Volatile Organic Compounds (USEPA Method 8260B (short list) and SRL-524M-TCP, see Table IV)		µg/L	“	
5-Year Constituents of Concern (see Table V)				
Total Organic Carbon	TOC	mg/L	When a seep is present.	
Inorganics (dissolved)		µg/L	“	
Volatile Organic Compounds (USEPA Method 8260B (extended list) and SRL-524M-TCP)		µg/L	“	
Semi-Volatile Organic Compounds (USEPA Method 8270C or D)		µg/L	“	
Chlorophenoxy Herbicides (USEPA Method 8151A)		µg/L	“	
Organophosphorus Compounds (USEPA Method 8141B)		µg/L	“	

¹. Leachate seeps shall be sampled and analyzed for the Field and Monitoring Parameters in this table upon detection. The quantity of leachate shall be estimated and reported in gallons/day.

TABLE III
SURFACE WATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Geotracker Code</u>	<u>Units</u>	<u>Sampling Frequency</u> ¹	<u>Reporting Frequency</u>
Field Parameters				
Electrical Conductivity	SC	µmhos/cm	Semiannual	Semiannual
pH	PH	pH units	Semiannual	Semiannual
Turbidity	TURB	Turbidity units	Semiannual	Semiannual
Flow to Waters of U.S.		Yes or No	Semiannual	Semiannual
Monitoring Parameters				
Total Dissolved Solids (TDS)	TDS	mg/L	Semiannual	Semiannual
Carbonate	CACO3	mg/L	Semiannual	Semiannual
Bicarbonate	BICACO3	mg/L	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Nitrate - Nitrogen	NO3N	mg/L	Semiannual	Semiannual
Sulfate	SO4	mg/L	Semiannual	Semiannual
Calcium	CA	mg/L	Semiannual	Semiannual
Magnesium	MG	mg/L	Semiannual	Semiannual
Potassium	K	mg/L	Semiannual	Semiannual
Sodium	NA	mg/L	Semiannual	Semiannual
Volatile Organic Compounds (USEPA Method 8260B (short list) and SRL-524M-TCP see Table IV)		ug/L	Semiannual	Semiannual
5-Year Constituents of Concern (see Table V)				
Total Organic Carbon	TOC	mg/L	5 years	2022
Inorganics (dissolved)		µg/L	5 years	and every 5 years
Volatile Organic Compounds (USEPA Method 8260B (extended list) and SRL-524M-TCP)		µg/L	5 years	thereafter
Semi-Volatile Organic Compounds (USEPA Method 8270C or D)		µg/L	5 years	" "
Chlorophenoxy Herbicides (USEPA Method 8151A)		µg/L	5 years	" "
Organophosphorus Compounds (USEPA Method 8141B)		µg/L	5 years	" "

¹. Semiannual surface water monitoring is required twice per year when there is water present at the designated surface water monitoring point any time during the reporting period (1 January to 30 June or 1 July to 31 December). Reporting shall include whether there was flow from the facility to waters of the U.S. when the samples were collected.

TABLE IV

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

<u>COC Description</u>	<u>Geotracker Code</u>
pH	PH
Total Dissolved Solids	TDS
Electrical Conductivity	SC
Chloride	CL
Sulfate	SO4
Nitrate nitrogen	NO3N

Volatile Organic Compounds, short list (USEPA Method 8260B):

Acetone	ACE
Acrylonitrile	ACRAMD
Benzene	BZ
Bromochloromethane	BRCLME
Bromodichloromethane	BDCME
Bromoform (Tribromomethane)	TBME
Carbon disulfide	CDS
Carbon tetrachloride	CTCL
Chlorobenzene	CLBZ
Chloroethane (Ethyl chloride)	CLEA
Chloroform (Trichloromethane)	TCLME
Dibromochloromethane (Chlorodibromomethane)	DBCME
1,2-Dibromo-3-chloropropane (DBCP)	DBCP
1,2-Dibromoethane (Ethylene dibromide; EDB)	EDB
o-Dichlorobenzene (1,2-Dichlorobenzene)	DCBZ12
m-Dichlorobenzene (1,3-Dichlorobenzene)	DCBZ13
p-Dichlorobenzene (1,4-Dichlorobenzene)	DCBZ14
trans-1,4-Dichloro-2-butene	DCBE14T
Dichlorodifluoromethane (CFC-12)	FC12
1,1-Dichloroethane (Ethylidene chloride)	DCA11
1,2-Dichloroethane (Ethylene dichloride)	DCA12
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)	DCE11
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)	DCE12C
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)	DCE12T
1,2-Dichloropropane (Propylene dichloride)	DCPA12
cis- 1,3-Dichloropropene	DCP13C
trans- 1,3-Dichloropropene	DCP13T
Di-isopropylether (DIPE)	DIPE
Ethanol	ETHANOL
Ethyltertiary butyl ether	ETBE
Ethylbenzene	EBZ
2-Hexanone (Methyl butyl ketone)	HXO2
Hexachlorobutadiene	HCBU
Methyl bromide (Bromomethene)	BRME
Methyl chloride (Chloromethane)	CLME

TABLE IV
MONITORING PARAMETERS FOR DETECTION MONITORING

Continued

Methylene bromide (Dibromomethane)	DBMA
Methylene chloride (Dichloromethane)	DCMA
Methyl ethyl ketone (MEK: 2-Butanone)	MEK
Methyl iodide (Iodomethane)	IME
Methyl t-butyl ether	MTBE
4-Methyl-2-pentanone (Methyl isobutylketone)	MIBK
Naphthalene	NAPH
Styrene	STY
Tertiary amyl methyl ether	TAME
Tertiary butyl alcohol	TBA
1,1,1,2-Tetrachloroethane	TC1112
1,1,2,2-Tetrachloroethane	PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)	PCE
Toluene	BZME
1,2,4-Trichlorobenzene	TCB124
1,1,1-Trichloroethane (Methylchloroform)	TCA111
1,1,2-Trichloroethane	TCA112
Trichloroethylene (Trichloroethene)	TCE
Trichlorofluoromethane (CFC- 11)	FC11
Vinyl acetate	VA
Vinyl chloride	VC
Xylenes	XYLENES
SRL-524M-TCP	
1,2,3-Trichloropropane	TCPR123

TABLE V
5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>	<u>Geotracker Code</u>
Aluminum	200.8	AL
Antimony	200.8	SB
Barium	200.8	BA
Beryllium	200.8	BE
Cadmium	200.8	CD
Chromium	200.8	CR
Cobalt	200.8	CO
Copper	200.8	CU
Silver	200.8	AG
Tin	200.8	SN
Vanadium	200.8	V
Zinc	200.8	ZN
Iron	200.8	FE
Manganese	200.8	MN
Arsenic	200.8	AS
Lead	200.8	PB
Mercury	200.8	HG
Nickel	200.8	NI
Selenium	200.8	SE
Thallium	200.8	TL
Cyanide	SM 4500CN	CN
Sulfide	SM4500S ⁻	S

Volatile Organic Compounds, extended list (USEPA Method 8260B):

<u>COC Description</u>	<u>Geotracker Code</u>
Acetone	ACE
Acetonitrile (Methyl cyanide)	ACCN
Acrolein	ACRL
Acrylonitrile	ACRAMD
Allyl chloride (3-Chloropropene)	CLPE3
Benzene	BZ
Bromochloromethane (Chlorobromomethane)	BRCLME
Bromodichloromethane (Dibromochloromethane)	DBCME
Bromoform (Tribromomethane)	TBME
Carbon disulfide	CDS
Carbon tetrachloride	CTCL
Chlorobenzene	CLBZ
Chloroethane (Ethyl chloride)	CLEA
Chloroform (Trichloromethane)	TCLME
Chloroprene	CHLOROPRENE
Dibromochloromethane (Chlorodibromomethane)	DBCME
1,2-Dibromo-3-chloropropane (DBCP)	DBCP
1,2-Dibromoethane (Ethylene dibromide; EDB)	EDB
o-Dichlorobenzene (1,2-Dichlorobenzene)	DCBZ12

TABLE V

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

m-Dichlorobenzene (1,3-Dichlorobenzene)	DCBZ13
p-Dichlorobenzene (1,4-Dichlorobenzene)	DCBZ14
trans- 1,4-Dichloro-2-butene	DCBE14T
Dichlorodifluoromethane (CFC 12)	FC12
1,1 -Dichloroethane (Ethylidene chloride)	DCA11
1,2-Dichloroethane (Ethylene dichloride)	DCA12
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)	DCE11
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)	DCE12C
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)	DCE12T
1,2-Dichloropropane (Propylene dichloride)	DCPA12
1,3-Dichloropropane (Trimethylene dichloride)	DCPA13
2,2-Dichloropropane (Isopropylidene chloride)	DCPA22
1,1 -Dichloropropene	DCP11
cis- 1,3-Dichloropropene	DCP13C
trans- 1,3-Dichloropropene	DCP13T
Di-isopropylether (DIPE)	DIPE
Ethanol	ETHANOL
Ethyltertiary butyl ether	ETBE
Ethylbenzene	EBZ
Ethyl methacrylate	EMETHACRY
Hexachlorobutadiene	HCBU
2-Hexanone (Methyl butyl ketone)	HXO2
Isobutyl alcohol	ISOBTOH
Methacrylonitrile	METHACRN
Methyl bromide (Bromomethane)	BRME
Methyl chloride (Chloromethane)	CLME
Methyl ethyl ketone (MEK; 2-Butanone)	MEK
Methyl iodide (Iodomethane)	IME
Methyl t-butyl ether	MTBE
Methyl methacrylate	MMTHACRY
4-Methyl-2-pentanone (Methyl isobutyl ketone)	MIBK
Methylene bromide (Dibromomethane)	DBMA
Methylene chloride (Dichloromethane)	DCMA
Naphthalene	NAPH
Propionitrile (Ethyl cyanide)	PACN
Styrene	STY
Tertiary amyl methyl ether	TAME
Tertiary butyl alcohol	TBA
1,1,1,2-Tetrachloroethane	TC1112
1,1,2,2-Tetrachloroethane	PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)	PCE
Toluene	BZME
1,2,4-Trichlorobenzene	TCB124
1,1,1 -Trichloroethane (Methylchloroform)	TCA111
1,1,2-Trichloroethane	TCA112

TABLE V

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

Trichloroethylene (Trichloroethene; TCE)	TCE
Trichlorofluoromethane (CFC- 11)	FC11
Vinyl acetate	VA
Vinyl chloride (Chloroethene)	VC
Xylene (total)	XYLENES
SRL-524M-TCP	
1,2,3-Trichloropropane	TCPR123

Semi-Volatile Organic Compounds (USEPA Method 8270C or D - base, neutral, & acid extractables):

Acenaphthene	ACNP
Acenaphthylene	ACNPY
Acetophenone	ACPHN
2-Acetylaminofluorene (2-AAF)	ACAMFL2
Aldrin	ALDRIN
4-Aminobiphenyl	AMINOBP4
Anthracene	ANTH
Benzo[a]anthracene (Benzanthracene)	BZAA
Benzo[b]fluoranthene	BZBF
Benzo[k]fluoranthene	BZKF
Benzo[g,h,i]perylene	BZGHIP
Benzo[a]pyrene	BZAP
Benzyl alcohol	BZLAL
Bis(2-ethylhexyl) phthalate	BIS2EHP
alpha-BHC	BHCALPHA
beta-BHC	BHCBETA
delta-BHC	BHCDELTA
gamma-BHC (Lindane)	BHCGAMMA
Bis(2-chloroethoxy)methane	BECEM
Bis(2-chloroethyl) ether (Dichloroethyl ether)	BIS2CEE
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)	BIS2CIE
4-Bromophenyl phenyl ether	BPPE4
Butyl benzyl phthalate (Benzyl butyl phthalate)	BBP
Chlordane	CHLORDANE
p-Chloroaniline	CLANIL4
Chlorobenzilate	CLBZLATE
p-Chloro-m-cresol (4-Chloro-3-methylphenol)	C4M3PH
2-Chloronaphthalene	CNPH2
2-Chlorophenol	CLPH2
4-Chlorophenyl phenyl ether	CPPE4
Chrysene	CHRYSENE
o-Cresol (2-methylphenol)	MEPH2
m-Cresol (3-methylphenol)	MEPH3

TABLE V

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

p-Cresol (4-methylphenol)	MEPH4
4,4'-DDD	DDD44
4,4'-DDE	DDE44
4,4'-DDT	DDT44
Diallate	DIALLATE
Dibenz[a,h]anthracene	DBAHA
Dibenzofuran	DBF
Di-n-butyl phthalate	DNBP
3,3'-Dichlorobenzidine	DBZD33
2,4-Dichlorophenol	DCP24
2,6-Dichlorophenol	DCP26
Dieldrin	DIELDRIN
Diethyl phthalate	DEPH
p-(Dimethylamino)azobenzene	PDMAABZ
7,12-Dimethylbenz[a]anthracene	DMBZA712
3,3'-Dimethylbenzidine	DMBZD33
2,4-Dimethylphenol (m-Xylenol)	DMP24
Dimethyl phthalate	DMPH
m-Dinitrobenzene	DNB13
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	DN46M
2,4-Dinitrophenol	DNP24
2,4-Dinitrotoluene	DNT24
2,6-Dinitrotoluene	DNT26
Di-n-octyl phthalate	DNOP
Diphenylamine	DPA
Endosulfan I	ENDOSULFANA
Endosulfan II	ENDOSULFANB
Endosulfan sulfate	ENDOSULFANS
Endrin	ENDRIN
Endrin aldehyde	ENDRINALD
Ethyl methanesulfonate	EMSULFN
Famphur	FAMPHUR
Fluoranthene	FLA
Fluorene	FL
Heptachlor	HEPTACHLOR
Heptachlor epoxide	HEPT-EPOX
Hexachlorobenzene	HCLBZ
Hexachlorocyclopentadiene	HCCP
Hexachloroethane	HCLEA
Hexachloropropene	HCPR
Indeno(1,2,3-c,d)pyrene	INP123
Isodrin	ISODRIN
Isophorone	ISOP
Isosafrole	ISOSAFR
Kepone	KEP
Methapyrilene	MTPYRLN
Methoxychlor	MTXYCL

TABLE V

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

3-Methylcholanthrene	MECHLAN3
Methyl methanesulfonate	MMSULFN
2-Methylnaphthalene	MTNPH2
1,4-Naphthoquinone	NAPHQ14
1-Naphthylamine	AMINONAPH1
2-Naphthylamine	AMINONAPH2
o-Nitroaniline (2-Nitroaniline)	NO2ANIL2
m-Nitroaniline (3-Nitroaniline)	NO2ANIL3
p-Nitroaniline (4-Nitroaniline)	NO2ANIL4
Nitrobenzene	NO2BZ
o-Nitrophenol (2-Nitrophenol)	NTPH2
p-Nitrophenol (4-Nitrophenol)	NTPH4
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)	NNSBU
N-Nitrosodiethylamine (Diethylnitrosamine)	NNSE
N-Nitrosodimethylamine (Dimethylnitrosamine)	NNSM
N-Nitrosodiphenylamine (Diphenylnitrosamine)	NNSPH
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)	NNSPR
N-Nitrosomethylethylamine (Methylethylnitrosamine)	NNSME
N-Nitrosopiperidine	NNSPPRD
N-Nitrosopyrrolidine	NNSPYRL
5-Nitro-o-toluidine	TLDNONT5
Pentachlorobenzene	PECLBZ
Pentachloronitrobenzene (PCNB)	PECLNO2BZ
Pentachlorophenol	PCP
Phenacetin	PHNACTN
Phenanthrene	PHAN
Phenol	PHENOL
p-Phenylenediamine	ANLNAM4
Polychlorinated biphenyls (PCBs; Aroclors)	PCBS
Pronamide	PRONAMD
Pyrene	PYR
Safrole	SAFROLE
1,2,4,5-Tetrachlorobenzene	C4BZ1245
2,3,4,6-Tetrachlorophenol	TCP2346
o-Toluidine	TLDNO
Toxaphene	TOXAP
2,4,5-Trichlorophenol	TCP245
0,0,0-Triethyl phosphorothioate	TEPTH
sym-Trinitrobenzene	TNB135

TABLE V

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

Chlorophenoxy Herbicides (USEPA Method 8151A):

2,4-D (2,4-Dichlorophenoxyacetic acid)	24D
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)	DINOSEB
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)	SILVEX
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	245T

Organophosphorus Compounds (USEPA Method 8141B):

Atrazine	ATRAZINE
Chlorpyrifos	CLPYRIFOS
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)	ZINOPHOS
Diazinon	DIAZ
Dimethoate	DIMETHAT
Disulfoton	DISUL
Methyl parathion (Parathion methyl)	PARAM
Parathion	PARAE
Phorate	PHORATE
Simazine	SIMAZINE