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CENTRAL VALLEY REGION

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WASTE DISCHARGE REQUIREMENTS ORDER
R5-2024-0033

ORDER INFORMATION

Order Type(s):	Waste Discharge Requirements (WDRs)
Status:	Adopted
Program:	Title 27 Discharges to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	County of Lake, Public Services Department
Facility:	Eastlake Sanitary Landfill
Address:	16015 Davis Avenue, Clearlake
County:	Lake County
Parcel Nos.:	041-224-400, 041-234-270, 041-244-180, 010-053-120, 010-053-130, 010-008-030, 010-008-390, 010-008-410
GeoTracker ID:	L10009540332
Prior Order(s):	R5-2019-0009, R5-2006-0108, R5-2002-0217, 98-159

CERTIFICATION

I, PATRICK PULUPA, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 21 June 2024.

Date: 2024.07.05 14:10:54 -07'00'

PATRICK PULUPA,
Executive Officer

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TABLE OF CONTENTS

TABLE INDEX

GLOSSARY

ADC .....Alternative Daily Cover

Antidegradation Policy .....Statement of Policy with Respect to Maintaining High Quality Waters in California, State Water Board Resolution 68-16

Basin Plan.....*Water Quality Control Plan for the Sacramento and San Joaquin River Basins*

BGS .....Below Ground Surface

CalRecycle.....California Department of Resources Recycling and Recovery

CAMP.....Corrective Action Monitoring Program

CEQA.....California Environmental Quality Act

C.F.R......Code of Federal Regulations

CPMP.....Closure and Post-Closure Maintenance Plan

CQA .....Construction Quality Assurance

Designated Waste .....(a) Hazardous Waste subject to variance from management requirements per Health and Safety Code section 25143; and (b) Nonhazardous Waste containing pollutants that, under ambient conditions, could be released in concentrations exceeding applicable WQOs, or that could reasonably be expected to affect beneficial uses of water. (Wat. Code, § 13173.)

g.....Acceleration due to gravity on earth

GCL.....Geosynthetic Clay Liner

Hazardous Waste .....Wastes which, pursuant to Title 22, section 66261.3 et seq., are required to be managed in accordance with Division 4.5 of Title 22. (Title 27, § 20164; Title 23, § 2521(a).)

HDPE .....High-Density Polyethylene

JTD .....Joint Technical Document

LCRS .....Leachate Collection and Removal System

LEA.....Local Enforcement Agency

Leachate.....Liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. Leachate includes any constituents extracted from the waste and dissolved or suspended in the fluid. (Title 27, § 20164.)

LFG.....Landfill Gas

MCE .....Maximum Credible Earthquake

MDB&M .....Mount Diablo Base and Meridian

MDL .....Method Detection Limit

mg/L.....Milligrams per Liter

MPE .....Maximum Probable Earthquake

MSL.....Mean Sea Level

MRP .....Monitoring and Reporting Program

MSW .....Municipal Solid Waste regulated under 40 C.F.R. part 258

MSWLF .....Municipal Solid Waste Landfill

MW.....Monitoring Well

N/A.....Not Applicable

SI.....Surface Impoundment

SPRRs .....Standard Provisions and Reporting Requirements

Subtitle D .....USEPA-promulgated MSW regulations under RCRA (see 40 C.F.R. part 258)

RCRA.....Resource Conservation and Recovery Act

ROWD.....Report of Waste Discharge

Title 22.....California Code of Regulations, Title 22

Title 23.....California Code of Regulations, Title 23

GLOSSARY

Title 27.....California Code of Regulations, Title 27

USEPA.....United States Environmental Protection Agency

VOCs .....Volatile Organic Compounds

WDRs.....Waste Discharge Requirements

WMU .....Waste Management Unit

WQOs .....Water Quality Objectives

WQPS .....Water Quality Protection Standard

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) hereby finds as follows:

Introduction

1. The County of Lake Public Services Department (Discharger) owns and operates the Eastlake Sanitary Landfill (Facility), which is located on the eastern edge of Clearlake in Lake County, Section 26, Township 13 North, Range 7 West, Mount Diablo Base and Meridian (MDB&M). The Facility's location is depicted on the Site Location Map in **Attachment A**.

2. The Facility is situated on a 219.5-acre property comprised of Assessor's Parcel Numbers (APNs) 041-224-400, 041-234-270, 041-244-180, 010-053-120, 010-053-130, 010-008-030, 010-008-390, 010-008-410 as shown in **Attachment D**. The permitted area for the Facility on the property is 74.6 acres. The address associated with the Facility is 16015 Davis Road, Clearlake, California 95422.

3. As the Facility's owner and operator, the Discharger is responsible for compliance with this Order, which prescribes Waste Discharge Requirements (WDRs) regulating construction, monitoring, operation, closure, and post-closure maintenance of the Waste Management Units (WMUs) listed in **Table 1**.

Table 1—Summary of Waste Management Units (WMUs) Permitted under Order

Unit	Type	Class	Size	Status
Area I	Landfill	Class III	22.4	Operating
Area II Module 1	Landfill	Class III	6.5	Operating
Area II Module 2	Landfill	Class III	5.8	Operating
Area III (vertical expansion)	Landfill	Class III	See Note1	Operating
Surface Impoundment	Surface Impoundment	Class II	600,000 gallons	Operating

Unit	Type	Class	Size	Status
Phase 1 (lateral and vertical expansion)	Landfill	Class III	7.1	Planned
Phase 2 (lateral expansion)	Landfill	Class III	3.5	Planned
Phase 3 (lateral expansion)	Landfill	Class III	5.2	Planned
Phase 4 (lateral and vertical expansion)	Landfill	Class III	3.7 (See Note 2.)	Planned

See Glossary for definitions of terms and abbreviations in table.

Notes.

1. Area III is a WMU being filled with waste as a vertical expansion of the landfill over currently permitted Area I and Area II, raising maximum landfill elevation to 1,827 feet above mean sea level (MSL).
2. Phase 4 is a lateral and vertical expansion of the landfill to be constructed over existing, permitted Area I footprint and a small portion of Area II footprint as shown in **Attachment O**.

Materials Accompanying Order

4. The following materials are attached to this Order, and incorporated herein:

ATTACHMENT A—SITE LOCATION MAP
ATTACHMENT B—LANDFILL PREDEVELOPMENT TOPOGRAPHY
ATTACHMENT C—1-MILE VICINITY WATER SUPPLY WELL MAP
ATTACHMENT D—FACILITY FEATURES AND APN PARCEL MAP
ATTACHMENT E—PROPOSED LANDFILL LATERAL AND VERTICAL EXPANSION
ATTACHMENT F—INADEQUATE GROUNDWATER SEPARATION AREA
ATTACHMENT G—EXISTING GROUNDWATER AND SURFACE WATER MONITORING

ATTACHMENT H—ISO-CONCENTRATION MAPS OF DETECTED VOCS IN GROUNDWATER
ATTACHMENT I—EXISTING SURFACE WATER DRAINAGE SYSTEM
ATTACHMENT J—FINAL SURFACE WATER DRAINAGE SYSTEM
ATTACHMENT K—EXISTING LANDFILL GAS CONTROL SYSTEM
ATTACHMENT L—FINAL LANDFILL GAS CONTROL SYSTEM
ATTACHMENT M—FINAL CLOSURE COVER
ATTACHMENT N—LINER DESIGN CROSS SECTIONS
ATTACHMENT O—VERTICAL EXPANSION CROSS SECTIONS

Standard Provisions & Reporting Requirements for Non-Hazardous Discharges of Waste Regulated under Subtitle D and/or Title 27, December 2015 Edition (Landfill SPRRs)

Standard Provisions and Reporting Requirements for Class II Surface Impoundments dated April 2016 (Class II SPRRs)

Information Sheet

5. This Order is also accompanied by the concurrently adopted **Monitoring & Reporting Program (MRP) Order R5-2024-0033**, the provisions of which are incorporated as part of this Order. Each time the operative MRP is modified by the Central Valley Water Board or its Executive Officer, the revised version shall become the operative MRP (superseding the prior version) and be incorporated as part of this Order (i.e., in lieu of the prior version).

6. To the extent there are any material inconsistencies between the provisions of this Order, the operative MRP, and the SPRRs, the provisions of this Order shall be controlling. However, to the extent a revised MRP contains new or different factual findings reflecting changed conditions or circumstances at the Facility, the revised MRP findings shall be controlling.

7. Additional information about the Facility is set forth in the **Information Sheet**, which is incorporated as part of these findings. (See Finding 4)

Facility

8. The Facility is a canyon fill landfill. The pre-disposal topography of the site is shown in **Attachment B**. Operation of the Facility as a sanitary landfill began in 1972. Prior to 1972, a legal burn dump was operated on a western portion of the same property where the Facility is located. The area of the burn dump covered approximately three acres. Around 1975, solid waste was placed in the upper end of the canyon. In addition, associated burn debris was removed from the

lower canyon area and disposed within the limits of the current unlined WMU Area I.

9. Previously, the Facility accepted empty pesticide containers for disposal at two separate areas, as shown in Attachment B. The first area was used during the early 1970's. During 1989, numerous pesticide containers and contaminated soil were excavated from the pesticide container area. This material was disposed off-site at the Class I Kettleman Hills disposal facility. Confirmation soil samples were collected during 1989 and during additional excavation performed during 1990; the samples indicated pesticides were not present in the surrounding soils. The second pesticide container disposal area accepted triple-rinsed containers until 1988, at which time the area was capped, as shown in Attachment B.

10. The current WMUs are configured as two (2) contiguous disposal areas, as shown in Attachment B, identified herein as Area I and Area II and an overlying vertical expansion identified as Area III. Area I represents the original disposal area that encompasses approximately 22.4 acres. As outlined above, disposal in this area commenced in 1975. Area I, which is unlined, is equipped with a series of perforated plastic pipes at its base, which serve as a partial leachate collection and removal system (LCRS) that conveys any collected leachate via gravity to a Class II surface impoundment located along the southern toe of the WMU.

11. Leachate collection was implemented at the landfill in 1975 through the installation of a series of plastic pipes set at the base of the unlined Unit to collect and remove leachate. Leachate and spring water commingled at the site of the collection. A cutoff wall was constructed at the base of the unlined Unit to collect the leachate. The leachate and spring water were discharged to Molesworth Creek. In 1982, the Central Valley Water Board advised the Discharger that a non-compliance condition existed at the landfill with respect to the discharge of leachate to Molesworth Creek. In March 1984, the Discharger began spray discharge of the leachate on a hillside in the approximate location shown on Attachment B. Leachate for spray discharge was collected from the cutoff wall and from an unlined surface impoundment located below the unlined landfill Unit. This practice was discontinued in 1997 with construction of a 600,000 gallon Class II lined surface impoundment at the toe of the south-facing fill slope face. Leachate continues to be collected from the cutoff wall and conveyed to the Class II surface impoundment. Also, collected landfill gas condensate liquids discharge to the Class II surface impoundment.

12. The Discharger discharges waste collected in the Class II surface impoundment to a sanitary sewer system that drains to the Southeast Regional Wastewater Treatment Plant. The Discharger maintains a *Special Agreement Permit for*

Discharge with the Southeast Regional Wastewater System Plant, which allows the Discharger an average daily disposal flowrate of 27,000 gallons per day with an additional 18,000 gallons per day available with prior daily notice. Additionally, the discharge must cease during and 24-hours after precipitation events (i.e., rainfall of 0.5 inches or more in a 24-hour period).

13. Area II borders Area I to the south-southeast and encompasses approximately 12.3 acres. This area was developed in two (2) phases, with Module 1 (6.5 acres) constructed in 1999, followed by Module 2 (5.8 acres) in 2003. Both modules are completed within the same canyon, with Module 1 comprising the lower portion of Area II and Module 2 comprising the upper portion. Modules 1 and 2 are each equipped with a single composite base liner system and leachate collection system that meets the requirements of the federal Subtitle D regulations (40 C.F.R., §§ 257-258) and California Code of Regulations, title 27 (Title 27). Area II Module 1 is also equipped with an underdrain system to intercept shallow groundwater that exists within the canyon where Molesworth Creek historically existed (see Attachment B).

14. As part of the design submitted and approved in 1998, Areas I and II have maximum elevations of 1,780 feet above MSL. Area III consists of additional fill placement (i.e., vertical expansion to elevations that cover both unlined Area I and lined Area II up to a maximum permitted height of 1,860 feet above MSL) (see Attachment E). WDRs Order 98-159 (adopted 24 July 1998), Finding 6, referred to Area III (Phase III) as a “vertical expansion on top of Phases I (Area I) and II (Area II)”. Since the time the design was originally approved, construction and slope modifications have decreased the maximum achievable fill elevation to 1,827 feet above MSL.

15. The Facility includes the following onsite features, ancillary systems, and structures:

    a. Paved two-lane entry road from the landfill entrance to the scale house and bag dump areas.

    b. Perimeter drainage control facilities.

    c. Dedicated borrow source area for daily soil cover (used only when the alternative daily cover (ADC) tarp is not being deployed).

    d. Scale house and scale facilities.

    e. Restroom building (masonry block construction with concrete slab).

f. Bag dump facility.

g. Recycling Drop-Off and Buy Back Center (operated by South Lake Refuse Company, LLC under contract to the Discharger).

h. Hazmat building (pre-engineered steel building), used for materials storage.

i. Equipment shop (pre-engineered steel building).

j. 2,500-gallon potable water tank.

k. Leachate, unsaturated zone, groundwater, and perimeter landfill gas (LFG) monitoring points.

l. LFG collection and control system, with the gas blower/flare station located at the north end of the site near the scale house.

Waste Classification & Permitting

16. The Facility's landfills are subject to federal Municipal Solid Waste (MSW) regulations promulgated under the Resource Conservation Recovery Act (RCRA) (42 U.S.C. § 6901 et seq.). Typically referred to as "Subtitle D," these regulations are now codified as 40 Code of Federal Regulations part 258 and implemented in part through the provisions of Title 27 and in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.

17. On 24 July 1998, the Central Valley Water Board issued WDRs Order 98-159, in which both the unlined and lined landfill Units were classified as Class III WMUs for the discharge of municipal solids waste in accordance with the regulations in effect when the Order was issued. On 6 December 2002, the Central Valley Water Board rescinded Order 98-159 and issued WDRs Order R5-2002-0217, which approved the Discharger's liner performance demonstration for the Module 2 side slope liner system for the Area II lined WMU that was constructed during 2003. WDRs Order R5-2006-0108 continued to classify the Units as Class III WMUs that accept MSW in accordance with Title 27.

18. On 8 February 2019, the Central Valley Water Board adopted WDRs Order R5-2019-0009, classifying the Facility's WMUs as either Class II or Class III units for the discharge of non-hazardous solid waste, MSW, and designated waste (as defined per Wat. Code, § 13173). This Order continues such classifications, which are set forth above in **Table 1**.

19. On 6 January 2023, the Discharger submitted an updated Report of Waste Discharge (ROWD) as part of its Joint Technical Document (JTD) for the Facility. Information in the JTD was used in the development of this Order. The Discharger's JTD/ROWD makes the following significant proposals:

    a. Lateral and vertical expansion of the landfill in four phases, as shown in **Table 1** and **Attachment E**. The landfill footprint will laterally expand by 19.5 acres. The proposed lateral and vertical expansion of the landfill will increase disposal capacity of the landfill by approximately 1.93 million cubic yards and would extend the landfill site life by 22 years or more;

    b. Construction of a new all-weather main entrance road and utilities to the scale house due to the Phase 4 expansion;

    c. Construction of a new storm water retention basin generally southeast of the existing Class II surface impoundment. The new basin size will occupy approximately 2.9 acres in plan view; and

    d. Proper abandonment/well destruction of groundwater and gas monitoring wells located near or in the footprint of proposed landfill expansion areas and removal of these points from the landfill MRP. Replacement monitoring points will be installed outside of the expanded Landfill footprint.

20. On 1 December 2023, the JTD/ROWD was deemed complete.

21. The Discharger proposes to continue discharging asbestos-containing waste (i.e., >1% asbestos) at the Facility. Although asbestos-containing waste is classified as “hazardous” under California Code of Regulations, title 22 (Title 22), the discharge of such waste does not pose a threat to water quality and is therefore authorized for WMUs as specified in **Section B.1** and **Table 10**. (Health & Saf. Code, § 25143.7.)

22. The Discharger proposes to continue discharging **Treated Wood Waste**, as defined in Health and Safety Code section 25230.1, at the Facility. Treated Wood Waste may contain chemicals such as chromated copper arsenate (CCA), pentachlorophenol, creosote, acid copper chromate (ACC), ammoniacal copper arsenate (ACA), ammoniacal copper zinc arsenate (ACZA), or chromated zinc chloride (CZC). In accordance with Health and Safety Code chapter 6.5, article 4, section 25143.1.5, and article 11 (§§ 25230-25230.18), this Order authorizes the discharge of treated wood waste to composite-lined WMUs specified in **Discharge Specification B.1** and **Table 10,** provided that the Discharger complies with all applicable requirements described in Health and Safety Code chapter 6.5, article 11, and this Order, including the SPRRs. The operative MRP

requires that the Discharger monitor leachate and the unsaturated zone below the WMUs for constituents of concern typically found in treated wood waste.

23. The Discharger proposes to continue discharging certain **Designated Wastes** (Wat. Code, § 13173)—specifically, liquid wastes to Class II WMUs at the Facility. This Order authorizes the discharge of such wastes to the WMUs specified in **Discharge Specification B.1** and **Table 10**. (Title 27, § 20210.)

24. The Discharger proposes to continue discharging Leachate and LFG Condensate extracted from the landfill WMUs to the Class II surface impoundment, instead of returning such waste to the same unit from which it originated, as is ordinarily required. (See Title 27, § 20340(g).) The Class II surface impoundment proposed to receive the leachate and LFG condensate has a functioning LCRS and already contains liquid waste similar in classification and characteristics to the WMUs of origin. Furthermore, the receiving Class II surface impoundment will continue to comply with Title 27, section 20200.

25. The WMU in **Table 2** is categorized as an **Existing Unit**, as that term is defined in Title 27, section 20164, and may continue to accept waste within its "existing footprint," as depicted in **Attachment E**, provided that: (a) waste receipts are sufficient to comply with financial assurances requirements (Title 27, § 21110); and (b) early closure is not required due to environmental impacts and/or other regulatory concerns. The "existing footprint" is the area of the landfill covered by waste as of the date that the landfill became subject to federal "Subtitle D" regulations. (See Title 27, § 20164.)

Table 2—Landfills as "Existing Units" under Title 27

Unit	Issues
Area I	Unlined

Alternative Daily Cover (ADC) / Intermediate Cover (Operating Landfill Units)

26. In lieu of the daily cover required per Title 27, section 20680, the Discharger proposes to use an approved ADC (see Title 27, §§ 20690, 20705), which consists of tarps and Posi-Shell® spray-on material or equivalent.

27. The proposed ADC has already been approved by the Local Enforcement Agency (LEA) and is hereby also approved by the Central Valley Water Board for use at the Facility.

28. In accordance with Title 27, section 20705, Discharger has demonstrated that its proposed ADC materials: (a) will minimize percolation of liquids through waste and (b) are consistent with the classification of the WMUs to which they are to be applied. The approved ADC material constituents and breakdown products are also included as part of the Water Quality Protection Standard (WQPS) set forth in the MRP.

29. The Discharger proposes to place intermediate covers in accordance with fill sequence plans described in the Discharger's 2021 JTD. Intermediate covers will be constructed and maintained in areas that have achieved final grades or will be dormant to filling for 180 days or more. Intermediate covers will remain and act as an interim cover over areas that reached final grade until a final cover system is constructed.

Site Conditions

30. The Facility is located on the lower slopes of Quackenbush Mountain, a prehistoric extinct basaltic andesite volcano part of the Clearlake volcanics. The existing landfill and expansion areas are situated at elevations ranging between 1,560 and 1,880 feet above MSL. Prior to site development as a landfill in 1972, the project area was likely very similar to the surrounding terrain, with steep slopes covered in chaparral and grassland and more gently sloping areas with oak woodland and grassland.

31. The geologic sequence of the region consists predominantly of the Tertiary-age Cache Formation, which is unconformably underlain by bedrock of the Franciscan Formation. The Cache Formation generally consists of a thick sequence of poorly sorted gravel, silt, clay, and sand. Locally occurring lenses of silty sand to clayey silts are located throughout the Cache Formation. At the site, the Franciscan bedrock is primarily comprised of a fractured, weathered fine to medium grained sandstone with some occurrences of siltstone.

32. SHN Consulting Engineers and Geologists, Inc., in a report Geologic and Seismic Siting Assessment for the Proposed Eastlake Landfill Expansion, dated March 2018, indicates that the local basement rock consists of unnamed upper Cretaceous age sandstone. North of the site, Franciscan Complex bedrock composed of pervasively sheared and fractured metamorphosed sandstone, chert, and basalt is present. Bedrock encountered during drilling activities consisted of predominantly fractured and weathered sandstone, with Interbedded shale. These materials are consistent with the type of material found in the Great Valley sequence. Late Tertiary Age Cache formation is overlying the basement rocks and is visible in localized outcrops at the site. The Cache formation consists of freshwater sediments comprised of coarse gravel, sand, silt, and clay,

and basal strata of poorly sorted gravel with sand and silt, deposited in an alluvial environment. The slope of the contact between the Cache formation and the basement rock is toward the south at a moderately steep angle based on drill data. A southward dipping contact is consistent with the topography and a south-southwest groundwater gradient determined for the site.

33. Land uses within one mile of the Facility include residential, service commercial, agricultural, rural lands, and open space. Properties west and southwest of the Facility are comprised primarily of residential developments. These properties are zoned as Single Family Residential (R-1), which allows for single family houses of wood frame, manufactured or prefabricated. A portion of the land generally located northwest of the Facility is zoned Neighborhood Commercial (C-1). A larger and more significant portion of the northwestern land is designated as Resource Protection (RP). The purpose of the RP designation is to allow development in environmentally sensitive areas compatible with the environmental constraints of these parcels. The remaining adjoining properties to the north, east, and south are comprised of unincorporated lands of Lake County that include the following zoning designations: Unclassified (U); Open Space (OS), Planned Development Commercial (PDC); Rural Lands (RL); and Agriculture Preserve (APZ). The United States Department of the Interior, Bureau of Land Management (BLM) owns the land east of the Facility. A portion of the BLM parcel was acquired by the Discharger in 2000 as a right-of-way to accommodate the location of the gatehouse and access road construction.

34. Currently, most of the surface water drainage from the site discharges to Molesworth Creek to the west, a tributary to Clear Lake. According to the Central Valley Water Board's *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Basin Plan), the beneficial uses of Clear Lake include: municipal and domestic use (MUN); agricultural supply (AGR); water contact recreation (REC1); non-water contact recreation (REC2); warm freshwater habitat (WARM); potential cold freshwater habitat (COLD); wildlife habitat (WILD); and warm water spawning, reproduction, and/or early development (SPAWN). A small portion of the northeast area of the Facility drains to the unnamed tributary to Cache Creek to the east and south as shown in **Attachment I** which eventually drains to the Yolo Bypass. Both creeks are ephemeral streams that primarily carry surface water in the winter and early spring months. According to the Basin Plan, the beneficial uses of the Yolo Bypass include: municipal and domestic use (MUN); agricultural supply (AGR); water contact recreation (REC1); non-water contact recreation (REC2); warm freshwater habitat (WARM); potential cold freshwater habitat (COLD); wildlife habitat (WILD); wildlife migration (MIGR); and warm water spawning,

reproduction, and/or early development (SPAWN). Following construction of the new stormwater detention basin during the Facility's lateral expansion as shown in **Attachment J** non-contact surface water which falls on the Facility will drain from the new stormwater detention basin to Molesworth Creek. Monitoring and Reporting Program R5-2024-0033 requires monitoring of both Molesworth Creek and the unnamed tributary to Cache Creek.

35. At the Facility, the primary aquifer unit is the permeable Cache formation and an upper fracture zone of the basement rock. Surface water infiltrates the weakly cemented and poorly consolidated sediments of the relatively permeable Cache formation and migrates downward until encountering the less permeable basement rock. Due to weathering and fracturing in the upper sections of the basement rock, a small percentage of the groundwater infiltrates into fractures in the bedrock. However, the contact between the Cache formation and underlying basement rock appears to act largely as a perching layer, which results in flow parallel to the contact beneath site.

36. The permeability of the Cache formation is estimated to range between 1×10^{-4} centimeters per second (cm/sec) and 1×10^{-5} cm/sec. The permeability of the underlying basement rock has not been determined by laboratory testing but is expected to be much less permeable due to its greater age and greater degree of consolidation and cementation compared to that of the overlying Cache formation. Groundwater movement through planar discontinuities in the basement rock is evidenced by the presence of translocated clay within fractures. This suggests that groundwater in the Cache formation and the top of the underlying bedrock is hydraulically connected across a majority of the Facility.

37. The "upper water bearing zone" is considered to be the Cache formation and the upper weathered portion of the basement rock. Groundwater elevations measured in Facility wells appear to reflect the presence of an open and unconfined aquifer, further indicating that the Cache formation and upper weathered bedrock section are hydraulically connected. Transmissivity in this water bearing zone is very low, as demonstrated from recharge rates observed during well sampling activities. Poor recharge rates for most wells in this upper water bearing zone have required implementation of low-flow sampling methodologies in site wells.

38. The Discharger performed a fracture flow analysis study in January 2016 along the western boundary of ESL in open boreholes for groundwater monitoring wells MW-25 and MW-27. Borehole geophysical logging of MW-25 extended to a depth of 140 feet below ground surface (BGS) and to a depth of 91 feet BGS in boring location MW-27. Each of these boring locations was placed adjacent to

existing wells with the intent of having a deeper screen interval for a comparison of groundwater quality and depth-to-water. Well MW-25 is screened in the underlying bedrock 50 feet below the adjacent well MW-5, which is screened in the upper Cache formation. A comparison of water quality and depth-to-groundwater in these two wells shows a distinct difference, indicating separation and that the wells in this area are not hydraulically connected.

39. A fracture and flow analysis was completed for well MW-27 directly adjacent to well MW-26 (screened in upper zone). A comparison of water quality and depth-to-water in these two wells shows that this nested well pair is hydraulically connected at depths within the upper formation and the underlying fractured bedrock. Borehole geophysical logging identified a significant fracture zone at the 89-to-91-foot BGS depth in MW-27, which exhibited a high rate of transmissivity. This is the only boring location at the Facility that has shown a high rate of groundwater flow. The movement of groundwater through the native material is directed to the south-southwest with a gradient range from approximately 0.04 to 0.07 feet per foot (ft/ft).

40. Groundwater underneath the Facility is first encountered between approximately 10 and 100 feet BGS. Groundwater depth is significantly greater on the ridges based on historical site monitoring observations. Seasonal variations in groundwater elevation at the site have been observed to vary in the range of 5 to 10 feet in the upland and sloped areas, to up to 20 feet in some wells located along the canyon floor.

41. The groundwater is unconfined across most of the site. Groundwater elevations in April 2018 ranged from about 1,711 feet NAVD88 at the northeastern end of the permitted refuse limit to 1,570 feet NAVD88 at the southwestern end of the permitted refuse limit along the canyon fill as shown in **Attachment F**. During construction of the unlined Area I WMU, water from springs was discovered, requiring the Discharger to install a series of plastic under-drains in the canyon floor beneath the WMU. Furthermore, a subdrain system was installed below lined Area II Module 1 to collect any groundwater springs or seeps below the WMU. Based on excavation data provided by the Discharger, Attachment F shows areas below the permitted refuse limit where groundwater elevation contours exist above the base elevation of the WMUs. Under these conditions, during certain times of the year, unlined Area I does not have adequate groundwater separation. Title 27, section 20260(a) requires that Class III landfills provide adequate separation between nonhazardous solid waste and the waters of the state (see also Title 27, § 20240(c)). The Discharger has proposed an underdrain system to maintain groundwater separation for Phase 1 through

Phase 4 lateral expansion of the landfill where the Discharger does not have adequate groundwater separation.

42. According to the Basin Plan, the designated beneficial uses of groundwater at the Facility are municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

43. There are 15 domestic, industrial, and agricultural supply wells within one mile of the Facility. The locations of these wells are mapped in **Attachment C**.

44. The closest Holocene fault is the is the seismically active Konocti Bay fault zone, located 5 miles to the southwest at its closest point to the site. The Konocti Bay fault zone is comprised of multiple discontinuous fault segments that strike north-northwest to north-northeast and are located south and east of Mt. Konocti.

45. Class III WMUs must be designed and constructed to withstand a maximum probable earthquake (MPE), whereas Class II WMUs must withstand a maximum credible earthquake (MCE). (Title 27, § 20370.) The Discharger's site-specific seismic analysis indicates that an earthquake, occurring along the Great Valley 03 Mysterious Ridge, at a closest rupture distance of 14.6 miles, would result in the events summarized in **Table 3**.

Table 3—Seismic Analysis

Earthquake	Magnitude	Peak Ground Acceleration	Return Period	Notes
Max Credible (MCE)	7.0	0.55 g	2,475 Years	Class II Surface Impoundment
Max Probable (MPE)	7.0	0.14 g	100 Years	Class III Landfill WMUs

See Glossary for definitions of terms and abbreviations in table.

46. Based on data from Western Regional Climate Center, using the nearest weather station at Clearlake, the Facility has an annual average precipitation of 27.5 inches, and a mean pan evaporation of 60 inches per year. The nearest weather station is reflective of conditions at the Facility.

47. WMUs must be constructed to accommodate stormwater runoff from 24-hour precipitation events with a return period of 100 years for Class III WMUs, and a return period of 1,000 years for Class II WMUs. (See Title 27, § 20320.) According to National Oceanic and Atmospheric Administration’s (NOAA) Precipitation Frequency Atlas 14, Volume 6 (rev. 2014), the Facility’s 100-year

and 1,000-year, 24-hour rainfall events are estimated to result in 6.98 and 9.46 inches of precipitation, respectively. Source: NOAA Precipitation Frequency Data Server (https://hdsc.nws.noaa.gov/hdsc/pfds).

48. A stormwater detention basin is currently situated in the southeast portion of the Facility, as depicted in **Attachment I**. Usually dry during summer months, this stormwater basin discharges to Molesworth creek, a tributary to Clear Lake. The basin also includes an emergency overflow spillway to the unnamed tributary to Cache Creek. During construction of the lateral expansion, the stormwater detention basin will be relocated as shown in **Attachment J**. The relocated stormwater detention basin will intermittently discharge to Molesworth Creek. The Facility is covered under the State Water Board's operative *General Permit for Storm Water Discharges Associated with Industrial Activities*, NPDES Permit No. CAS000001 (Industrial General Permit). Stormwater drainage from the western portion of the Facility will continue to drain to Molesworth Creek.

49. According to the Federal Emergency Management Agency's Flood Insurance Rate Map (https://msc.fema.gov/portal), Community-Panel Number 060633 C0703 D (30 September 2005) the Facility is not located within a 100-year floodplain.

Monitoring Networks

50. As of the date of this Order, the Facility's **groundwater** monitoring network consists of the existing and proposed monitoring wells listed in **Table 4** and shown in **Attachment G**.

Table 4—Groundwater Monitoring Well Network

Well	Program	Monitored Unit	Water-Bearing Zone	Status
MW-2	N/A	N/A	N/A	Destroyed
MW-3	Background	Area I, II	Shallow	Operational
MW-4	N/A	N/A	N/A	Non-Operational
MW-9a	Background	Area I, II	Shallow	Operational
MW-9b	Background	Area I, II	Deep	Operational

Well	Program	Monitored Unit	Water-Bearing Zone	Status
MW-1	Detection	Area I, II	Shallow	Operational
MW-5	Detection/Corrective Action	Area I	Shallow	Operational
MW-6	Detection	Area I	Shallow	Operational
MW-7	N/A	N/A	N/A	Destroyed
MW-8	Detection	Area I	Shallow	Operational
MW-10	Evaluation	Area I	Shallow	Operational
MW-11	Detection	Area I, II	Shallow	Operational
MW-12	Detection	Area I, II	Shallow	Operational
MW-13	Detection/Corrective Action	Area I, II	Shallow	Operational
MW-14	Detection/Corrective Action	Area I, II	Shallow	Operational
MW-15	Detection/Corrective Action	Area I	Shallow	Operational
MW-16	Detection/Evaluation	Area I	Shallow	Operational
MW-17	Detection/Corrective Action	Area I	Shallow	Operational
MW-18	Detection/Evaluation	Area I	Shallow	Operational
MW-19	Detection/Evaluation	Area I	Shallow	Operational
MW-20	Detection/Evaluation	Area I, II	Shallow	Operational
MW-21	Detection/Corrective Action	Area I	Shallow	Operational
MW-22	Detection	Area I	Shallow	Operational

Well	Program	Monitored Unit	Water-Bearing Zone	Status
MW-23	Detection	Area I	Shallow	Operational
MW-24	Detection	Area I	Deep	Operational
MW-25	Detection	Area I	Deep	Operational
MW-26	Detection/Evaluation	Area I, II	Shallow	Operational
MW-27	Detection/Evaluation	Area I, II	Deep	Operational
MW-28	Detection/Evaluation	Area I	Deep	Operational
MW-29	Detection	Area I, II	Deep	Operational
MW-30	Detection/Evaluation	Area I	Shallow	Operational
MW-31	Detection/Evaluation	Area I, II	Shallow	Operational
MW-32	Detection/Evaluation	Area I, II	Shallow	Operational
MW-33	Detection	Area I	Shallow	Operational
MW-34	Detection	Area I, II	Shallow	Operational
MW-35	Detection	Area I, II	Shallow	Operational

See Glossary for definitions of terms and abbreviations in table.

51. As of the date of this Order, the Facility's **unsaturated zone** monitoring network consists of the existing and proposed monitoring points listed in **Table 5**.

Table 5—Unsaturated Zone Monitoring Network

Monitoring Point	Device Type	Program	Monitored Unit	Status
LS-1	Pan Lysimeter	Detection	Area II	Operational
LS-2	Pan Lysimeter	Detection	Area II	Operational
LS-3	Underdrain Pipe	Detection	SI	Operational

Monitoring Point	Device Type	Program	Monitored Unit	Status
GP-1R	Gas Probe	Detection	Area I	Operational
GP-2RA	Gas Probe	Detection	Area I	Operational
GP-3RA	Gas Probe	Detection	Area I	Operational
GP-4A	Gas Probe	Detection	Area I, II	Operational
GP-5R	Gas Probe	Detection	Area I, II	Operational
GP-6R	Gas Probe	Detection	Area II, SI	Operational
GP-7	Gas Probe	Detection	Area II	Operational
GP-8	Gas Probe	Detection	Area II	Operational

See Glossary for definitions of terms and abbreviations in table.

52. As of the date of this Order, the Facility's **surface water** monitoring network consists of the existing and proposed monitoring points listed in **Table 6**.

Table 6—Surface Water Monitoring Network

Monitoring Point	Location	Program	Monitored Unit	Status
SWMS-1	See Attachment G	Detection	Molesworth Creek	Operational
SWMS-2	See Attachment G	Discharge (Downstream)	Unnamed Tributary	Operational
SWMS-3	See Attachment G	Background (Upstream)	Unnamed Tributary	Operational
SWMS-4	See Attachment G	Discharge (Downstream)	Detention Basin	Operational
SWMS-5	See Attachment G	Sedimentation Basin	Detention Basin	Operational

Monitoring Point	Location	Program	Monitored Unit	Status
SWMS-6	See Attachment G	Detection	Molesworth Creek	Operational

See Glossary for definitions of terms and abbreviations in table.

53. As of the adoption of this Order, the above-described networks comply with the monitoring requirements of Title 27. (See Title 27, §§ 20415–20435.) Subsequent changes to these networks will be reflected in a revised MRP Order issued by the Executive Officer.

Water Quality Protection Standard

54. A WQPS is the analytical framework through which WMUs are individually monitored for releases and impacts to water quality. (Title 27, § 20390 (a).) Under Title 27, a WQPS is separately established for each WMU in WDRs. (*Id*.) In accordance with Title 27, this Order, by virtue of its incorporation of **Monitoring & Reporting Program R5-2024-0033 (MRP)** and subsequent revisions thereto, establishes a WQPS for each WMU at the Facility.

Corrective Action
Volatile Organic Compounds in Groundwater

55. WDRs Order R5-2006-0108 (adopted 22 September 2006), Finding 36, states that volatile organic compounds (VOCs) were detected in groundwater monitoring wells MW-5, MW-8, MW-13, and MW-14. That Order required the Discharger to submit a VOC site investigation report with an assessment of the VOC transport mechanism, an Engineering Feasibility Study for potential corrective actions, and a Corrective Action Program to address the VOCs in groundwater. The Discharger submitted a VOC investigation report in 2007 and an engineering feasibility study in 2008.

56. On 26 April 2013, the Central Valley Water Board requested an updated Site Investigation Workplan to define the vertical and lateral extent of VOC contamination in groundwater.

57. On 29 July 2013, the Discharger submitted the VOC Investigation Workplan, which proposed the installation of two wells to determine if a former burn pit was a source of VOC contamination in groundwater. In addition, two replacement wells were proposed to replace wells MW-2 and -7, which had historically produced insufficient water to obtain samples, even after re-development.

58. Wells MW-17, MW-18, MW-19, and MW-20 were installed and sampled in the spring of 2014.

59. On 1 October 2014, the Discharger submitted their VOC Investigation Report of Findings, which showed that new well, MW-17, also exhibited concentrations of fuel-related hydrocarbons as well as VOCs. The VOCs detected at MW-17 include 1,1-dichloroethane, cis-1,2-dichloroethene, benzene, methyl-tert-butyl ether, and tert-butyl alcohol.

60. In April 2015 the Discharger reported VOC detections at wells MW-5, MW-10, MW-13, MW-14, and MW-17, with wells MW-5 and MW-17 exhibiting the most number of detections. The concentrations of benzene at wells MW-5 and MW-17 exceed the health-based California Primary Maximum Contamination Level (MCL) of 0.001 mg/L (Title 22, § 64444). At well MW-10, methyl-tert-butyl ether was first detected in November 2012 and, as of April 2023, it continues to be detected. At well MW-8, there have been no reported detections of VOCs since November 2012.

61. Three landfill gas monitoring wells (LGMW-1, LGMW-2, and LGMW-3) were installed in November 2005 as part of an evaluation monitoring program. LGMW-1 and LGMW-2 were installed within the limits of the landfill, and LGMW-3 was installed outside the limits of the landfill and adjacent to groundwater monitoring well MW-14. The Discharger's 2007 VOC Investigation Report of Findings indicates that all three wells were sampled for VOCs in 2005, and that wells LGMW-1 and LGMW-2 were sampled in 2006. The number of VOC constituents in each sample ranged from 25 to 39 VOCs, with fuel-related products, tetrachloroethene (PCE) and reductive degradation products, and refrigerants (e.g., Freon-12) reported in all samples.

62. Based on Central Valley Water Board staff review of the data and the site investigation reports, the landfill was determined to be the source of the VOC releases to groundwater, which have impacted the beneficial uses of groundwater.

63. On 12 May 2015, Central Valley Water Board staff met with the Discharger to discuss the extent of VOC contamination. Based on those discussions and as outlined in the above Findings, it was determined that the lateral and vertical extent of the VOC plume had not been fully defined, and that further investigation to delineate the release was required.

64. On 30 July 2015 Central Valley Water Board issued Cleanup and Abatement Order (CAO) R5-2015-0713, which required the Discharger to:

a. By 31 August 2015, submit an Updated Evaluation Monitoring Work Plan to define the horizontal and lateral extent of volatile organic compound impacts in groundwater in all aquifer zones affected by the release;

b. By 1 March 2016, submit a Well Installation Report for the monitoring wells installed for compliance with the CAO;

c. By 30 November 2016, submit an Updated Evaluation Monitoring Report of Results, which depicts the vertical and lateral extent of the contamination for zones affected by the release;

d. By 28 February 2017, submit an Updated Engineering Feasibility Study that evaluates different corrective action measures to remediate the groundwater VOC plume; and

e. By 30 June 2017, submit an Additional Corrective Action Implementation Report documenting that the proposed corrective action(s) have been implemented.

65. Through implementation of the CAO program, the vertical and horizontal delineation of the VOC plume in groundwater has been completed. The extent of groundwater monitoring wells impacted by VOCs is described as a lobate-shaped plume that extends west, north, and south from the general area of wells MW-16 and MW-17, as shown in **Attachment H**. VOC detections are suspected to have been caused by the interaction of LFG with groundwater in the western Facility perimeter. Corrective action to address the VOC releases to groundwater has been proposed through expansion of the LFG capture and control system. In response to a Central Valley Water Board staff letter dated 30 March 2018 the Discharger submitted a workplan on 31 May 2018 to install additional landfill gas extraction wells to address the VOC releases to groundwater. Following review of the workplan, Central Valley Water Board staff on 27 March 2024 sent a letter to the Discharger outlining three potential pathways that Central Valley Water Board staff believes will address the groundwater impacts from both leachate and LFG. On 4 April 2024 the Discharger in a letter selected the pathway where it would submit an updated Engineering Feasibility Study by 15 July 2024 that evaluates potential corrective action measures to remediate the groundwater VOC and inorganic plume related to leachate impacts with an estimation of the length of time to clean up the release from leachate and LFG.

Inorganic Compounds in Groundwater

66. The Discharger established concentration limits for inorganic compounds that naturally occur in groundwater to describe background water quality. Continued exceedances of background water quality concentration limits in downgradient

groundwater monitoring wells are indication of a release(s) from a WMU. Central Valley Water Board staff reviewed the Discharger's semiannual self-monitoring reports required under MRP Order R5-2006-0108 and found that the Discharger continues to exceed background concentration limits for inorganic compounds in downgradient groundwater monitoring wells.

67. The continued exceedances of background concentrations of chloride, sodium, potassium, and sulfate are indicative of a leachate-related release(s) from a WMU. On 30 March 2018, Central Valley Water Board staff notified the Discharger that, based on a review of the Discharger's *Engineering Feasibility Study* (Revision 2) and 2017 Semi-Annual Monitoring Report (SMR) monitoring data, the corrective action for the release(s) of VOCs to groundwater would not address a release of leachate to groundwater. The 30 March 2018 letter required the Discharger to submit an evaluation of the inorganic constituents across the site, make a determination whether groundwater impacts were likely being caused by landfill gas, leachate, or both, and propose further delineation of inorganic impacts to groundwater.

68. The Discharger submitted an *Inorganic Constituent Evaluation Report,* dated July 2018, which evaluated concentrations of electrical conductivity, total dissolved solids, chloride, sulfate, and bicarbonate in groundwater. The evaluation report confirmed that leachate had been released from a WMU based on excavation activities and an inspection of conveyance piping carried out by the Discharger. However, the Discharger stated that "the collection of water testing data has shown levels for inorganic constituents in leachate are less than concentrations identified in some monitoring wells."

69. WDRs Order R5-2019-0009 contained provisions to correct certain deficiencies found at the Facility which involved submitting various reports, as listed below, which are currently being evaluated by Central Valley Water Board staff for their completeness. Upon approval, the Discharger shall, if necessary, perform any additional work specified in the report required to correct the deficiency.

    a. Technical Report Evaluating Groundwater Separation;

    b. Leachate Characterization and Quantification Workplan and Technical Report;

    c. Groundwater Monitoring Network Technical Report;

    d. Surface Water Monitoring Program Adequacy Report;

    e. Unsaturated Zone Monitoring Program Adequacy Report;

Unit Construction

70. Liners for **new Class II WMUs** (landfills and surface impoundments) must be designed and constructed to contain fluids (e.g., leachate, waste, and LFG condensate), to prevent the migration of waste to adjacent geologic materials, groundwater, and surface water. (See Title 27, §§ 20310(a), 20330(a).)

71. Liners for **new Class III WMUs** (landfills) must be designed and constructed to contain fluids (e.g., leachate, waste, and LFG condensate) so as to be capable of preventing degradation of groundwater and surface water, even with inadequate site characteristics. (See Title 27, §§ 20310(c), 20330(a).)

72. The Central Valley Water Board is authorized to approve an **engineered alternative** to Title 27 prescriptive standards (see, e.g., Title 27, § 20330(c)), provided that the discharger demonstrates the prescriptive standard is not feasible and there is a specific engineered alternative that is consistent with the performance goal addressed by the particular prescriptive standard and that affords equivalent protection against water quality impairment. (Title 27, § 20080(b).) Per Title 27, section 20080(c), a prescriptive standard is infeasible if it would be unreasonably and unnecessarily burdensome in comparison to the proposed alternative or would be impractical and not promote attainment of applicable performance standards. (See also State Water Board Resolution 93-62).

73. The Discharger submitted Construction Plans for the construction of new WMUs at the Facility, specifically lateral and vertical expansion Phases 1 through 4, as shown in **Attachment E** and **Attachment O**, which incorporate an engineered alternative outlined in **Attachment N**.

74. In 1998, the Discharger submitted a ROWD requesting approval of an engineered alternative to low permeability soil liner requirements for Area II using geocomposite clay liner (GCL) in place of two-feet of compacted clay. In WDRs Order No. 98-159, the Central Valley Water Board approved the proposed engineered alternative liner system design for the Area II WMU. Area II Module 1 was constructed during 1999 and included the entire base liner system for Area II, as well as the side slopes up to the first bench. Area II Module 2 (the remainder of the side slope) was constructed in 2003 using the approved engineered alternative.

75. On 15 September 2000, the Central Valley Water Board adopted Resolution 5-00-*213, Request For The State Water Resources Control Board To Review The Adequacy Of The Prescriptive Design Requirements For Landfill Waste Containment Systems To Meet The Performance Standards Of Title 27*. The

State Water Board responded, in part, that "a single composite liner system continues to be an adequate minimum standard," but the Central Valley Water Board "should require a more stringent design in a case where it determines that the minimum design will not provide adequate protection to a given body of groundwater."

Accordingly, in a letter dated 17 April 2001, the Executive Officer of the Central Valley Water Board notified Owners and Operators of solid waste landfills that,

> . . . the Board will require a demonstration that any proposed landfill liner system to be constructed after 1 January 2002 will comply with Title 27 performance standards. A thorough evaluation of site-specific factors and cost/benefit analysis of single, double, and triple composite liners will likely be necessary. This demonstration will be required regardless of any expansion previously authorized in current waste discharge requirements.

76. The Discharger constructed Area II Module 2 during 2003. This expansion was an extension of the Area II Module 1 liner system up the eastern side slope of Area II. The side slope is inclined at no less than 3H:1V (horizontal to vertical). As described in the preceding Findings, the liner system design and expansion were approved in WDRs Order 98-159 but, pursuant to Resolution 5-00-213, the Discharger was subsequently required to submit a liner performance demonstration for Central Valley Water Board approval. The Discharger submitted a liner performance demonstration report dated 24 September 2002 for Area II Module 2. The proposed design for Area II Module 2 was the same as the previously approved liner system design used for Module 1, with the exception of the subdrain layer, which the Discharger evaluated and determined was not needed in the upper portion of the side-slope area. Therefore, the liner system for Area II Module 2 consists of (from top to bottom):

a. Two-foot thick soil operations layer;

b. LCRS drainage geocomposite;

c. 60-mil thick high-density polyethylene (HDPE) geomembrane (double-sided textured);

d. Geosynthetic clay liner;

e. Subdrain on base to provide adequate groundwater separation (Module 1 only); and

f. Prepared subgrade.

77. As part of the liner performance demonstration, the Discharger's consultant reported detailed evaluations of the performance of single-composite liner systems for slopes ranging from 3H:1V to 2H:1V. The liner performance evaluations indicated that the leakage potentials on these steep side slopes are very low, ranging from 2×10^{-4} gallons per acre per day (gpad) to 2×10^{-5} gpad, based on leachate generation rates ranging from 25 gpad to 60 gpad. These estimated leakage rates were reported to be considered negligible. Cost-benefit analysis further demonstrated that additional liner components added significant cost but provided no significant increase in benefit. Based on the information presented in the liner performance demonstration report submitted by the Discharger, the Central Valley Water Board finds that the proposed side-slope single composite liner system, as described in Unit Construction Specification D.9, meets applicable Title 27 performance standards and that the Discharger has demonstrated that the landfill liner system for Area II complies with Title 27 performance standards.

78. The Central Valley Water Board has routinely approved the substitution of GCLs for the low permeability layer of a landfill liner or cover system. The Central Valley Water Board did not require the Discharger to repeat the demonstrations because there are no significant differences in the characteristics of already approved GCLs and the low permeability layer substitution proposed for the Area II Unit. Furthermore, GCLs are more suitable for steep side slopes such as the Module 2 side-slope liner extension at the Facility because of the difficulties in compacting a clay liner on a steep side-slope. The issuance of these WDRs constitutes continued Central Valley Water Board approval of the GCL engineered alternative.

79. The depth to groundwater in the area proposed for landfill expansion Phase 1-4 areas currently varies from about 10 to 40 feet below the existing ground surface according to information provided by the Discharger, however there is some uncertainty due to well spacing, topography, and hydrogeologic conditions. Design base grades for expansion Phases 1-4 have been set to be a minimum of 10 feet above the highest groundwater elevation. Proposed landfill expansion cell base grades maintain this physical separation based on previously mapped highest groundwater elevations. The Discharger has proposed an engineered alternative for groundwater separation in the expansion areas, where the Discharger is unable to maintain 5 feet of separation between waste and highest anticipated groundwater, including capillary fringe and any intermittent springs or groundwater seeps. The proposed engineered alternative to the 5-foot groundwater separation requirement (see Title 27, § 20240(c)) entails construction of an underdrain below Phases 1-4, where necessary. In floor areas

of the new cells, the underdrain system will consist of a 1-ft thick granular rock layer with permeability equal to or greater than 1.0 cm/sec, placed as a blanket drain over the prepared subgrade. The drain rock layer will be overlain by a geotextile filter fabric. The drain rock layer will be fitted with perforated HDPE pipe that drains to central temporary collection sumps in Phases 1 and 2, and permanent sumps in Phases 3 and 4. The base liner system would be constructed above the underdrain.

80. The Discharger has adequately demonstrated that construction of a liner in accordance with the Title 27 prescriptive standard would be unreasonably and unnecessarily burdensome in comparison to the proposed engineered alternative using GCL. In accordance with Title 27, section 20080(b), the Discharger has demonstrated that construction of an underdrain system as the proposed engineered alternative to maintaining 5-foot groundwater separation, as described above and in **Attachment N**, is consistent with the performance goals of the prescriptive standard (Title 27, §§ 20240(c), 20260) and will afford at least equivalent water quality protections.

81. New WMUs will incorporate the LCRSs described in further detail on **Attachment N**. The proposed LCRSs comply with Title 27 prescriptive standards. (See Title 27, § 20340.)

82. The unsaturated zone monitoring system for future modules will be implemented in accordance with the operative MRP.

83. The Discharger shall submit a seismic analysis for each proposed new WMU that demonstrates that each new WMU will be able to withstand MPE seismic events described in **Finding 45**. (Title 27, § 20370.)

Unit Closures

84. In March 2021, the Discharger submitted a Preliminary Closure and Post-Closure Maintenance Plan (Preliminary CPMP) as part of its JTD, which indicates that the

Facility's WMUs listed in **Table 1** are scheduled to be closed on the date specified in in **Table 7**.

Table 7—Unit Closure Schedule[1]

Unit Module	Estimated Closure Date
All Units listed in Table 1 except Class II Surface Impoundment	2042

85. Per the Preliminary CPMP, the Discharger proposes closure of Unit modules listed in **Table 7** with an engineered alternative final cover, as specified in **Attachment N,** which replaces the low hydraulic conductivity layer with a single composite liner consisting of GCL overlain by geomembrane.

86. The proposed final cover slopes of 3:1 (H:V) or less specified in the Discharger's 2021 JTD are within Title 27 limits (i.e., 1¾ horizontal feet for every 1 foot of vertical gain) and supported by a static and dynamic slope stability analysis demonstrating that side slopes will remain stable, both under static and dynamic conditions, throughout the life of the unit. (See Title 27, § 21750(f)(5).) The final cover will include a 15- to 20-foot-wide bench at minimum for every 50 feet of vertical gain (see Title 27, § 21090(a)) and will have a minimum post-settlement slope across the top deck of four percent (4%).

87. The Discharger's proposed final covers, together with any modifications set forth in **Attachment N**, are hereby approved for closure of the WMUs.

Post-Closure Maintenance & Financial Assurances

88. The Discharger's Preliminary CPMP, dated March 2021, describes the Discharger's proposed post-closure maintenance of the WMUs listed in **Table 1** for the entire post-closure maintenance period of at least 30 years, and until it is demonstrated that the Facility no longer poses a threat to the public health and safety and the environment. (See Title 27, §§ 20950(a)(1), 21180(a).)

89. The Preliminary CPMP includes costs estimates for closure (Title 27, §§ 21820, 22206), post-closure maintenance (§§ 22210–22212), and foreseeable corrective

[1] Closure dates are estimates, which may be affected by several factors (e.g., fluctuating waste receipts).

action for releases (§§ 22220–22222). As of the date of this Order, these estimates, calculated in accordance with Title 27, are specified in **Table 8.**

Table 8—Current Cost Estimates (Financial Assurances)

Requirement	Estimated Cost
Closure	$ 12,182,100
Post-Closure Maintenance	$ 7,896,000
Corrective Action	$ 2,326,507

90. This Order requires the Discharger to maintain financial assurances with CalRecycle in at least the Estimated Cost amounts specified in **Table 8**, in accordance with Title 27.

91. As of the date of this Order, the closure fund, post-closure maintenance fund, and corrective action fund balances are specified in **Table 9.**

Table 9—Current Fund Balances (Financial Assurances)

Requirement	Current Balance
Closure and Post-Closure Maintenance	$ 13,154,755 (see Note)
Corrective Action	$ 1,078,315

Note: The Discharger maintains an enterprise fund which combines closure costs and post-closure maintenance costs into one fund.

California Environmental Quality Act

92. In accordance with the California Environmental Quality Act (CEQA) (Pub. Res. Code, § 21000 et seq.), on 11 June 2020, the Lake County Community Development Department adopted a Mitigated Negative Declaration (MND) in connection with its approval of the proposed landfill expansion project at the Facility (State Clearinghouse No. 2020010546). In the MND, the Lake County Community Development Department found that the project, which includes the following pertinent elements, would not have a significant effect on the environment, provided that specified mitigation measures were implemented:

a. Lateral expansion the permitted landfill area from approximately 35 acres to approximately 56.6 acres;

b. Vertically expansion over existing WMUs without changing the maximum landfill permitted height;

c. construction an all-weather access road; and

d. relocation of the Facility's stormwater detention basin.

93. The Central Valley Water Board's issuance of this Order is a discretionary action subject to CEQA. For purposes of this Order, the Board is a responsible agency and is required to rely on the information in the MND prepared by Lake County for the landfill expansion project. In reaching the decision to adopt this Order, the Central Valley Water Board has considered the MND. This Order incorporates and implements all applicable mitigation and monitoring measures for mitigating or avoiding environmental impacts of the project that are subject to the Board's authority. These WDRs require the Discharger to implement the Mitigation and Monitoring Plan for the Eastlake Sanitary Landfill Expansion approved by Lake County Planning Commission on 11 June 2020 which requires mitigation measures for:

a. environmental impacts to air quality;

b. environmental impacts to biological resources;

c. environmental impacts to cultural resources; and

d. environmental impacts to tribal cultural resources.

Other Regulatory Matters

94. This Order is issued in part pursuant to Water Code section 13263, subdivision (a), which provides as follows:

> The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge, . . . with relation to the conditions existing in the disposal area . . . into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of [Water Code] Section 13241.

95. This Order implements the Central Valley Water Board's Basin Plan, which designates beneficial uses for surface water and groundwater and establishes

water quality objectives (WQOs) necessary to preserve such beneficial uses.[2] (Wat. Code, § 13241 et seq.)

96. The State Water Board's *Statement of Policy with Respect to Maintaining High Quality Waters in California*, Resolution 68-16 (*Antidegradation Policy*) prohibits the Central Valley Water Board from authorizing degradation of "high quality waters" unless it is shown that such degradation: (1) will be consistent with the maximum benefit to the people of California; (2) will not unreasonably affect beneficial uses, or otherwise result in water quality less than as prescribed in applicable policies; and (3) is minimized through the discharger's best practicable treatment or control. Consistent with Title 27, this Order requires the Discharger to maintain the Facility to contain waste within WMUs, thereby preventing degradation of water quality. To the extent that there are releases from Facility WMUs, the Discharger will be required to address such releases through a Corrective Action Program. (See Title 27, §§ 20385, 20415, 20430.) Because this Order does not authorize any degradation in water quality, it complies with the *Antidegradation Policy*.

97. For the purposes of California Code of Regulations, title 23 (Title 23), section 2200, the Facility has a threat-complexity rating of **2**-**B**, where:

    a. Threat Category "2" reflects waste discharges that can impair receiving water beneficial uses, cause short-term water quality objective violations, cause secondary drinking water standard violations, and cause nuisances; and

    b. Complexity Category "B" reflects any discharger not included in Category A, with either (1) physical, chemical or biological treatment systems (except for septic systems with subsurface disposal), or (2) any Class II or Class III WMUs.

Reporting Requirements

98. This Order is also issued in part pursuant to Water Code section 13267(b)(1), which provides that:

> [T]he regional board may require that any person who has discharged, discharges, or is suspected of having discharged or

[2] Designated beneficial uses surface water and groundwater are discussed in Finding 34 and Finding 42, respectively.

> discharging, or who proposes to discharge waste within its region . . . shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

99. The technical reports required under this Order, as well as those required under the separately issued MRP Order, are necessary to ensure compliance with prescribed WDRs and the provisions of Title 27, Subtitle D (40 C.F.R. § 258), and State Water Board Resolution 93-62. Additionally, the burdens associated with such reports are reasonable relative to the need for their submission and the benefits to be obtained thereby.

100. Failure to comply with the reporting requirements of this Order and the operative MRP may result in enforcement action pursuant to Water Code section 13268.

Procedural Matters

101. All local agencies with regulatory jurisdiction over land-use, solid waste disposal, air pollution, and public health protection have approved the use of the Facility's site for the discharge of waste to land as provided for herein.

102. The Discharger, interested agencies, and interested persons were notified of the Central Valley Water Board's intent to prescribe the WDRs in this Order, and provided an opportunity to submit their written views and recommendations at a public hearing. (Wat. Code, § 13167.5; Title 27, § 21730.)

103. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.

104. The Central Valley Water Board will review and revise the WDRs in this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that the Discharger and their agents, employees and successors shall comply with the following.

A. Discharge Prohibitions

The Discharger shall comply with all Standard Prohibitions (Landfill and Class II SPRRs, § C), as well as the following.

1. "**Hazardous Waste**," as defined per Title 23, section 2601, shall not be discharged at the Facility. The Department of Toxic Substances Control shall be immediately notified of any such discharges in violation of this Order.

2. Except as specifically authorized in **Discharge Specification B.1** and **Table 10**, "Designated Waste," as defined per Water Code section 13173, shall not be discharged at the Facility.

3. Except as expressly authorized in **Discharge Specification B.1 and Table 10**, leachate and LFG condensate shall not be discharged into Facility WMUs.

4. The discharge of waste from the Class II surface impoundment to a Class III WMU is prohibited.

5. The discharge of treated wood waste, incinerator ash, or dewatered sludge to unlined Area I WMU is prohibited.

6. The Discharge of any waste to any newly constructed Class II surface impoundment or Class III WMU is prohibited unless and until the Discharger has (a) submitted a final construction report, (b) completed an electronic leak survey of the primary and/or secondary geomembrane liners used for waste containment, (c) received Central Valley Water Board approval of the construction, and (d) received Central Valley Water Board approval of all associated financial assurance documents.

7. The discharge of leachate for soil moisture conditioning is prohibited unless the leachate is "solidified" in accordance with Title 27, section 20200(d) prior to placement of conditioned soil in a solid waste WMU.

8. Except for the Class II surface impoundment, the discharge of waste to ponded water from any source is prohibited.

9. The cessation of any corrective action measure (e.g., LFG extraction, soil vapor extraction, or operation and/or maintenance of any LCRS,

underdrain collection sump, or monitoring system) is prohibited without written approval from the Executive Officer of the Central Valley Water Board. If routine maintenance or a breakdown results in cessation of corrective action for greater than 24 hours, the Discharger shall notify Board staff.

B. Discharge Specifications

The Discharger shall comply with all Standard Discharge Specifications (Landfill and Class II SPRRs, § D), as well as the following:

1. The Discharger shall only discharge waste to Facility WMUs as specified in **Table 10**, subject to the table-specific definitions provided below.

Table 10—Authorized Waste Discharges at Facility

Waste Category	Area-I	Area-II	Area III	Phases 1-4 Expansion	Class II SI
Hazardous Waste Wastes which, pursuant to Title 22, section 66261.3 et seq., must be managed in accordance with Title 22 division 4.5. (Title 27, § 20164; Title 23, § 2521(a).)	No	No	No	No	No
Municipal Solid Waste (MSW) Wastes subject to 40 C.F.R. part 258. (Title 27, § 20164.)	Yes	Yes	Yes	Yes	No
Liquid Designated Waste (1) Hazardous wastes subject to a variance from management requirements per Health and Safety Code section 25143; and (2) Nonhazardous wastes containing constituents that, under ambient conditions, could be released in concentrations exceeding WQOs or could reasonably be expected to affect beneficial uses. (Wat. Code, § 13173.)	No	No	No	No	Yes

Waste Category	Area-I	Area-II	Area III	Phases 1-4 Expansion	Class II SI
Inert Wastes Wastes that contain neither (i) hazardous wastes or soluble pollutants at concentrations in excess of WQOs, nor (ii) significant quantities of decomposable material. (Title 27, §§ 20164, 20230(a).)	Yes	Yes	Yes	Yes	No
Non-Hazardous Construction and Demolition Waste sourced from commercial and industrial sites. (Title 27, §§ 20164, 20220(a).)	Yes	Yes	Yes	Yes	No
Landfill Gas (LFG) Condensate Liquids removed from a gas control system at a landfill and which are produced by the condensation of LFG being conveyed by that system. (Title 27, § 20164.)	No	No	No	No	Yes
Leachate Liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. Includes any constituents extracted from the waste and dissolved or suspended in the fluid. (Title 27, § 20164.)	No	No	No	No	Yes
Non-Friable Asbestos-Containing Waste (>1%) Wastes containing at least one percent of non-friable asbestos particles.	No	Yes	Yes	Yes	No

Waste Category	Area-I	Area-II	Area III	Phases 1-4 Expansion	Class II SI
Treated Wood Waste Wood waste that constitutes a hazardous waste due solely to the presence of a preservative in or on the wood that is registered in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. § 136 et seq.) and which is not subject to regulation as hazardous waste pursuant to RCRA (42 U.S.C. § 6926). (Health & Saf. Code, §§ 25230.1(d), 25230.2.)	No	Yes	Yes	Yes	No
Dewatered Sludge or Acceptable Incinerator Waste (Title 27, §§ 20164, 20220, Table 2.1.)	No	Yes	Yes	Yes	No
Designated Special Wastes[1]	No	No	No	No	No
Disaster Related Waste	No	No[2]	No[2]	No[2]	No

[1]Special wastes (Title 27, § 20164; Title 22, §§ 66261.120-66261.126) include, but are not limited to, triple-rinse pesticide containers, tires, large dead animals, medical wastes, incinerator ash, and agricultural wastes.

[2]Disaster related waste may discharged upon Discharger obtaining permit coverage under State Water Board Order WQ 2020-0004-DWQ *General Waste Discharge Requirements For Disaster-Related Wastes.*

2. The discharge shall remain within the designated disposal area at all times.

3. The Discharger shall promptly remove and relocate all waste discharged at the Facility in violation of this Order. If unable to do so, the Discharger shall submit a report to the Central Valley Water Board explaining how the violative discharge(s) occurred and why the waste(s) cannot be feasibly removed, as well as proposing waste acceptance program updates to

prevent reoccurrences. If the infeasibility is economic, cost estimates shall be provided as part of the report.[3]

4. Treated wood waste shall only be discharged to landfill WMUs specified above in **Section B.1** and **Finding 22**. The Discharger shall manage such waste in accordance with Health & Safety Code sections 25230 et seq. In the event of a verified release from an authorized WMU containing treated wood waste, the Discharger shall suspend all discharges of treated wood waste until corrective action is terminated.

5. The Discharger shall use only the materials described in **Finding 26** as ADC for landfill WMUs. The following materials are currently approved for use as ADC: reusable tarps and Posi-Shell® spray on material or equivalent. If the Discharger proposes to use any other material(s) as ADC, it must first obtain written approval from the Central Valley Water Board that the other material(s) meet the standards of Title 27, section 20705.

6. The Discharger shall not apply ADC materials to areas with drainage beyond contiguous landfill WMUs unless:

   a. The Discharger demonstrates that resulting runoff will not pose a threat to surface water quality (accounting for sediment and suspended solids removal in a sedimentation basin); and

   b. The Central Valley Water Board provides written concurrence with the results of the demonstration.

7. Notwithstanding **Discharge Specification B.1** and **Table 10**, **LFG Condensate** and **Leachate** from landfill WMUs shall not be discharged to other WMUs unless approved in writing by the Central Valley Water Board. (See Title 27, § 20340.)

C. Facility Specifications

The Discharger shall comply with all Standard Facility Specifications (Landfill and Class II SPRRs, § E), as well as the following:

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[3] Submission of such report does not authorize the violative discharge or waive liability therefore. The Central Valley Water Board may direct the removal of waste not authorized under this Order.

1. For new Class III landfills, the Discharger shall provide minimum 5-feet separation between nonhazardous solid waste and waters of the state. (Title 27, § 20240(c).) Existing WMUs shall be operated to maintain the required separation to ensure protection of the background quality of groundwater and surface water.

2. For Class II surface impoundments, the Discharger shall operate the Class II surface impoundment such that 5-feet separation is maintained between waste and highest anticipated groundwater, including any capillary fringe. (Title 27, § 20240(k).) The Class II surface impoundment waste elevation is at 1,572 feet above MSL. Therefore, groundwater elevation including capillary fringe shall not exceed 1,567 feet above MSL.

3. The Discharger shall immediately notify the Central Valley Water Board of any flooding, unpermitted off-site discharge of waste, equipment failure, slope failure, significant erosion, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

4. The Discharger shall maintain any disturbed areas, including side-slopes, to prevent erosion in accordance with the Storm Water Pollution Prevention Plan for the Facility.

5. The Discharger shall repair erosion damage or slope failure in a timely manner and shall immediately provide interim repairs to such damaged areas if permanent repair is not immediately feasible due to wet conditions.

6. Water used for Facility maintenance shall be limited to the minimum amount necessary for dust control and construction.

7. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with these WDRs.

8. The Discharger shall maintain its existing LFG control system, as shown in **Attachment K**, including any improvements. Methane and other LFGs shall be adequately vented, removed from the WMUs, or otherwise controlled as needed to prevent adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.

9. Surface drainage within the Facility shall either be contained onsite or be discharged in accordance with the State Water Board's General Permit for

Storm Water Discharges Associated with Industrial Activities, NPDES Permit No. CAS000001, which requires maintenance of a Storm Water Pollution Prevention Plan and monitoring and reporting concerning storm water discharges, as well as any other applicable storm water regulations.

D. Unit Construction Specifications

The Discharger shall comply with all Standard Construction Specifications and Storm Water Provisions (Landfill and Class II SPRRs, §§ F & L, respectively), as well as the following.

1. Except as authorized in **Unit Construction Specification D.2**, the Discharger shall not commence liner construction (other than preparatory earthmoving and rough grading) until Central Valley Water Board staff has provided written concurrence that the design report and all necessary construction plans, specifications, and CQA Plans related to the new liner(s) and/or final closure cover(s) comply with the waste containment system specified in these WDRs to protect receiving water quality.

2. Prior to construction of any new WMU or expansion of any existing WMU(s), the Discharger shall submit, for Central Valley Water Board staff review and concurrence, a design report, plans, and specifications, including the following:

   a. A CQA Plan meeting the requirements of Title 27, section 20324;

   b. A geotechnical evaluation of the area soils, evaluating their use as the base layer; and

   c. A monitoring and operations system plan, which is demonstrated to remain effective throughout the active life, closure, and post-closure maintenance periods of the Unit in accordance with Title 27, section 21760.

3. For **new WMUs**, as listed in **Table 1** and **Discharge Specification B.1**, base liners and slope liners shall be constructed according to specifications in **Unit Construction Specifications D.10** and **D.11**, as shown in **Attachment N**.

4. The Discharger shall not implement changes to approved liner designs in **Attachment N** unless and until the Central Valley Water Board approves any proposed change(s) in writing and provided that the proposed change(s):

   a. Does not eliminate previously approved components;

b. Does not substantially reduce the engineering properties of previously-approved components; and

c. Will result in water quality equal to or greater than the design(s) prescribed by Title 27, section 20310 et seq., and this Order.[4]

5. For new Class III landfills, the Discharger shall provide a minimum 5-feet separation between nonhazardous solid waste and waters of the state. (Title 27, § 20240(c).) Existing WMUs are to be "operated" to maintain the required separation to ensure protection of the background quality of groundwater and surface water.

6. All CQA monitoring and testing during the construction of any liner or final closure cover system shall be performed by a neutral third party that is independent from both the Discharger and the Discharger's construction contractor(s).

7. Following the completion of construction of a WMU or portion of a WMU, and prior to discharge onto the newly constructed liner system, the final documentation required per Title 27, section 20324(d)(1)(C) shall be submitted to the Central Valley Water Board for review and concurrence. The report shall be certified by a registered civil engineer or a certified engineering geologist and contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.

8. If monitoring reveals substantial or progressive increases of leachate generation above the design leachate flow volume for any WMU or portion of a WMU (landfill or surface impoundment), such that the depth of fluid on any portion of the LCRS (excluding the leachate removal pump sump) exceeds 30 cm, the Discharger shall notify the Central Valley Water Board in writing within seven days. The notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.

Existing Landfill Liner System Components

[4] Proposed changes that do not meet these criteria are considered "material," and will require the revision of this Order.

9. The existing liner system for Area II Modules 1 and 2 was constructed in accordance with the following composite liner design and shall be maintained and/or repaired as follows (from top to bottom):

   a. Two-foot-thick soil operations layer;

   b. LCRS drainage geocomposite;

   c. 60-mil-thick HDPE geomembrane (double-sided textured);

   d. GCL that shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep shear, and bearing capacity;

   e. Subdrain geocomposite drainage layer (necessary in Module 1, but only as necessary in certain areas of Module 2); and

   f. Prepared subgrade that is prepared in an appropriate manner using accepted engineering and construction methods so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL or the HDPE geomembrane.

Proposed Landfill Liner System Components (Phases 1-4)

10. The proposed liner system for Phases 1 through 4 of the lateral expansion of the existing landfill shall be constructed in accordance with the following composite liner design and shall be maintained and/or repaired as follows (from bottom to top):

   a. Cell floor:

      i. Prepared subgrade;

      ii. Underdrain System (i.e., perforated HDPE pipe embedded in 1-foot granular material layer) if over the lifespan of the unit including operating, closure, and post closure phase less than 5-foot separation is anticipated between waste and highest anticipated groundwater elevation, including capillary fringe, intermittent springs, and/or groundwater seeps;

      iii. 60-mil-thick HDPE geomembrane textured both sides (secondary composite liner component);

      iv. GCL;

      v. 60-mil-thick textured HDPE geomembrane (primary composite liner component);

vi. Geotextile cushion (minimum 12 ounce per square yard);

vii. 1-foot-thick LCRS granular layer;

viii. Geotextile separator; and

ix. 2-foot-thick soil operations layer.

b. Sideslopes:

i. Prepared subgrade;

ii. Underdrain constructed with geocomposite drainage material if less than 5-foot separation exists between waste and highest anticipated groundwater elevation, including capillary fringe, intermittent springs, and/or groundwater seeps;

iii. 60-mil-thick textured HDPE geomembrane;

iv. GCL;

v. 60-mil-thick textured HDPE geomembrane;

vi. Geocomposite LCRS layer; and

vii. 2-foot-thick soil operations layer.

Preferential LCRS Pathway Layer (Vertical Expansion Liner System)

11. The proposed liner system for the vertical expansion over existing landfill WMUs shall be constructed in accordance with the following composite liner design and shall be maintained and/or repaired as follows (from bottom to top):

a. Prepared subgrade of existing intermediate cover. Surficial vegetation will be removed and the exposed subgrade will be compacted to provide a firm surface for placement of overlying materials;

b. GCL;

c. 40-mil-thick LLDPE geomembrane;

d. Geocomposite liquids collection layer that allows for removal of leachate from overlying new fill; the drainage layer will discharge to the LCRS aggregate layer in the new lined cells; and

e. 2-foot-thick soil operations layer.

Class II Surface Impoundment Liner Components

12. The existing Class II surface impoundment liner system consisted of and shall be maintained and/or repaired as follows, from the top down:

    a. Primary 80-mil HDPE geomembrane;

    b. 1-foot-thick gravel on base and geocomposite geonet drainage layer on side slopes as a LCRS;

    c. Secondary 60-mil HDPE geomembrane or 40-mil LLDPE geomembrane;

    d. GCL;

    e. Appropriate bedding layer; and

    f. Foundation layer suitable for providing a stable base for the overlying secondary geomembrane that will not damage the geomembrane or GCL over the life of the surface impoundment.

13. The Discharger shall include design features that protect the primary geomembrane from damage due to, among other things, wind uplift, maintenance procedures such as solids removal, and/or ultraviolet radiation degradation, for the entire useful life of the surface impoundment.

14. The Class II surface impoundment, if unable to discharge to a sanitary sewer, shall be designed and constructed to have capacity to contain wastewater flows (i.e., leachate, underdrain liquids, and gas condensate) to the impoundment, precipitation from a 100-year wet season of 56.66 inches distributed at least monthly, a 1,000-year, 24-hour storm event (design storm) of 9.46 inches, and shall be maintained to preserve at least two (2.0) feet of freeboard at all times.

15. The Discharger shall perform a detailed water balance for any new surface impoundment that is unable to discharge to a sanitary sewer or if an existing surface impoundment is no longer able to discharge to a sanitary sewer, to demonstrate that the proposed design and construction has sufficient storage capacity to comply with Title 27, section 20375. The water balance must, at a minimum, take the following factors into account on a monthly basis:

    a. The average influent flow of leachate, underdrain liquids, and LFG condensate;

    b. Evaporation losses from the impoundment;

c. Authorized discharges from the impoundment (e.g., for dust control, disposal via exportation or sanitary sewer, storage in auxiliary above ground tanks, etc.);

d. Loss of storage capacity due to operations layer, solids accumulation, or other factors;

e. The 100-year wet season (56.66 inches) is distributed monthly in accordance with average monthly rainfall patterns used to determine wastewater production at the Facility and other liquid wastes discharged to a Class II surface impoundment that will not be returned to a solid waste landfill WMU;

f. The evaporative surface area of the impoundment, based on wastewater elevation in the Class II surface impoundment;

g. The total surface area of the site runoff area from which flows are captured and conveyed to the impoundment (for Class II surface impoundments not discharging to the solid waste landfill WMUs);

h. The design storm event capacity that needs to be maintained to capture design storm runoff conveyed to the impoundment (for Class II surface impoundments not discharging to solid waste landfill WMUs);

i. The design storm capacity for rainfall into the surface impoundment; and

j. Additional capacity necessary to maintain the minimum two-foot freeboard requirement.

16. The surface impoundment(s) shall be designed, constructed, and maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the impoundments and where those features are impacted by wave action at the water line.

17. Any direct-line discharge to the surface impoundment shall have fail-safe equipment or operating procedures to prevent overfilling during the wet weather season, including but not limited to, daily inspection and manual control of pumping systems.

18. The bottom slope of any surface impoundment shall have a minimum one percent post settlement slope and shall be graded to provide positive drainage of LCRS leachate to the leachate sump and ensure unconfined leachate flow in the LCRS drainage layer and proper venting of any LFG that may form in the LCRS or below the secondary geomembrane liner.

19. The LCRS for the Class II surface impoundment shall be designed, operated, and maintained to collect twice the anticipated daily volume of

leachate generated by the WMU and to prevent the buildup of hydraulic head on the underlying liner at any time. The LCRS pump shall be capable of removing this volume of fluid and/or 150 percent of the Action Leakage Rate (ALR) flow, whichever is greater. The depth of fluid in the LCRS sump shall be kept at the minimum needed to ensure efficient pump operation and shall not exceed one-foot head at any time on the secondary liner.

20. The LCRS for the Class II surface impoundment shall be designed, operated, and maintained to function without clogging through the scheduled closure of the surface impoundment. The surface impoundment shall be equipped to facilitate annual testing of the LCRS drainage material to demonstrate proper operation as required by Title 27, section 20340(d).

21. The depth of the fluid in the leachate sump of the Class II surface impoundment shall be kept at the minimum needed for efficient pump operation (given the pump intake height and cycle frequency), and leachate shall not back up onto the secondary liner system outside of the sump area.

22. Leachate generation within a surface impoundment LCRS shall not exceed 85 percent of the design capacity of (a) the LCRS or (b) the sump pump. If leachate generation exceeds this value and/or if the depth of the fluid in an LCRS exceeds the minimum needed for safe pump operation, then the Discharger shall immediately cease the discharge of waste (including leachate) to the impoundment and shall notify the Central Valley Water Board in writing within seven days. Notification shall include a timetable for a remedial action to repair the upper liner of the impoundment or other action necessary to reduce leachate production.

23. The LCRS for the Class II surface impoundment shall be designed and constructed to transmit twice the maximum ALR of 1,000 gpad under unconfined flow conditions, considering LCRS transmissivity reduction factors due to clogging of the LCRS over the life of the Class II surface impoundment.

24. Leachate removed from a surface impoundment LCRS shall be discharged to the impoundment from which it originated.

25. The ALR for the existing 0.40-acre Class II surface impoundment is 1,000 gallons per acre per day (gpad) or 12,000 gallons over a 30-day period. If leachate generation in the LCRS of the Class II surface impoundment exceeds the ALR, the Discharger shall:

a. Immediately notify Central Valley Water Board staff by telephone and email.

b. Submit written notification within seven days that includes a time schedule to locate and repair leak(s) in the liner system.

c. If repairs pursuant to the time schedule required under “b” above do not result in a leakage rate less than the required ALR, submit written notification within seven days that includes a time schedule for replacement of the upper liner of the surface impoundment or other action necessary to reduce leachate production.

d. Complete repairs or liner replacement in accordance with the approved time schedule(s) under “b” and/or “c”, above.

26. If liquid is detected in a pan lysimeter or any other unsaturated zone monitoring device for a Class II surface impoundment indicating a leak in the containment structure, the Discharger shall:

a. Immediately notify Central Valley Water Board staff by telephone and email that the containment structure may have failed.

b. Cease discharging waste into the Class II surface impoundment until a determination is made as to the source of the liquid.

c. Immediately sample and test the liquid in accordance with the unsaturated zone monitoring requirements in the operative MRP.

d. If the laboratory results indicate that the liquid can be characterized as contents of the Class II surface impoundment, submit written notification of the release to Central Valley Water Board staff within seven days, including a time schedule to repair the containment structure(s). If the laboratory results do not indicate that the liquid can be characterized as contents of the Class II surface impoundment, submit written notification to Central Valley Water Board staff within 14 days including the laboratory results and a report describing why the source of the liquid is not from the contents of the surface impoundment. The report must describe where the liquid originated from and what corrective action will be taken in the future to prevent the liquid from entering the pan lysimeter or other type of unsaturated zone monitoring device.

e. If repairs are necessary, complete repairs of the containment structures in accordance with the approved time schedule.

27. Solids that accumulate in the Class II surface impoundment shall be periodically removed to maintain minimum freeboard requirements and to maintain sufficient capacity for surface impoundment leachate and for the discharge of wastes. Prior to removal of these solids, sufficient samples

shall be taken for their characterization and classification pursuant to Title 27, division 2, chapter 3, subchapter 2, article 2. The rationale for the sampling protocol used, the results of this sampling, and a rationale for classification of the solids shall be submitted to Central Valley Water Board staff for review. The Discharger shall submit a work plan and schedule to Central Valley Water Board staff at least 90 days prior to removal of the waste that includes the waste characterization and how the Discharger plans to dispose of the sludge and solids.

28. Following sediment/solids removal from the Class II surface impoundment, the liner system shall be inspected for any damage caused by the process of removing the sediment/solids and any damage shall be repaired within 60 days prior to the discharge of additional wastewater. The Discharger shall submit a final report describing the results of the leak testing to Central Valley Water Board staff.

29. No waste shall be discharged into any new surface impoundment until all applicable financial accounts for these WMUs have been properly funded.

30. The Class II surface impoundment shall have a sump to collect and return leachate to the impoundment that leaks through the primary liner. The sump shall include a dedicated automated pump to remove leachate and return it to the impoundment. The sump and pumping system shall be designed and constructed such that in the case of a pump failure the Discharger has sufficient time to repair/replace the pump and still comply with the requirement to limit head on the secondary liner to one foot.

31. The Class II surface impoundment shall be designed and constructed to have a flow totalizer operational at all times that measures leachate volumes pumped from the LCRS sump in order to determine leakage rates and compliance with the ALR.

32. The Class II surface impoundment shall be designed and constructed to have an unsaturated zone monitoring system consisting of a pan lysimeter beneath the entire LCRS sump area of the impoundment or other approved unsaturated zone monitoring device where installation of a pan lysimeter is infeasible.

33. The Class II surface impoundment shall have permanent markings on the liner, or a permanent freeboard gauge, so that the freeboard can be observed and recorded at any time. The markings or gauge shall have increments no greater than one vertical inch.

34. The Discharger shall not proceed with liner construction, except earth moving and rough grading in preparation for liner construction, until the

construction plans, specifications, and all applicable CQA plans have been approved.

35. The Discharger shall perform a final electronic leak survey of the primary and secondary geomembrane liners and make repairs as necessary prior to placement of waste in the Class II surface impoundment.

E. Closure & Post-Closure Maintenance Specifications

For closure of landfills at the Facility, the Discharger shall comply with all Standard Closure and Post-Closure Specifications and all Standard Construction Specifications that are applicable to closure Landfill and Class II SPRRs, §§ G & F, respectively), as well as the following:

1. The Discharger shall submit a Final or Partial Final Closure and Post Closure Maintenance Plan (CPMP), in accordance with section G of the SPRRs, at least two years prior to the proposed closure of any portion of any landfill. At the time of adoption of these WDRs, the Discharger's current proposed final closure cover is as shown in **Attachment M**.

2. The Discharger shall close landfills with the final cover components proposed in the operative Preliminary CPMP, as approved per **Finding 85** and **Attachment N**.

3. The Discharger shall obtain revised WDRs prior to closure of any landfill with a final cover other than the one(s) approved herein.

4. During or after final cover installation, the Discharger may perform minor modifications to problematic areas of the final cover, provided that: (a) the barrier layer of the final cover (e.g., geomembrane, GCL, and/or compacted clay layer) remains intact, continues to satisfy slope stability requirements, and does not degrade the ability of the final closure cover to meet original design and performance specifications, and (b) the Central Valley Water Board staff concur with such modifications.

5. The landfill shall be filled with final side slopes with steepness no greater than 3H:1V (3 horizontal units to 1 vertical unit) and shall include, at a minimum, one 20-foot-wide bench for every 50 feet in vertical height or less and top deck areas shall be sloped at five percent or greater taking into consideration post closure settlement.

6. Any final closure cover over a WMU shall be designed and constructed to reduce soil pore gas pressures below the closure over barrier layer that may cause final cover slope instability throughout the post-closure maintenance period.

7. The Discharger shall install an active LFG extraction system for the closed landfill unit during landfill closure, and LFG shall be extracted from closed landfill units until such time that the LFG is no longer a threat to water quality, as documented by the Discharger and approved by the Executive Officer. At the time of adoption of these WDRs, the Discharger proposes a final LFG control system shown in **Attachment L**.

8. If the final cover incorporates a geomembrane barrier, all edges of the final cover shall be sealed by connecting to the liner.

9. The Discharger shall apply a volume of seed, binder, and nutrients to the vegetative/erosion-resistant layer sufficient to establish the vegetation proposed in the final CPMP. The Discharger shall also install any necessary erosion and sedimentation controls to protect vegetation while it is being established.

10. Critical interfaces of the final cover shall be laboratory-tested to ensure minimum design shear strength are achieved and include the results in the final documentation report and also demonstrate and certify that any testing required and any limitations or additional requirements specified in the final closure cover's slope stability analysis report was complied with during construction in order to validate the slope stability analysis report conclusions. The results of such testing shall be reported to the Central Valley Water Board as part of the CQA Report.

11. At closure of the Class II surface impoundment, the Discharger shall clean-close the unit pursuant to Title 27, section 21400(b)(1). All precipitates, settled solids, liner materials, and adjacent natural geologic materials contaminated by wastes shall be completely removed and discharged to an appropriately permitted landfill facility. If, after reasonable attempts to remove contaminated natural geologic materials, the Discharger demonstrates that removal of all remaining contamination is infeasible, the impoundment shall be closed as a landfill pursuant to Title 27, section 21400(b)(2)(A). In this event, the Discharger shall backfill and grade the area and submit a revised Final CPMP proposing a final cover meeting the requirements of Title 27, section 21090, and shall perform all post-closure maintenance in the approved CPMP.

12. Prior to closure, the Discharger shall submit a Final CPMP, prepared by a California-registered civil engineer or certified engineering geologist, that contains all applicable information required in Title 27, section 21769. The plan shall include any closure/post-closure elements proposed in the ROWD and shall meet the requirements of this Order.

13. The Discharger shall perform final cover system maintenance in accordance with an approved Final CPMP, which shall include but not be limited to:

    a. Periodic inspections;

    b. Final cover surveys;

    c. Five-year iso-settlement maps;

    d. Survey and maintenance of settlement monuments;

    e. Period leak searches;

    f. Preventative maintenance;

    g. Repairs; and

    h. Record keeping and reporting.

F. Financial Assurances

The Discharger shall comply with all Standard Financial Assurance Provisions (Landfill and Class II SPRRs, § H), as well as the following.

1. The Discharger shall maintain with CalRecycle assurances of financial responsibility for the amounts specified for each category in **Finding 89,** adjusted annually for inflation.

2. A report regarding financial assurances, or a copy of the financial assurances report submitted to CalRecycle, shall be submitted to the Central Valley Water Board annually, no later than **1 June**.

3. If CalRecycle determines that the submitted financial assurances for the Facility are inadequate, the Discharger shall, within 90 days of such determination:

    a. Obtain a new financial assurance mechanism for the amount specified by CalRecycle; and

    b. Submit a report documenting such financial assurances to CalRecycle and the Central Valley Water Board.

4. The operative Preliminary CPMP shall include all components required per Title 27, section 21769 (c) and include a detailed and lump sum cost estimate for:

a. Completion of all actions required for closure of each WMU;

b. Preparation of detailed design specifications;

c. Development of a Final CPMP; and

d. Undertaking at least 30 years of post-closure maintenance.

5. Whenever changed conditions increase the estimated costs of closure and post-closure maintenance, the Discharger shall promptly submit an updated CPMP to the Central Valley Water Board, CalRecycle, and the LEA.

6. 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 from the landfill and Class II surface impoundment WMUs in at least the amount of the annual inflation-adjusted cost estimate of **Finding 89**. A report regarding financial assurances for corrective action shall be submitted to the Central Valley Water Board by 1 June of each year. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle or Central Valley Water Board staff 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.

G. Monitoring Requirements

The Discharger shall comply with all applicable Standard Monitoring Specifications and Standard Response to Release Specifications (Landfill and Class II SPRRs, §§ I & J, respectively), as well as the following:

1. The Discharger shall comply with all provisions of the separately issued Monitoring R5-2024-0033 and any subsequent revisions thereto (operative MRP).

2. The Discharger shall implement the WQPS set forth in the operative MRP (see also Title 27, § 20390) and shall verify the compliance of each WMU with each subsequent monitoring event.

3. For all WMUs, the Discharger shall implement a groundwater, surface water, and unsaturated zone detection monitoring program in accordance with Title 27, sections 20385, 20415, and 20420.

4. For each WMU subject to corrective action, the Discharger shall implement a corrective action monitoring program in accordance with Title 27, sections 20385, 20415, and 20430, and SPRRs, Section I.

5. The Discharger shall submit for review and approval a groundwater detection monitoring program demonstrating compliance with Title 27 for any new units or Unit expansion authorized by these WDRs.

6. A pan lysimeter shall be installed beneath the LCRS sump and a portion of the LCRS piping for each new landfill cell/module for the purpose of unsaturated zone monitoring. If any new or existing WMU does not have an LCRS sump, the Discharger will install an appropriate number of landfill gas probes and/or lysimeters beneath the base of the new landfill and along the edge of the containment system to monitor soil pore gas and soil pore liquid in the unsaturated zone.

7. The Discharger shall monitor the underdrain, LCRS, and any leak detection system (secondary LCRS) associated with each WMU. The liquid shall be collected as close to edge of waste as possible for each phase of construction in order to provide representative samples.

8. Unsaturated zone monitoring systems shall be capable of measuring both saturated (soil pore liquids or leachate) and unsaturated (soil pore gas or landfill gas) COC concentrations that may exist as a result of a release from the WMU.

9. The concentrations of the constituents of concern in waters passing the Point of Compliance (i.e.,a vertical surface located at the hydraulically downgradient limit of the landfill unit that extends through the uppermost aquifer underlying the unit (Title 27, § 20164)) shall not exceed the concentration limits established in the operative MRP.

10. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the WQPS using the procedures specified in the operative MRP and Section I (Standard Monitoring Specifications) of both the Landfill SPRRs and Class II SPRRs.

11. As specified in the operative MRP, the Discharger shall enter all reports and monitoring data, including but not limited to boring logs and groundwater elevation readings, into the online Geotracker database, as required by Title 27, division 3, and Title 23, division 3, chapter 30.

12. The Discharger shall evaluate, as part of its Corrective Action Monitoring Program, the effectiveness of its corrective action program and provide, as

part of its reporting requirements, an estimate as to when the Discharger will achieve full compliance.

13. The Discharger shall add any confirmed constituents of concern detected during its five-year monitoring schedule, using Attachment C through Attachment F of the operative MRP, to Attachment A for detection monitoring purposes.

14. Any new, repaired, or replaced monitoring device installed to determine compliance with these WDRs shall begin sampling for all parameters listed in the tables of the operative MRP for the applicable media being monitored (e.g., groundwater, unsaturated zone, or surface waters) within 72 hours of determining that the monitoring device is fully functional. The Discharger shall also increase monitoring frequency at the new, repaired, and/or replaced monitoring device such that the Discharger can establish baseline water and/or gas quality characteristics within one year at the monitoring point that is representative and captures seasonal fluctuations at the monitoring device. Installation of monitoring devices for monitoring new WMUs shall occur at least one year prior to placement of waste in the new WMU such that the Discharger can establish baseline water and/or gas quality characteristics at each new monitoring point that are representative of seasonal fluctuations at the monitoring device.

H. Reporting Requirements

In addition to those Landfill and Class II SPRRs pertaining to notification and reporting obligations (see, e.g., §§ K.1-2, K.6, K.8-10), the Discharger shall comply with the following provisions:

1. The Discharger shall comply with all MRP provisions pertaining to the submittal and formatting of reports and data.

2. 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.

3. 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 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)

4. Reports shall be submitted electronically via the State Water Board's GeoTracker Database (https://geotracker.waterboards.ca.gov). After uploading, the Discharger shall notify Central Valley Water Board staff via email at CentralValleySacramento@WaterBoards.ca.gov. The following information shall be included in the body of the email:

Attention:	Title 27 Compliance & Enforcement Unit
Report Title:	[Enter Report Title]
GeoTracker Upload ID:	[Number]
Facility:	County of Lake Public Services Department
County:	Lake County
CIWQS Place ID:	CW-222082

5. All technical reports submitted under this Order shall be prepared by, or under the direct supervision of, a California-licensed civil engineer or engineering geologist. For the purposes of this section, a "technical report" is a report incorporating the application of scientific or engineering principles.

I. Time Schedule

The Discharger shall complete the following tasks in accordance with the specified deadlines:

Table 11—Time Schedule

Item No.	Category	Task	Deadline
1.	Construction	Submit construction and design plan(s) for review and approval in accordance with Section D of this Order, and Section F of the SPRRs.	90 Days Prior to Proposed Construction
2.	Construction	Submit construction report(s) for review and approval upon completion demonstrating construction was in accordance with approved construction plans and Section F.27 of the SPRRs.	60 Days Prior to Proposed Discharge to Unit(s)
3.	Final Closure	Submit final or partial final (CPMP), design plans and CQA plan for review and approval, in accordance with Section E of this Order and Section G of the SPRRs.	2 Years Prior to Closure
4.	Corrective Action	Upon approval of the Technical Reports described in **Finding 65 and Finding 69** the Discharger shall if necessary perform any additional work specified in the reports required to correct the deficiency.	Varies

J. Other Provisions

1. The Discharger shall maintain at the Facility copies of this Order (including all attachments), the operative Monitoring & Reporting Program (i.e., MRP R5-2024-0033 and any revisions thereto), and the SPRRs. These materials shall be made available to all operating personnel, who shall be familiar with the contents of such materials and to regulatory agency personnel. A copy of all documents submitted to the Central Valley Water Board shall be maintained in the Facility's operating record.

2. All technical and monitoring reports required by this Order shall be submitted pursuant to Water Code section 13267, and to the extent applicable, shall be prepared by the appropriately licensed professional who is competent to take responsible charge over the required report as described in the Standard Provisions and Reporting Requirements.

3. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27, dated December 2015 for landfills and SPRRs dated April 2016 for Class II surface impoundments, which are attached hereto and made part of this Order by reference.

4. The Discharger shall comply with all applicable provisions of Title 27 (including those provisions not specifically referenced herein).

LIST OF ATTACHMENTS

Attachment A—SITE LOCATION map
Attachment B—LANDFILL PREDEVELOPMENT TOPOGRAPHY
Attachment C—1-MILE VICINITY WATER SUPPLY WELL MAP
Attachment D—FACILITY FEATURES AND APN PARCEL MAP
Attachment E—PROPOSED LANDFILL LATERAL AND VERTICAL EXPANSION
Attachment F—INADEQUATE GROUNDWATER SEPARATION AREA
Attachment G—EXISTING GROUNDWATER AND SURFACE WATER MONITORING
Attachment H—ISO-CONCENTRATION MAPS OF DETECTED VOCS IN GROUNDWATER
Attachment I—EXISTING SURFACE WATER DRAINAGE SYSTEM
Attachment J—FINAL SURFACE WATER DRAINAGE SYSTEM
Attachment K—EXISTING LANDFILL GAS CONTROL SYSTEM
Attachment L—FINAL LANDFILL GAS CONTROL SYSTEM
Attachment M—FINAL CLOSURE COVER
Attachment N—LINER DESIGN CROSS SECTIONS
ATTACHMENT O—VERTICAL EXPANSION CROSS SECTIONS

Standard Provisions and Reporting Requirements for Non-Hazardous Discharges of Waste Regulated under Subtitle D and/or Title 27, December 2015 Edition (Landfill SPRRs)

Standard Provisions and Reporting Requirements for Class II Surface Impoundments dated April 2016 (Class II SPRRs)

Information Sheet for [TENTATIVE] Waste Discharge Requirements Order (Information Sheet) which contains additional findings by the Central Valley Water Board

Monitoring and Reporting Program R5-2024-0033 (separate document)

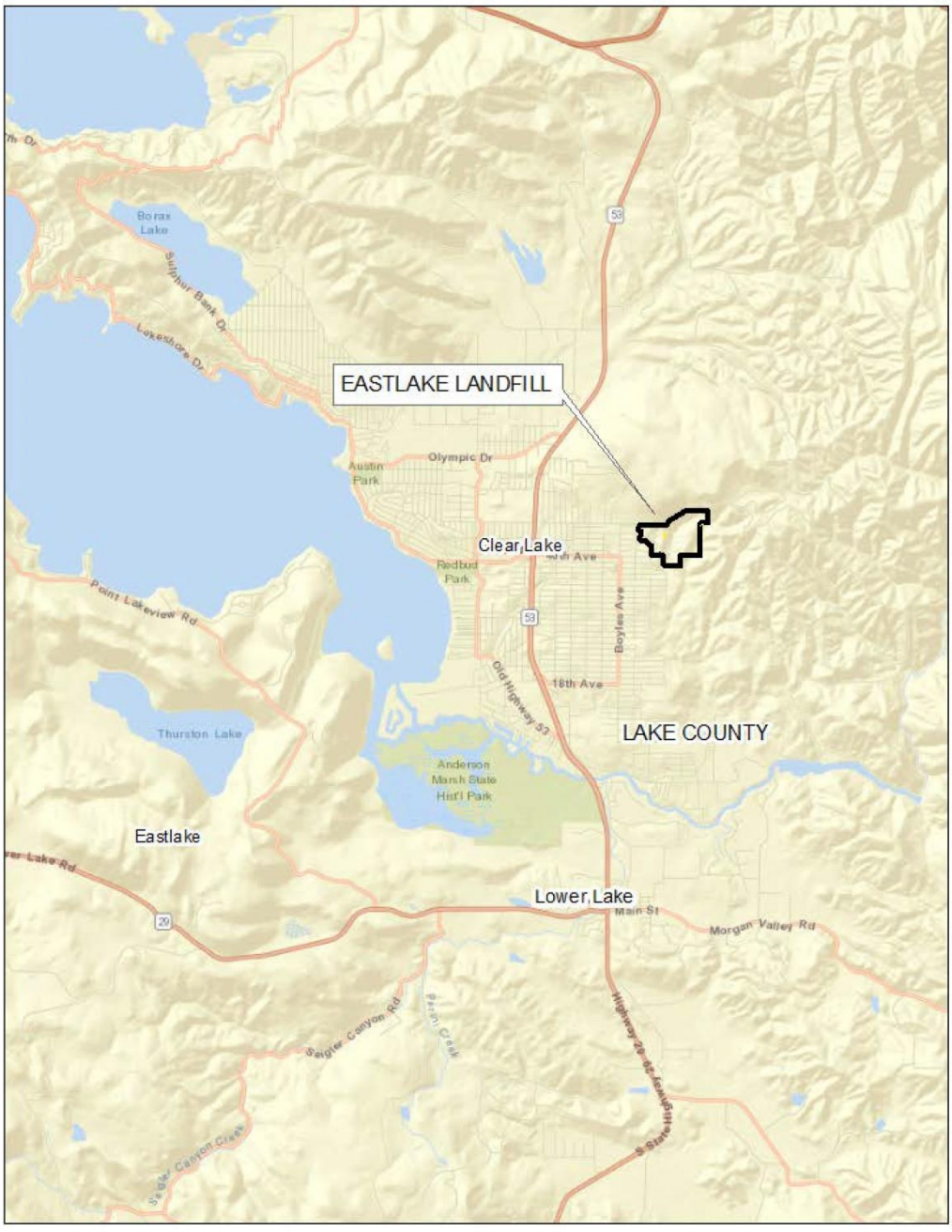
ENFORCEMENT

If, in the opinion of the Executive Officer, the Dischargers fail to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

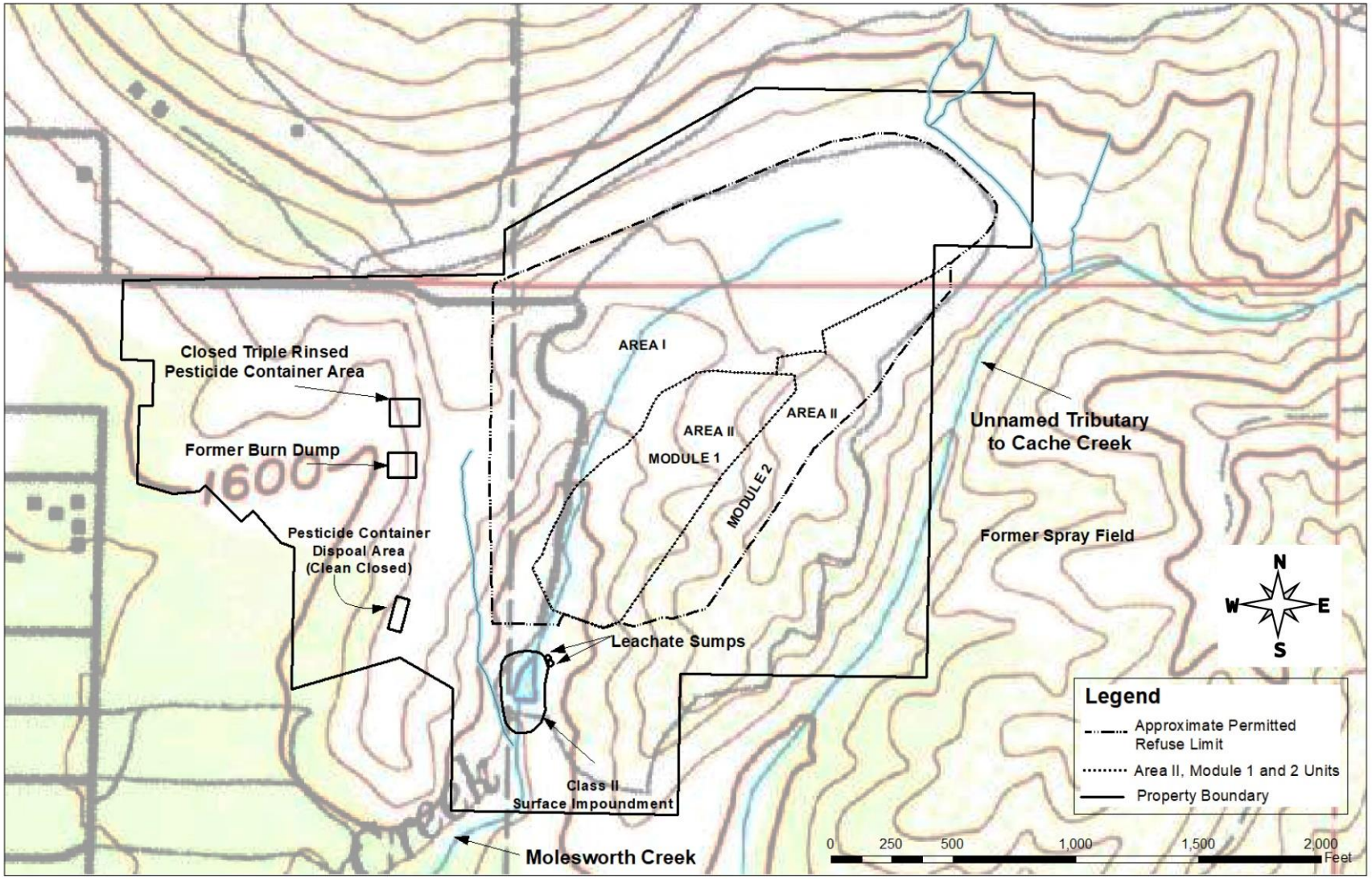
ADMINISTRATIVE REVIEW

Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. To be timely, the petition must be received by the State Water Board by 5:00 pm on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday or state holiday, the petition must be received by the State Water Board by 5:00 pm on the next business day. The law and regulations applicable to filing petitions are available on the State Water Board website (http://www.waterboards.ca.gov/public_notices/petitions/water_quality). Copies will also be provided upon request.

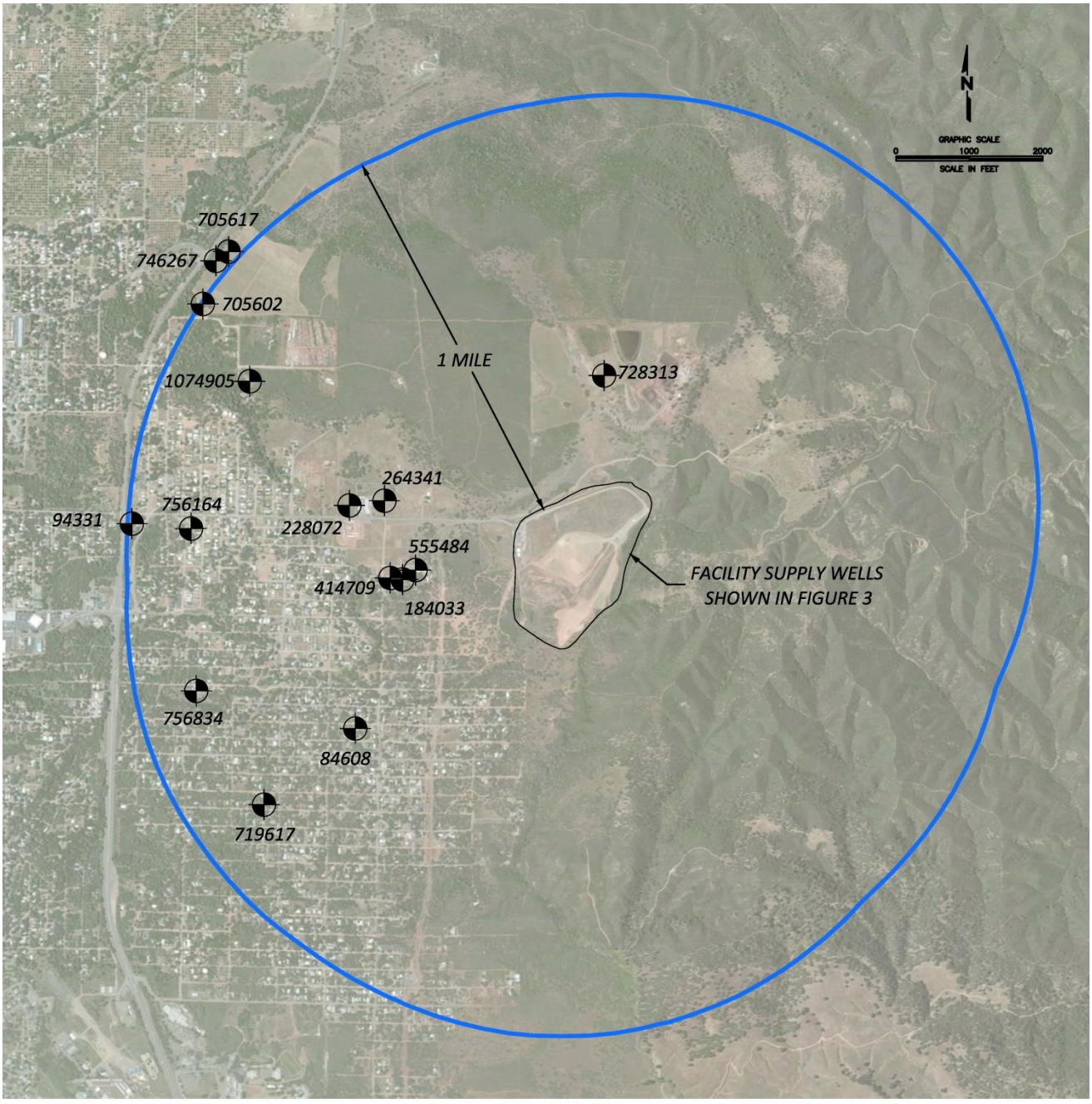
ATTACHMENT A—SITE LOCATION MAP



ATTACHMENT B—LANDFILL PREDEVELOPMENT TOPOGRAPHY



ATTACHMENT C—1-MILE VICINITY WATER SUPPLY WELL MAP

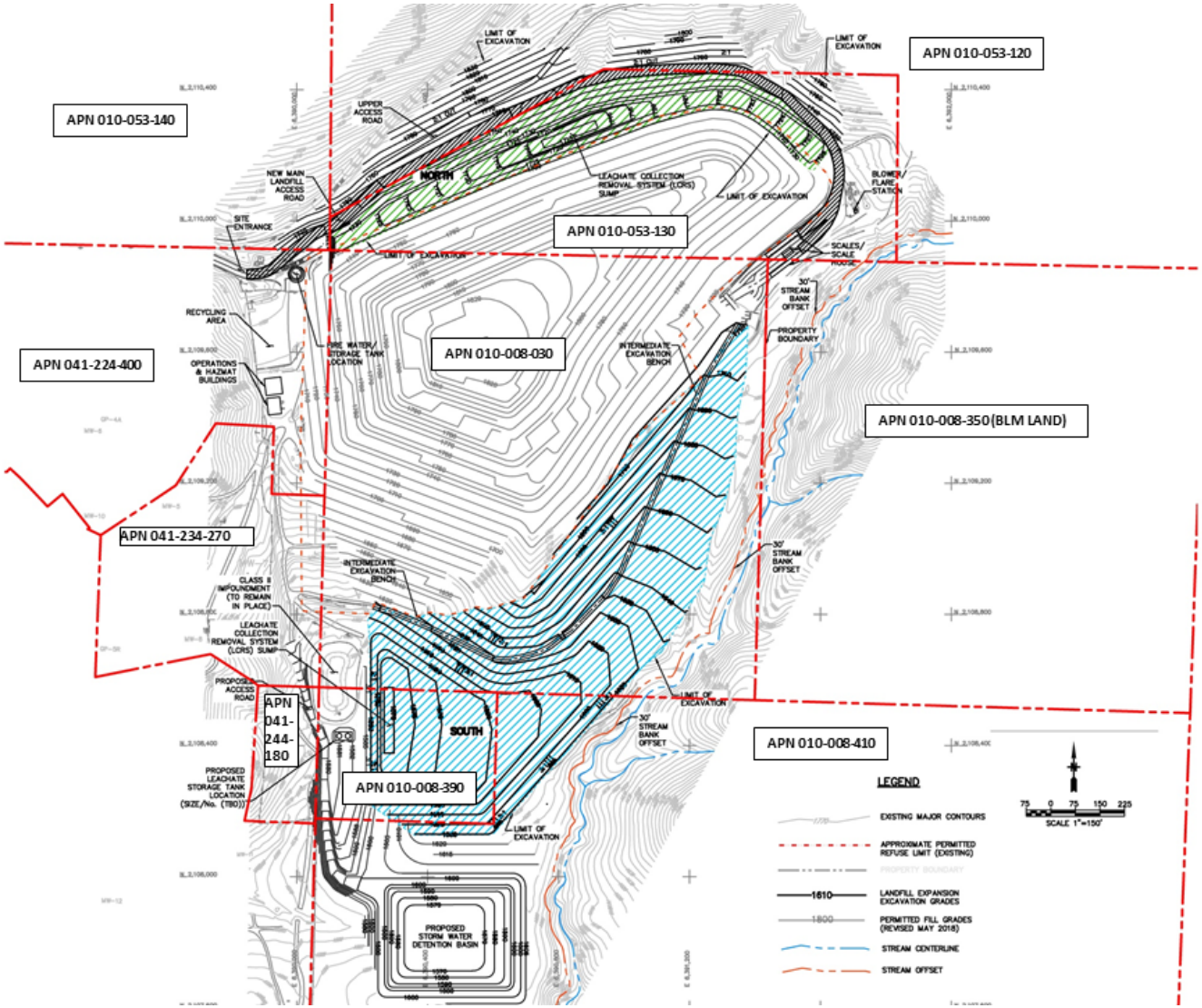


LEGEND

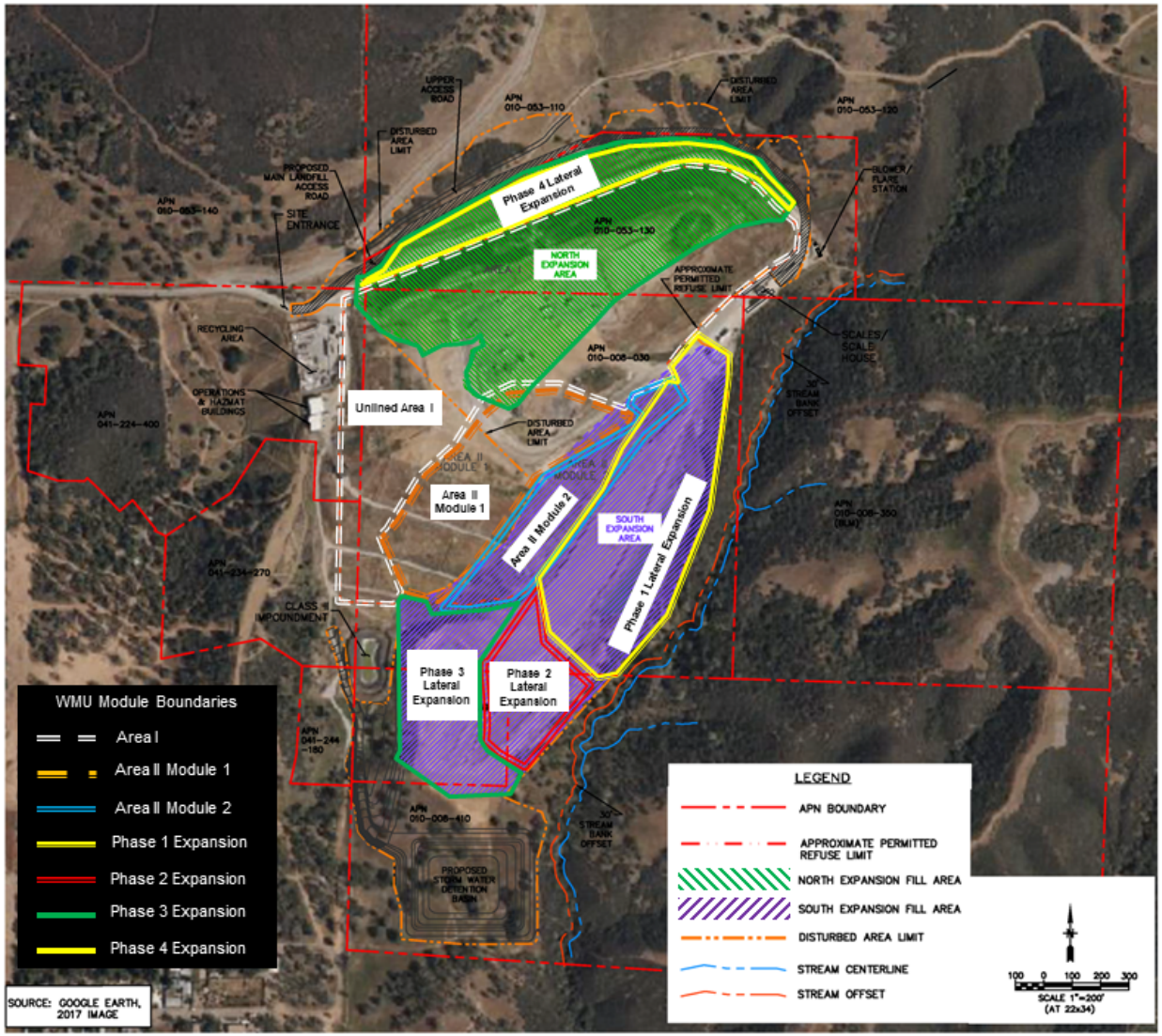
- WELL LOCATION (LEGECY LOG NO.)
- EASTLAKE LANDFILL 1 MILE DISTANCE
- EASTLAKE LANDFILL

SOURCE:
FIGURE 2–SHN UPDATED SUPPLY WELLS WITHIN 1–MILE OF FACILITY.
ESRI, DIGITALGLOBAL, GEOEYE, EARTHSTAR GEOGRAPHIC,CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND GIS USER COMMUNITY

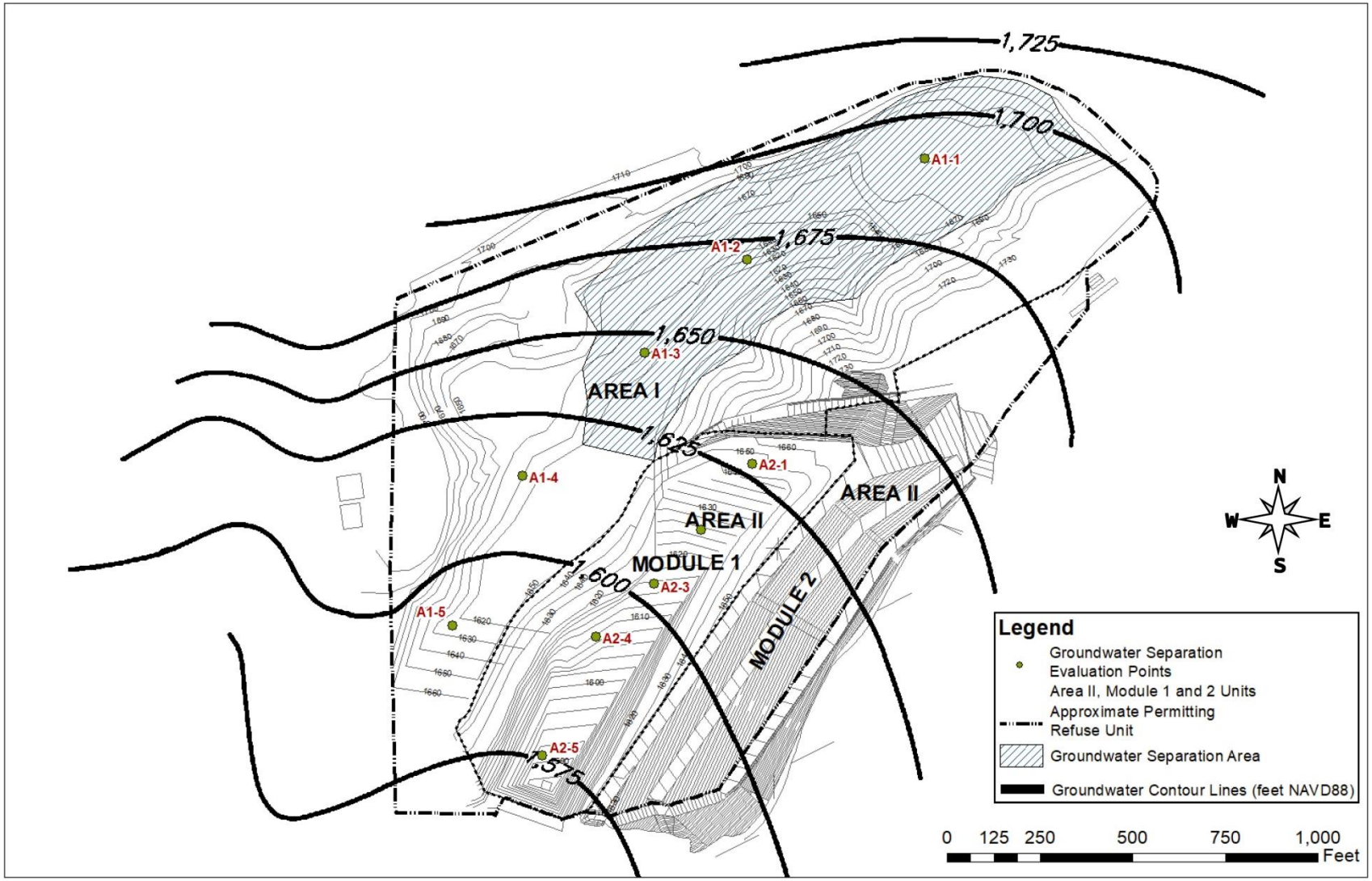
ATTACHMENT D—FACILITY FEATURES AND APN PARCEL MAP



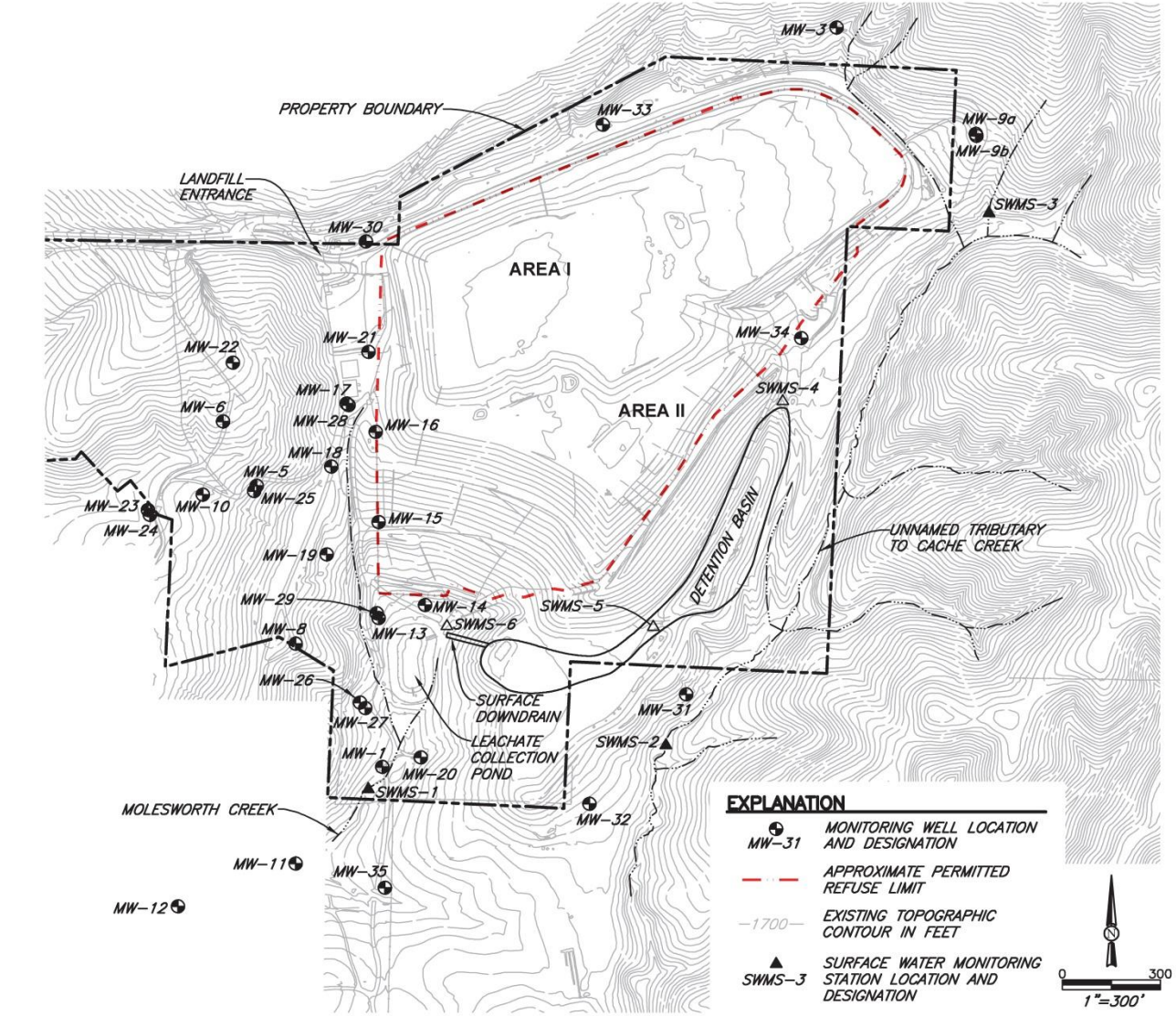
ATTACHMENT E—PROPOSED LANDFILL LATERAL AND VERTICAL EXPANSION



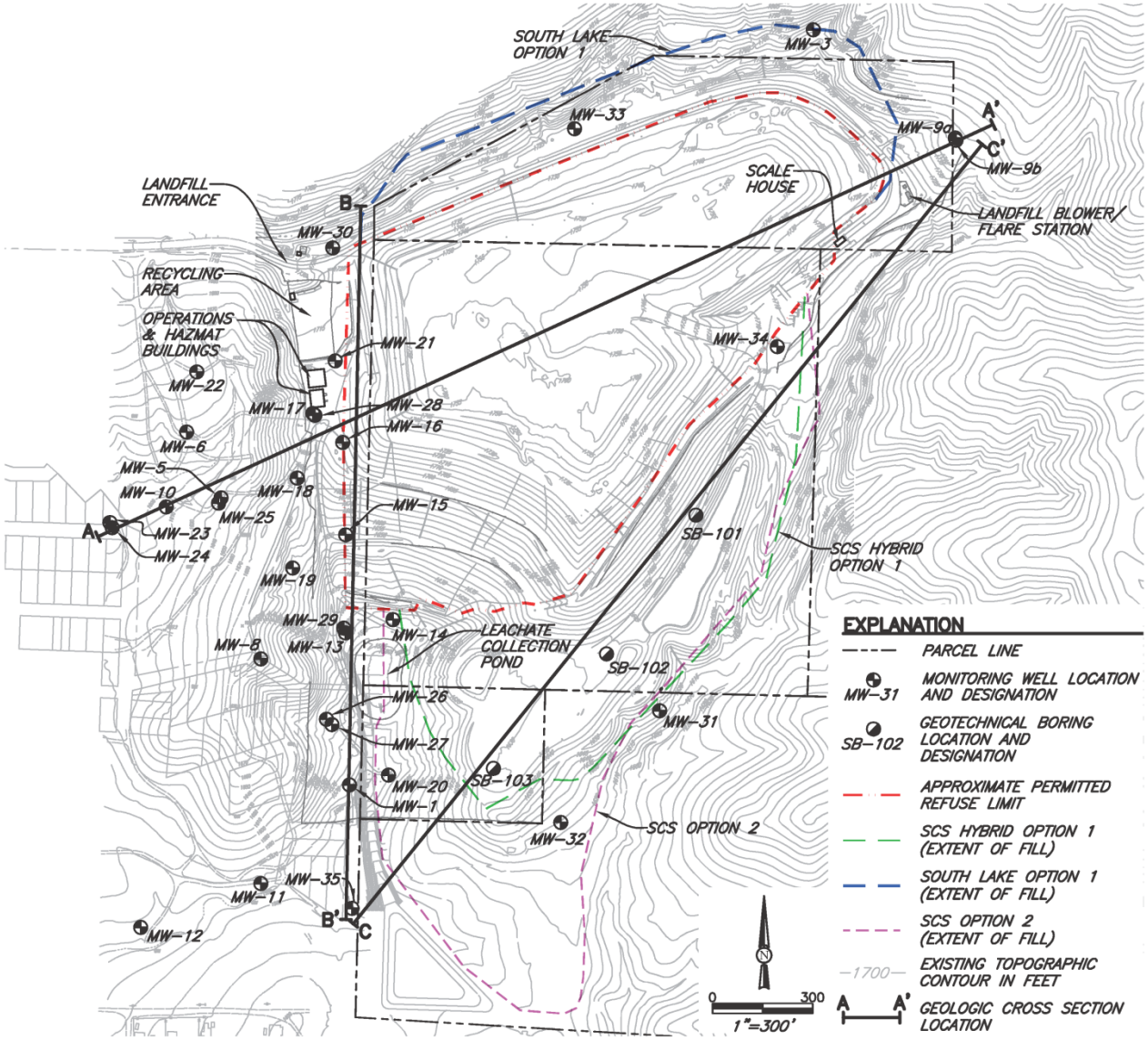
ATTACHMENT F—INADEQUATE GROUNDWATER SEPARATION AREA

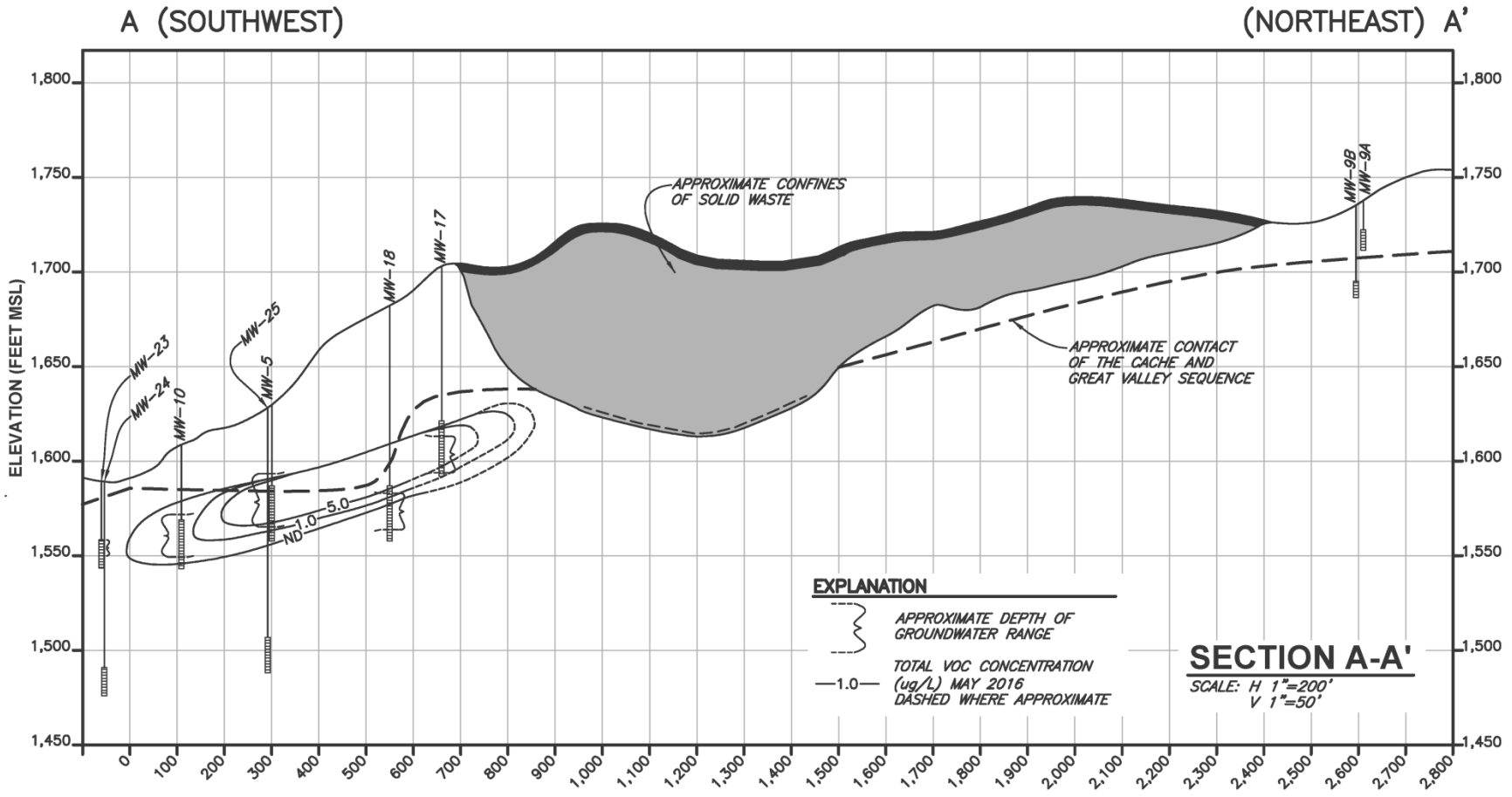


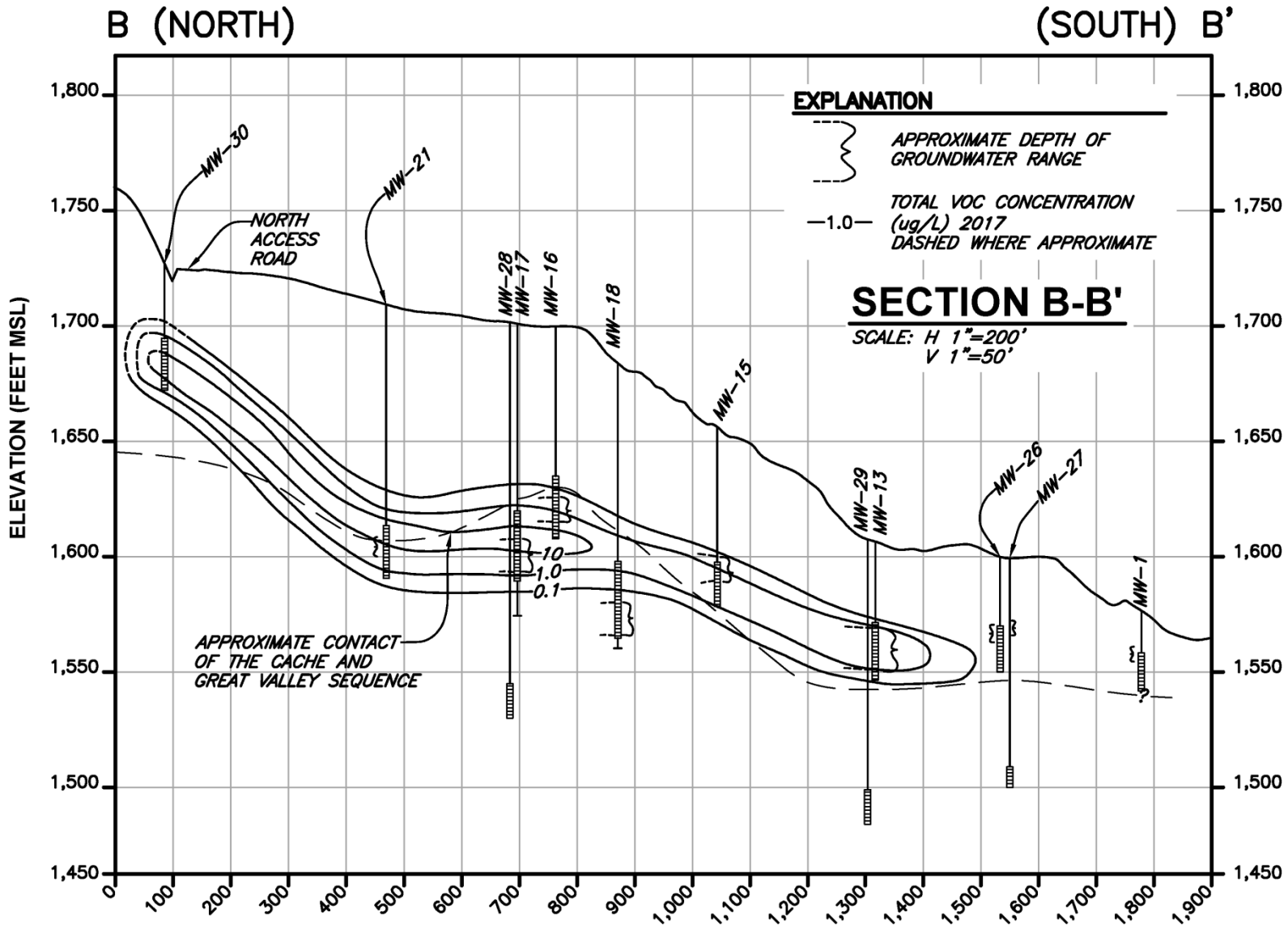
ATTACHMENT G—EXISTING GROUNDWATER AND SURFACE WATER MONITORING



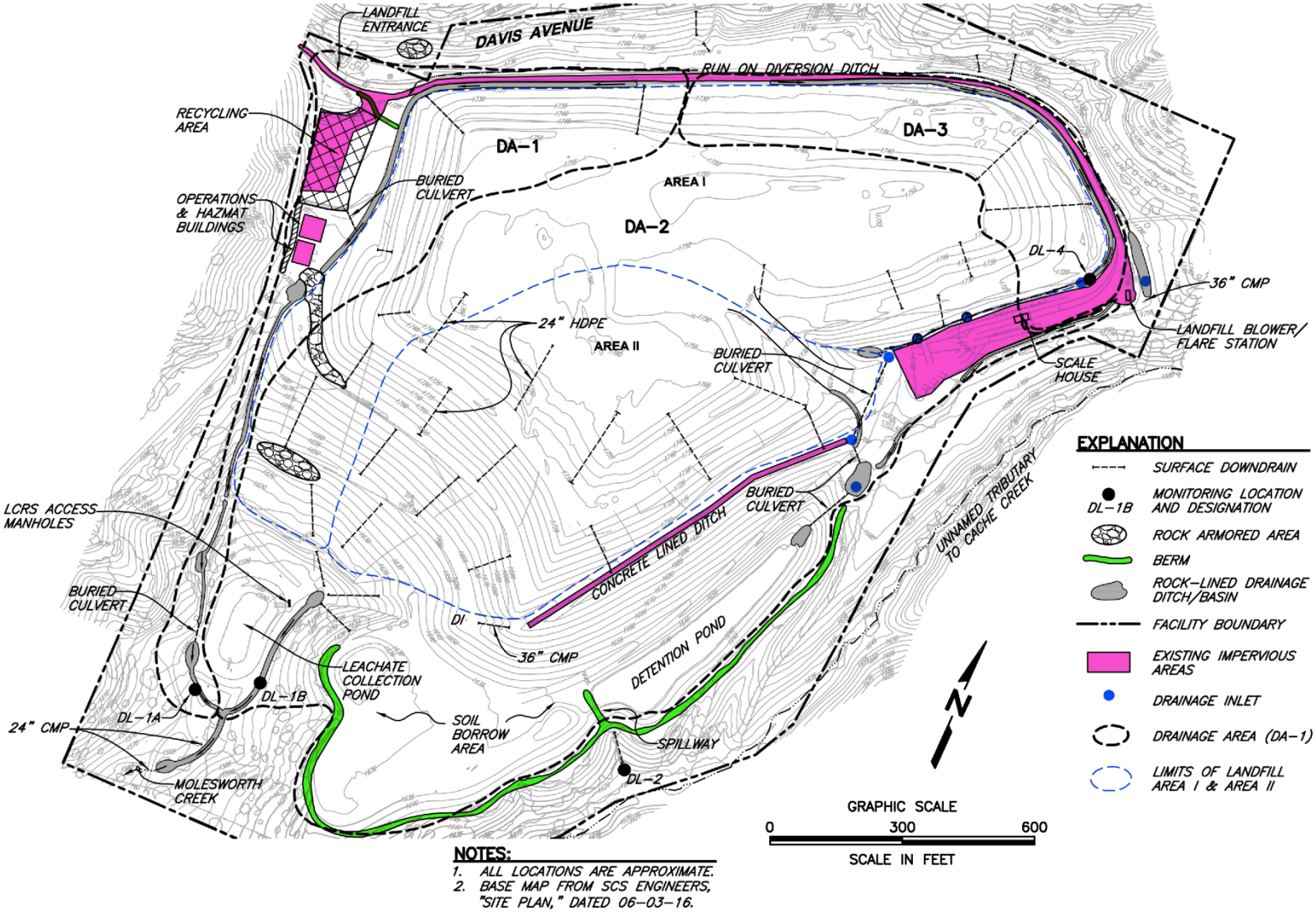
ATTACHMENT H—ISO-CONCENTRATION MAPS OF DETECTED VOCS IN GROUNDWATER



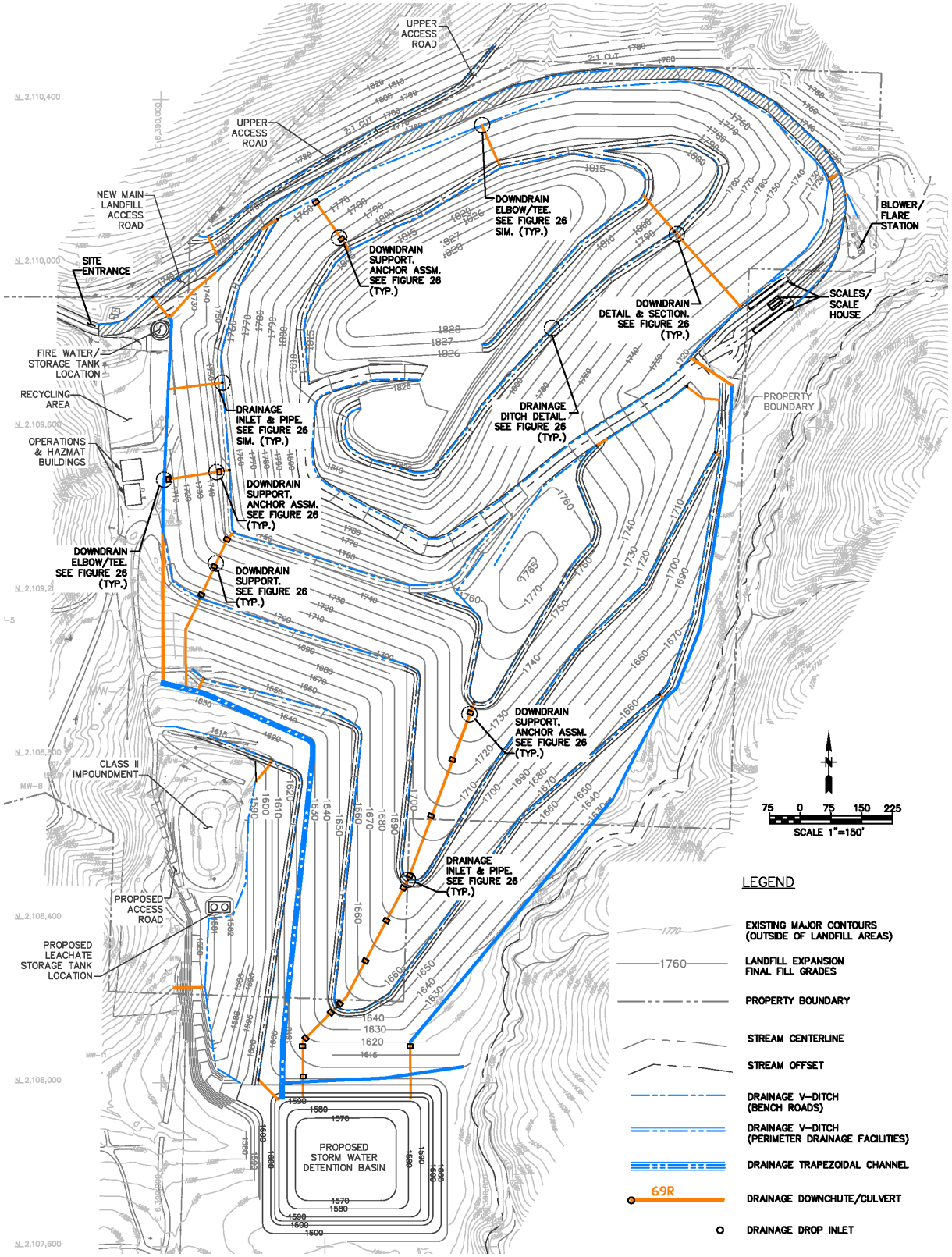

A (SOUTHWEST)
(NORTHEAST) A'
ELEVATION (FEET MSL)
1,800
1,750
1,700
1,650
1,600
1,550
1,500
1,450
0
100
200
300
400
500
600
700
800
900
1,000
1,100
1,200
1,300
1,400
1,500
1,600
1,700
1,800
1,900
2,000
2,100
2,200
2,300
2,400
2,500
2,600
2,700
2,800
MW-23
MW-24
MW-10
MW-25
MW-5
MW-18
MW-17
MW-9B
MW-9A
APPROXIMATE CONFINES OF SOLID WASTE
APPROXIMATE CONTACT OF THE CACHE AND GREAT VALLEY SEQUENCE
1.0
5.0
ND
EXPLANATION
APPROXIMATE DEPTH OF GROUNDWATER RANGE
—1.0— TOTAL VOC CONCENTRATION (ug/L) MAY 2016 DASHED WHERE APPROXIMATE
SECTION A-A'
SCALE: H 1"=200'
V 1"=50'


B (NORTH)
(SOUTH) B'
ELEVATION (FEET MSL)
1,800
1,750
1,700
1,650
1,600
1,550
1,500
1,450
0
100
200
300
400
500
600
700
800
900
1,000
1,100
1,200
1,300
1,400
1,500
1,600
1,700
1,800
1,900
EXPLANATION
APPROXIMATE DEPTH OF GROUNDWATER RANGE
—1.0— TOTAL VOC CONCENTRATION (ug/L) 2017 DASHED WHERE APPROXIMATE
SECTION B-B'
SCALE: H 1"=200'
V 1"=50'
MW-30
NORTH ACCESS ROAD
MW-21
MW-28
MW-17
MW-16
MW-18
MW-15
MW-29
MW-13
MW-26
MW-27
MW-1
10
1.0
0.1
APPROXIMATE CONTACT OF THE CACHE AND GREAT VALLEY SEQUENCE

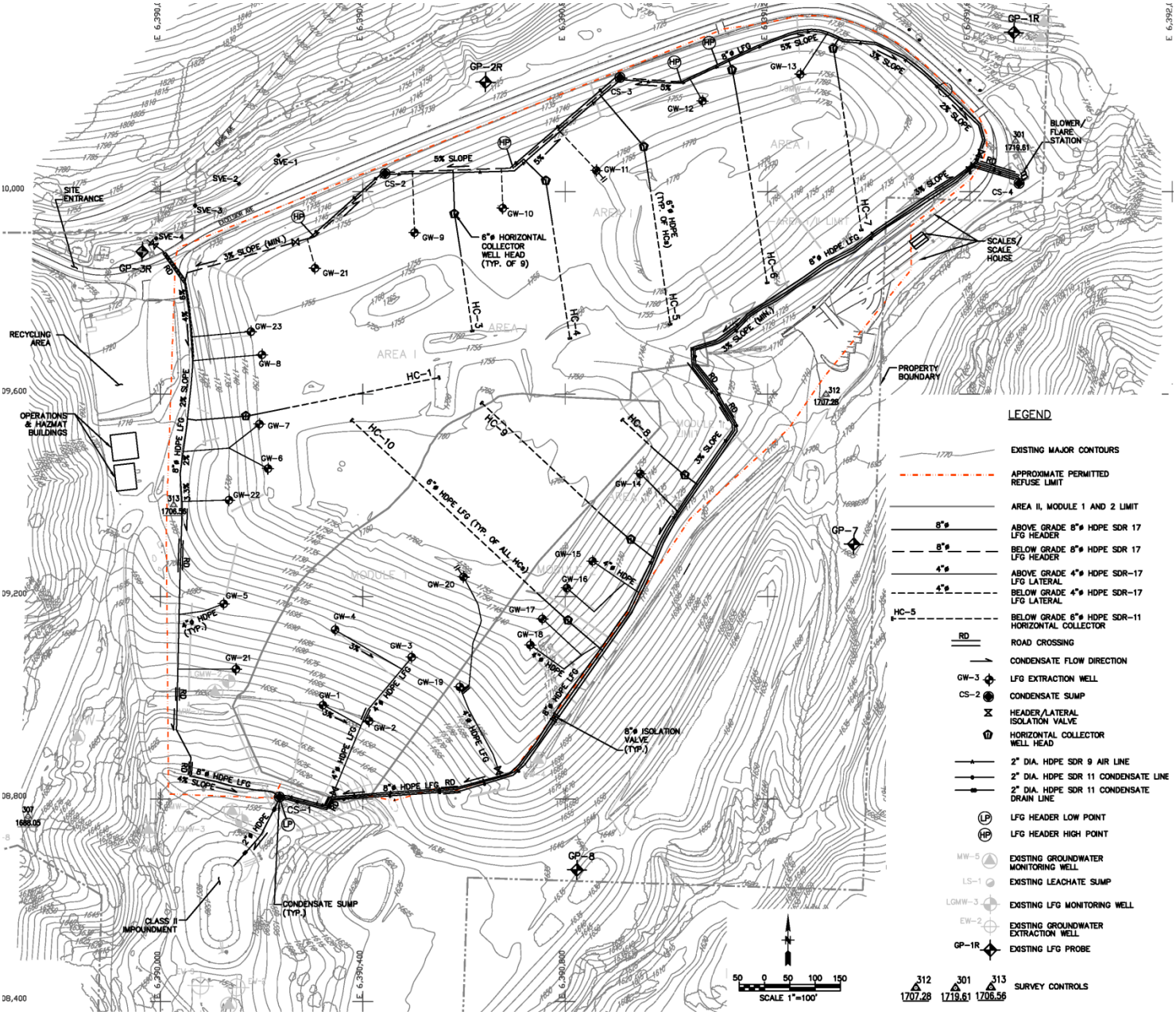
ATTACHMENT I—EXISTING SURFACE WATER DRAINAGE SYSTEM



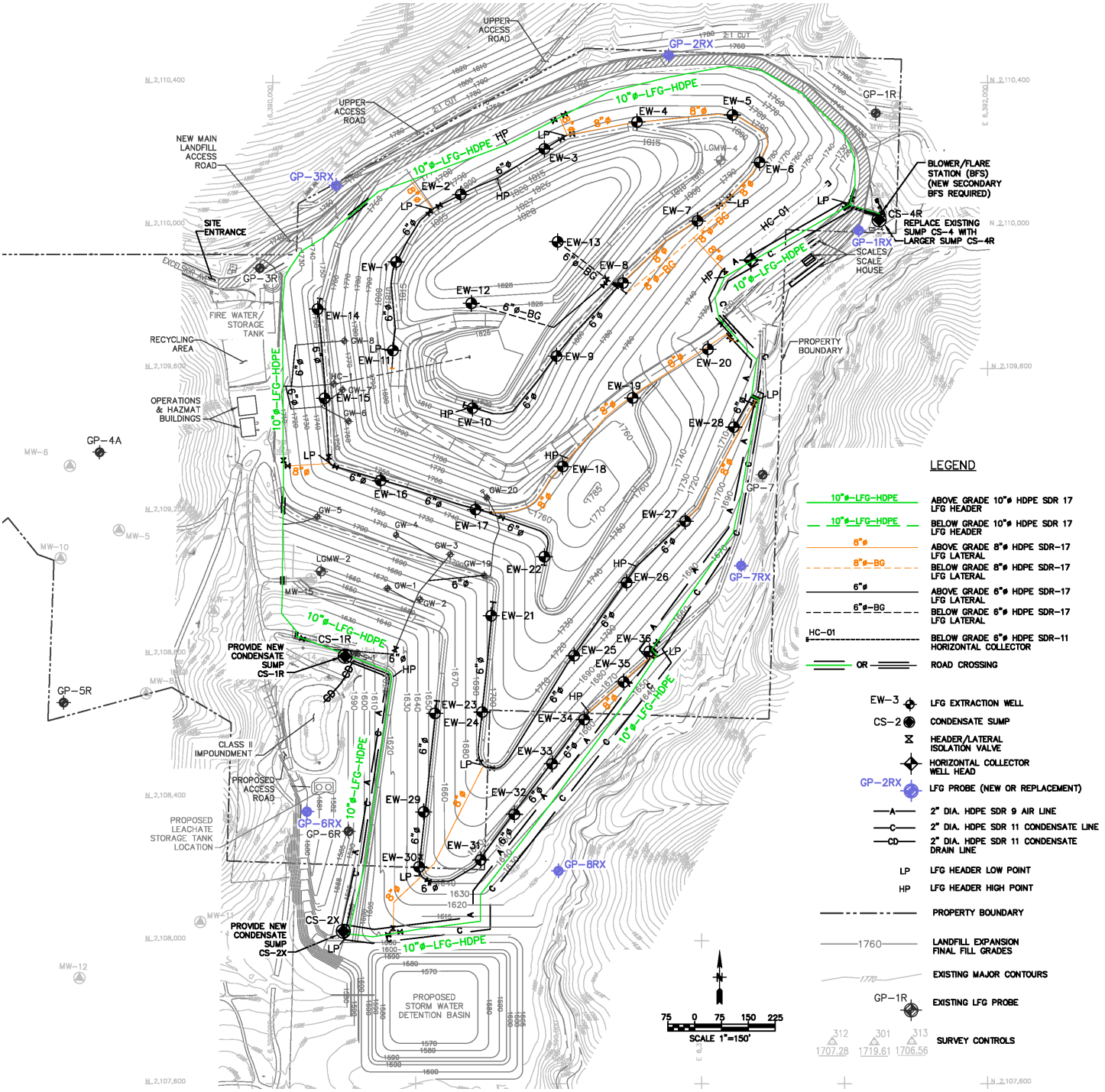
ATTACHMENT J—FINAL SURFACE WATER DRAINAGE SYSTEM



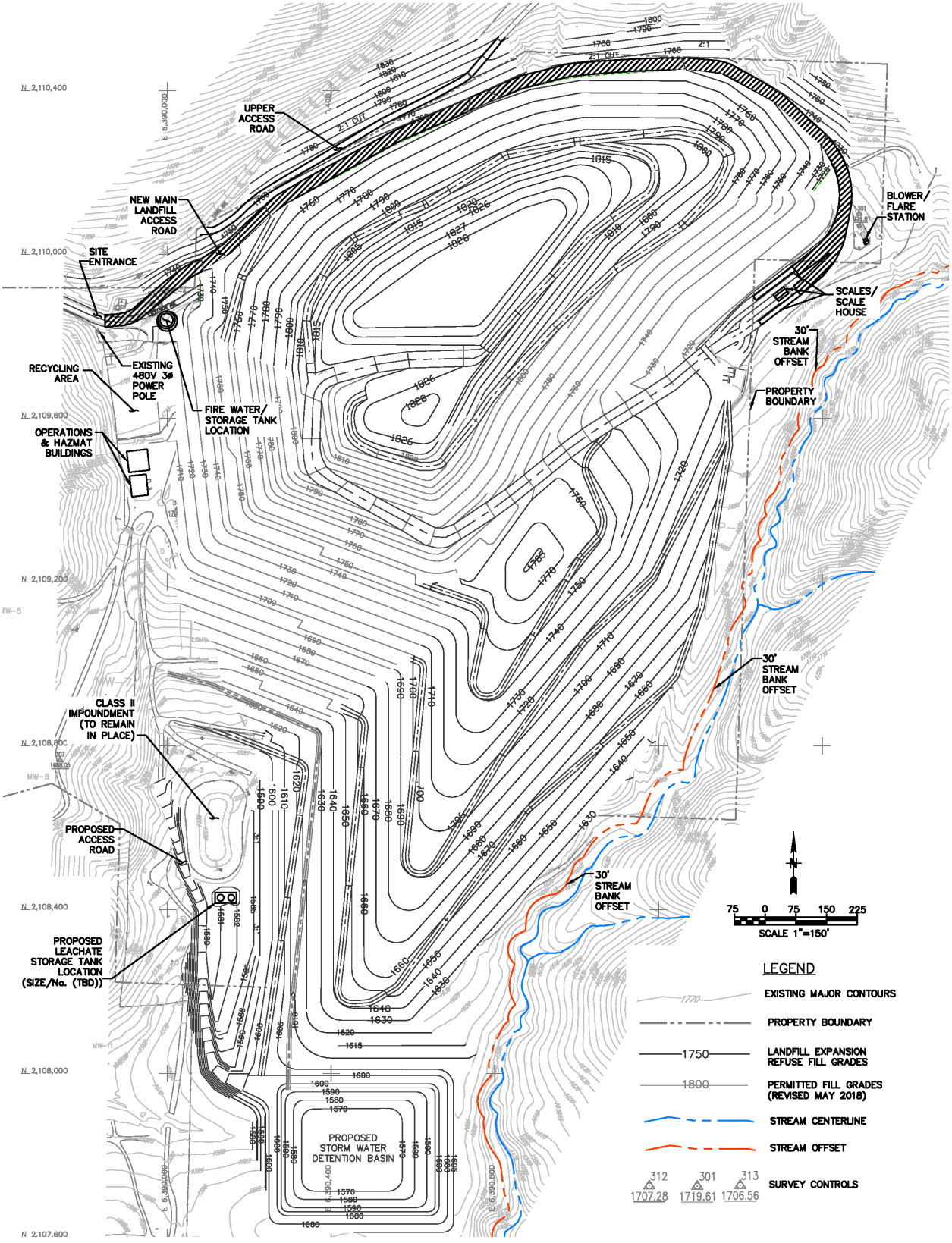
ATTACHMENT K—EXISTING LANDFILL GAS CONTROL SYSTEM



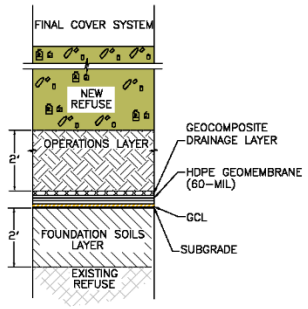
ATTACHMENT L—FINAL LANDFILL GAS CONTROL SYSTEM



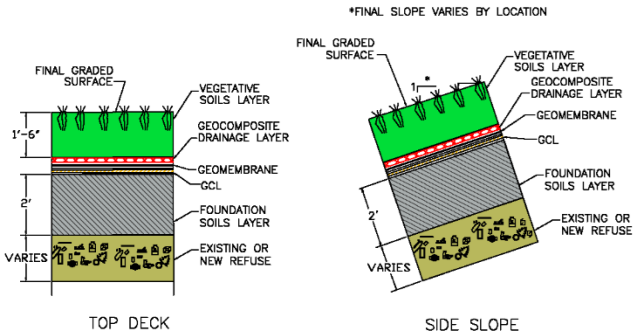
ATTACHMENT M—FINAL CLOSURE COVER



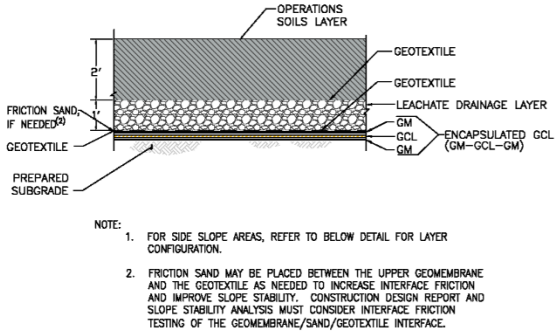
ATTACHMENT N—LINER DESIGN CROSS SECTIONS



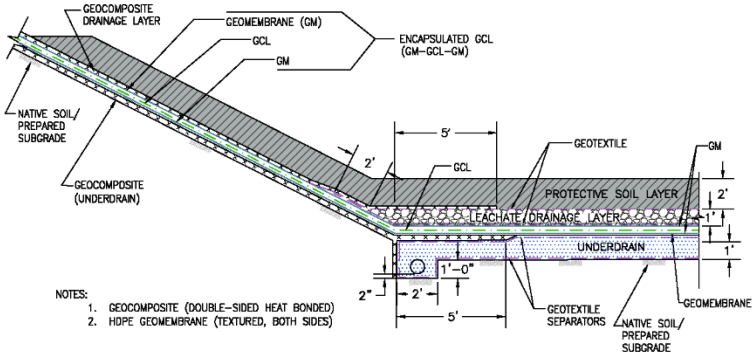
DETAIL -- PREFERENTIAL PATHWAY
SCALE: NTS



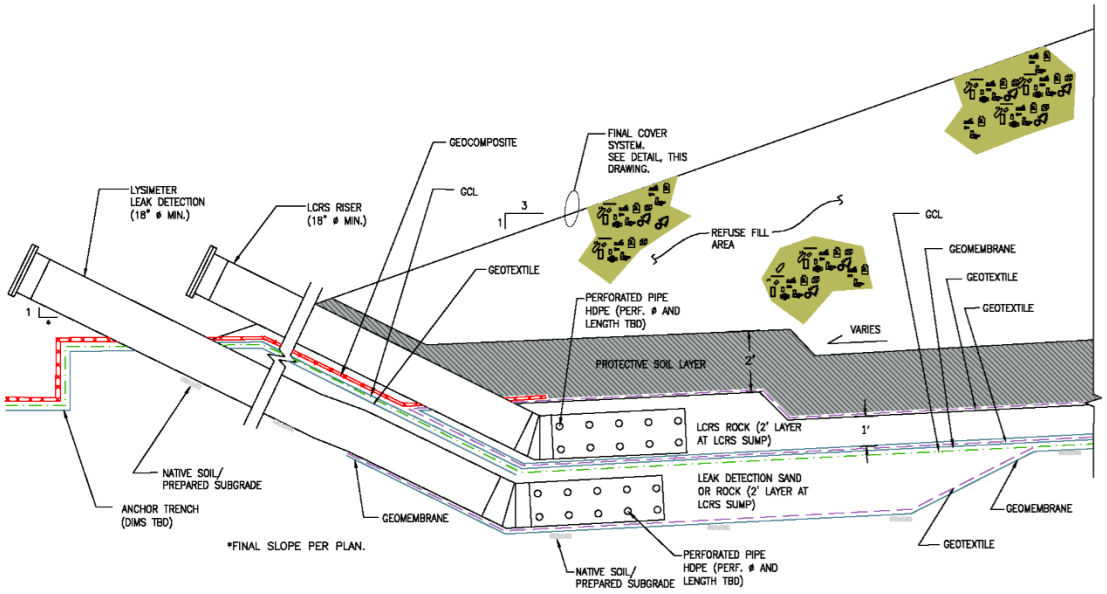
DETAIL -- FINAL COVER SYSTEM
SCALE: NTS



DETAIL -- BASELINER SYSTEM
SCALE: NTS

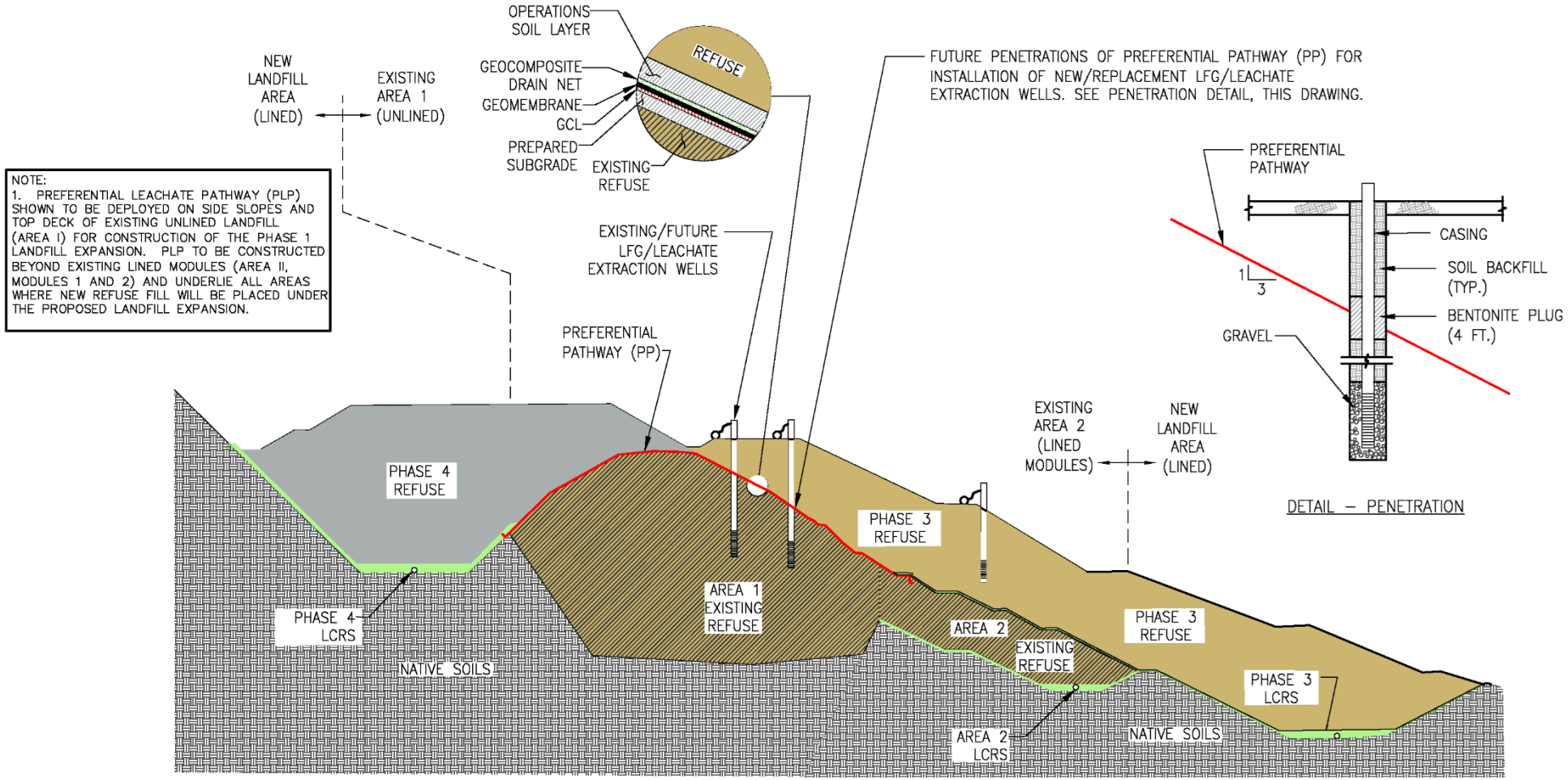


DETAIL -- SIDE SLOPE/BASE LINER
SCALE: NTS



DETAIL -- LCRS SUMP
SCALE: NTS

ATTACHMENT O—VERTICAL EXPANSION CROSS SECTIONS



LANDFILL STANDARD PROVISIONS & REPORTING REQUIREMENTS

Non-Hazardous Discharges of Waste Regulated under Subtitle D and/or Title 27, December 2015 Edition

A. Applicability

1. These Standard Provisions and Reporting Requirements (SPRRs) are applicable to nonhazardous solid waste disposal sites that are regulated by the Central Valley Regional Water Quality Control Board (hereafter, Central Valley Water Board) pursuant to the provisions of California Code of Regulations, Title 27 ("Title 27"), section 20005 et seq., and municipal solid waste (MSW) landfills that are subject to the Federal Subtitle D regulations contained in 40 Code of Federal Regulations section 258 (hereafter, "Subtitle D" or "40 C.F.R. § 258.XX") in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62. The Subtitle D regulations are only applicable to MSW landfills and therefore any requirements in these SPRRs that are referenced as coming from Subtitle D are not applicable to non-MSW waste management units such as Class II surface impoundments, Class II waste piles, and non-MSW landfill units. All Subtitle D requirements in these SPRRs are referenced with "[40 C.F.R. § 258.XX]" after the requirement.

2. "Order," as used throughout this document, means the Waste Discharge Requirements (WDRs) to which these SPRRs are incorporated.

3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.

4. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.

5. If there is any conflicting or contradictory language between the WDRs, the Monitoring and Reporting Program (MRP), or the SPRRs, then language in the WDRs shall govern over either the MRP or the SPRRs, and language in the MRP shall govern over the SPRRs.

6. If there is a site-specific need to change a requirement in these SPRRs for a particular landfill facility, the altered requirement shall be placed in the appropriate section of the WDRs and will supersede the corresponding SPRRs requirement. These SPRRs are standard and cannot be changed as part of the permit writing process or in response to comments, but they will be periodically updated on an as-needed basis.

7. Unless otherwise stated, all terms are as defined in Water Code section 13050 and in Title 27, section 20164.

B. Terms and Conditions

1. Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or Standard Provisions and Reporting Requirement, or other order or prohibition issued, reissued, or amended by the Central Valley Water Board or the State Water Board, or intentionally or negligently discharging waste, or causing or permitting waste to be deposited where it is discharged into the waters of the state and creates a condition of pollution or nuisance, is a violation of this Order and the Water Code, which can result in the imposition of civil monetary liability [Wat. Code, § 13350(a)]

2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to [Wat. Code, § 13381]:

   a. Violation of any term or condition contained in this Order;

   b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;

   c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or

   d. A material change in the character, location, or volume of discharge.

3. Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall file a new report of waste discharge (ROWD), or other appropriate joint technical document (JTD), with the Central Valley Water Board [Wat. Code, § 13260(c) and § 13264(a)]. A material change includes, but is not limited to, the following:

   a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;

   b. A significant change in disposal method, location, or volume (e.g., change from land disposal to land treatment);

   c. A change in the type of waste being accepted for disposal; or

d. A change to previously-approved liner systems or final cover systems that would eliminate components or reduce the engineering properties of components.

4. Representatives of the Central Valley Water Board may inspect the facilities to ascertain compliance with the waste discharge requirements. The inspection shall be made with the consent of the owner or possessor of the facilities or, if the consent is refused, with a duly issued warrant. However, in the event of an emergency affecting the public health or safety, an inspection may be made without consent or the issuance of a warrant [Wat. Code, §13267(c)].

5. The Central Valley Water Board will review this Order periodically and will revise these waste discharge requirements when necessary [Wat. Code, § 13263(e) and Title 27, § 21720(b)].

6. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Central Valley Water Board [Wat. Code, § 13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

7. A discharge of waste into the waters of the state is a privilege, not a right. No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge [Wat. Code, § 13263(g)].

8. Technical and monitoring reports specified in this Order are requested pursuant to the Water Code [§13267(b)]. Failure to furnish the reports by the specified deadlines or falsifying information in the reports, are misdemeanors that may be liable civilly in accordance with §13268(b) of the Water Code [Wat. Code, §13268(a)].

C. Standard Prohibitions

1. The discharge of liquid or semi-solid waste (waste containing less than 50 percent solids) is prohibited, except for the following when proposed in the ROWD/JTD and approved by this Order:

a. Dewatered sewage or water treatment sludge as described in Title 27, section 20220(c) provided it is discharged above a composite liner with a leachate collection and removal system (LCRS) [Title 27, § 20200(d)(3)].

b. Leachate and/or landfill gas condensate that is returned to the composite- lined waste management unit (with an LCRS) from which it came [Title 27, § 20340(g) and 40 C.F.R. § 258.28].

2. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the waste management unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which, in turn:

   a. require a higher level of containment than provided by the unit; or

   b. are ‘restricted wastes’; or

   c. impair the integrity of containment structures; is prohibited [Title 27, § 20200(b)].

3. The discharge of wastes outside of a waste management unit or portions of a unit specifically designed for their containment is prohibited.

4. The discharge of solid waste containing free liquid or which may contain liquid in excess of the moisture holding capacity as a result of waste management operations, compaction or settlement is prohibited.

5. The discharge of waste to a closed landfill unit is prohibited.

6. The discharge of waste constituents to the unsaturated zone or to groundwater is prohibited.

7. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

D. Standard Discharge Specifications

1. The Discharger is responsible for accurate characterization of wastes, including a determination of whether or not wastes will be compatible with containment features and other wastes at the waste management unit and whether or not the wastes are required to be managed as a hazardous waste [Title 27, § 20200(c)] or designated waste [Title 27, § 20210].

2. Leachate and landfill gas condensate collected from a waste management unit shall be discharged to the unit from which it came, or discharged to an appropriate waste management unit in accordance with Title 27 and in a

manner consistent with the waste classification of the liquid [Title 27, § 20200(d) and § 20340(g)].

3. The discharge of leachate or landfill gas condensate is restricted to those portions of a waste management unit that has a composite liner system and LCRS meeting the Federal Subtitle D requirements [40 C.F.R. § 258.28].

4. Leachate and condensate returned to a composite-lined landfill unit (when approved by this Order) shall be discharged and managed such that it does not cause instability of the waste, does not cause leachate seeps, does not generate additional landfill gas that is not extracted from the landfill by an active landfill gas extraction system, does not cause contaminants to enter surface water runoff, and does not cause leachate volumes to exceed the maximum capacity of the LCRS.

5. Any discharge of waste outside the portion of the landfill that was already covered with waste as of the landfill unit's respective Federal Deadline constitutes a "lateral expansion" and requires the installation of an approved composite liner system and LCRS [40 C.F.R. § 258.40(b)].

6. Wastes shall be discharged only into waste management units specifically designed for their containment and/or treatment, as described in this Order.

7. The discharge shall remain within the designated disposal area at all times.

8. The discharge of waste shall not cause a nuisance condition [Wat. Code, § 13050(m)].

E. Standard Facility Specifications

1. All waste management units shall be designed, constructed, and operated to ensure that wastes, including leachate, will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [Title 27, § 20240(c)], including the capillary fringe.

2. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].

3. Interim cover is daily and intermediate cover [Title 27, § 20750(a)]. Interim cover over wastes discharged to a landfill shall be designed and

constructed to minimize percolation of liquids through the wastes [Title 27, § 20705(b)].

4. Intermediate cover consisting of compacted earthen material of at least twelve (12) inches shall be placed on all surfaces of the fill where no additional solid waste will be deposited within **180 days** [Title 27, § 20700(a)].

5. During wet weather conditions, the facility shall be operated and graded to minimize leachate generation.

6. The Discharger shall immediately notify the Central Valley Water Board staff of any slope failure occurring at a waste management unit. Any failure which threatens the integrity of containment features or the waste management unit shall be promptly corrected in accordance with an approved method [Title 27, § 21710(c)(2)].

7. The Discharger shall **immediately** notify Central Valley Water Board staff of any flooding, unpermitted discharge of waste off-site or outside of waste management units, equipment failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

8. The Discharger shall limit water used for facility maintenance within landfill areas to the minimum amount necessary for dust control and construction.

9. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

10. The Discharger shall lock all groundwater monitoring wells with a lock on the well cap or monitoring well box. All monitoring devices shall be clearly labeled with their designation including all monitoring wells, LCRS risers, and lysimeter risers and shall be easily accessible for required monitoring by authorized personnel. Each monitoring device shall be clearly visible and be protected from damage by equipment or vehicles.

11. The Discharger shall ensure that methane and other landfill gases are adequately vented, removed from landfill units, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.

12. The Discharger shall maintain the depth of the fluid in the sump of each landfill unit at the minimum needed for efficient pump operation (the depth at which the pump turns on given the pump intake height and maximum pump cycle frequency).

13. The depth of fluid on the landfill liner shall not exceed **30 centimeters** (cm) [40 C.F.R. § 258.40(a)(2)]. This regulation is interpreted by the Central Valley Water Board to exclude the leachate sump. The Discharger shall **immediately** notify the Central Valley Water Board staff by telephone, and follow up in writing within **seven** days if monitoring reveals that the depth of fluid on any portion of the liner (excluding the sump) exceeds 30 cm (approximately 12 inches). The written notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.

14. Each LCRS shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions [Title 27, § 20340(d)].

15. The Discharger shall maintain a *Storm Water Pollution Prevention* Plan and *Monitoring Program and Reporting Requirements* in accordance with State Water Board Order No. 2014-0057-DWQ (Industrial General Permit) or most recent general industrial storm water permit), or retain all storm water on-site.

16. Internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.

17. New MSW landfill units or lateral expansions of existing units shall not be sited in a “wetland” [as defined in 40 C.F.R. § 232.29(r)] unless there is no practical alternative; steps have been taken to assure no net loss of wetland; the landfill unit will not degrade the wetland; the unit will not jeopardize threatened or endangered species or produce adverse modification of a critical habitat or violate any requirement of the Marine Protection, Research, and Sanctuaries Act of 1972 [40 C.F.R. § 258.12].

F. Standard Construction Specifications

1. The Discharger shall submit for review and approval at least 90 days prior to proposed construction, design plans and specifications for new landfill modules that include the following:

   a. Detailed construction drawings showing all required liner system components, the LCRS, leachate sump, unsaturated zone

monitoring system, any proposed landfill gas monitoring and extraction points, and access to the LCRS for required annual testing.

b. A Construction Quality Assurance (CQA) Plan prepared by a California-registered civil engineer or certified engineering geologist, and that meets the requirements of Title 27, section 20324.

c. A geotechnical evaluation of the area soils, evaluating their use as the base layer or reference to the location of this information in the ROWD/JTD [Title 27, § 21750(f)(4)].

d. Information about the seismic design of the proposed new module (or reference to the location of this information in the ROWD/JTD) in accordance with Title 27, section 20370.

e. A revised water quality monitoring plan for groundwater detection monitoring (or information showing the existing plan is adequate) in accordance with Title 27, section 20415.

f. An Operation Plan (or reference to the location of this information in the ROWD/JTD) meeting the requirements of Title 27, section 21760(b).

2. All containment structures shall be designed by, and construction shall be supervised by, a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge.

3. The Discharger shall not proceed with construction until the construction plans, specifications, and all applicable construction quality assurance plans have been approved. Waste management units shall receive a final inspection and approval of the construction by Central Valley Water Board staff before use of the unit commences [Title 27, § 20310(e)].

4. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a waste management unit's containment features or monitoring systems shall be approved by a California registered civil engineer or a certified engineering geologist [Title 27, § 21710(d)].

5. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [Title 27, § 20320(a)].

6. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping [Title 27, § 20365(a)].

7. The Discharger shall design storm water conveyance systems for Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].

8. All Class III landfill units shall be designed to withstand the maximum probable earthquake and Class II waste management units shall be designed to withstand maximum credible earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion, or gas [Title 27, § 20370(a)].

9. The Discharger shall perform stability analyses that include components to demonstrate the integrity of the landfill foundation, final slopes, and containment systems under both static and dynamic conditions throughout the landfill's life including the closure period and post-closure maintenance period [Title 27, § 21750(f)(5)].

10. New waste management units and expansions of existing units shall not be located on a known Holocene fault [Title 27, § 20260(d)].

11. Liners shall be designed and constructed to contain the fluid, including landfill gas, waste, and leachate [Title 27, § 20330(a)].

12. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities as long as a reasonable number of field hydraulic conductivity tests are also conducted [Title 27, § 20320(c)].

13. Hydraulic conductivities specified for containment structures other than the final cover shall be relative to the fluids (leachate) to be contained. Hydraulic conductivities for the final cover shall be relative to water [Title 27, § 20320(b)].

14. A test pad for each barrier layer and final cover shall be constructed in a manner duplicating the field construction. Test pad construction methods, with the designated equipment, shall be used to determine if the specified density/moisture-content/hydraulic conductivity relationships determined in the laboratory can be achieved in the field with the compaction equipment to be used and at the specified lift thickness [Title 27, § 20324(g)(1)(A)].

15. Performance requirements for geosynthetic membranes shall include, but are not limited to, a need to limit infiltration of water, to the greatest extent possible; a need to control landfill gas emissions; mechanical compatibility with stresses caused by equipment traffic, and for final covers the result of differential settlement over time and durability throughout the post-closure maintenance period [Title 27, § 20324(i)(1)].

16. The Discharger shall ensure proper preparation of the subgrade for any liner system that includes a GCL so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.

17. The Discharger shall propose an electronic leak location survey of the top liner for any new landfill module in the construction quality assurance plan unless the Discharger demonstrates that a leak location survey is not needed.

18. Leachate collection and removal systems are required for Class II landfills and surface impoundments, MSW landfills, and for Class III landfills which have a liner or which accept sewage or water treatment sludge [Title 27, § 20340(a)].

19. All new landfill units or lateral expansions of existing units that require a LCRS shall have a blanket-type LCRS that covers the bottom of the unit and extends as far up the sides as possible. The LCRS shall be of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the unit [Title 27, § 20340(e)].

20. The LCRS shall be designed, constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the waste management unit [Title 27, § 20340(b)].

21. Leachate collection and removal systems shall be designed and operated to function without clogging through the scheduled closure of the landfill unit and during the post-closure maintenance period.

22. The LCRS shall be designed to maintain the depth of fluid over any portion of the LCRS of no greater than 30 cm [40 C.F.R. § 258.40(a)(2)], excluding the leachate sump. The leachate sump, leachate removal pump, and pump controls shall be designed and set to maintain a fluid depth no greater than the minimum needed for efficient pump operation [Title 27, § 20340(c)].

23. All construction of liner systems and final cover systems shall be performed in accordance with a Construction Quality Assurance Plan certified by a registered civil engineer or a certified engineering geologist [Title 27, § 20323].

24. The Construction Quality Assurance program shall be supervised by a registered civil engineer or a certified engineering geologist who shall be designated the CQA officer [Title 27, § 20324(b)(2)].

25. The Discharger shall ensure that a third party independent of both the Discharger and the construction contractor performs all of the construction quality assurance monitoring and testing during the construction of a liner system.

26. The Discharger shall notify Central Valley Water Board staff at least **14 days** prior to commencing field construction activities including construction of a new lined cell or module, construction of a final cover, or any other construction that requires Central Valley Water Board staff approval under this Order.

27. The Discharger shall submit for review and approval at least **60 days** prior to proposed discharge, final documentation required in Title 27 Section 20324(d)(1)(C) following the completion of construction of a new lined landfill module. The report shall be certified by a registered civil engineer or a certified engineering geologist and include a statement that the liner system was constructed in accordance with the approved design plans and specifications, the CQA Plan, the requirements of the WDRs, and that it meets the performance goals of Title 27. The report shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, the construction quality assurance plan, and the performance goals of Title 27.

28. The Discharger shall not discharge waste onto a newly constructed liner system until the final documentation report has been reviewed and an acceptance letter has been received.

29. Prior to placement of waste in a new landfill unit, the Discharger shall monitor any pan lysimeter for the unit that has received enough rainfall to flood the LCRS sump. If liquid is detected in the pan lysimeter, the Discharger shall verify that the liquid is not from a leak in the primary liner system before waste can be accepted to the new module.

G. Standard Closure and Post-Closure Specifications

1. The Discharger shall submit a final or partial final closure and post-closure maintenance plan at least **two years** prior to the anticipated date of closure [Title 27, § 21780(d)(1)].

2. The Discharger shall notify the Central Valley Water Board in writing that a landfill unit or portion of a unit is to be closed either at the same time that the California Department of Resources Recycling and Recovery (CalRecycle) is notified or **180 days** prior to beginning any final closure activities, whichever is sooner [Title 27, § 21710(c)(5)(A)]. The notice shall include a statement that all closure activities will conform to the most recently approved final or partial final closure plan and that the plan provides for site closure in compliance with all applicable federal and state regulations [Title 27, § 21710(c)(5)(C)].

3. Initiation of closure activities shall begin within **30 days** of final waste receipt, or within one year of receipt of most recent waste if additional capacity remains [40 C.F.R. § 258.60(f)].

4. Closure activities shall be completed within **180 days** of the beginning of closure activities unless an extension is granted by the Executive Officer [40 C.F.R. § 258.60(g)].

5. The Discharger shall carry out both mandatory closure and normal closure of a waste management unit or a portion of a unit in accordance with a closure and post-closure maintenance plan approved by the Central Valley Water Board [Title 27, § 20950(a)(1)] through the issuance of closure waste discharge requirements.

6. The Discharger shall notify the Central Valley Water Board that a preliminary closure and post-closure maintenance plan has been prepared and placed in the operating record by the date of initial receipt of waste at any new MSW landfill unit or lateral expansion of any existing unit [40

C.F.R. § 258.60(d)]. This notification shall be included in the cover letter transmitting the preliminary closure and post-closure maintenance plan.

7. In addition to the applicable provisions of Title 27, the preliminary closure and/or the post-closure maintenance plans for MSW landfill units shall include the following:

   a. A description of the steps necessary to close all MSW landfill units at any point during their active life in accordance with the cover design requirements [40 C.F.R. § 258.60(c)];

   b. An estimate of the largest area of the landfill unit(s) ever requiring a final cover at any time during the active life of the unit(s) [40 C.F.R. § 258.60(c)(2)];

   c. An estimate of the maximum inventory of wastes ever on-site over the active life of the waste management facility [40 C.F.R. § 258.60(c)(3)]; and

   d. A schedule for completing all activities necessary to satisfy the closure criteria in 40 C.F.R. section 258.60 [40 C.F.R. § 258.60(c)(4)].

8. The final closure and post-closure maintenance plan for the waste management unit shall include at least the following: an itemized cost analysis, closure schedule, any proposed final treatment procedures, map, changes to the unit description presented in the most recent ROWD, federal requirements for a MSW facility, land use of the closed unit, and a construction quality assurance plan [Title 27, § 21769(c) & (d)].

9. Closure of each waste management unit shall be under the direct supervision of a registered civil engineer or certified engineering geologist [Title 27, § 20950(b)].

10. The final cover of closed landfills shall be designed, graded, and maintained to prevent ponding and soil erosion due to high run-off velocities [Title 27, § 21090(b)(1)(A)].

11. The final grading design shall be designed and approved by a registered civil engineer or certified engineering geologist [Title 27, § 21090(b)(1)(C)].

12. All final cover designs shall include a minimum 1-foot thick erosion resistant layer [Title 27, § 21090(a)(3)(A)].

13. The Discharger shall close the landfill with minimum 15-foot wide benches every 50 vertical feet [Title 27, § 21090(a)].

14. Final cover slopes shall not be steeper than a horizontal to vertical ratio of one and three quarters to one and designs having any slopes steeper than a horizontal to vertical ratio of three to one, or having a geosynthetic component, shall have these aspects of their design specifically supported in the slope stability report required in Title 27, section 21750(f)(5) [Title 27, § 21090(a)].

15. For any portions of the final cover installed after July 18, 1997, for which the Central Valley Water Board has not approved a slope and foundation stability report on or before that date, the Discharger shall meet the requirements of Title 27, section 21750(f)(5) [Title 27, § 21090(a)(6)].

16. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion [Title 27, § 21090(b)(2)].

17. The Discharger shall design storm water conveyance systems for closed Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for closed Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].

18. Closed landfill units shall be provided with at least two permanent surveying monuments, installed by a licensed land surveyor or by a registered civil engineer, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period [Title 27, § 20950(d)].

19. Following closure of any MSW landfill units, the Discharger shall notify the Executive Officer that the deed to the landfill facility property, or some other instrument that is normally examined during a title search, has been recorded and a copy placed in the operating record. The notation on the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and that use of the land is restricted to the planned use described in the post-closure maintenance plan [Title 27, § 20515(a)(4) and §21170, and 40 C.F.R. § 258.60(i)].

20. Construction or repair of the final cover system’s low-hydraulic conductivity layer is to be carried out in accordance with an approved construction quality assurance plan [Title 27, § 21090(b)(1)(E)].

21. The Discharger shall incorporate into the closure and post-closure maintenance plan a cover-integrity monitoring and maintenance program which includes at least the following: a periodic leak search, periodic identification of other problem areas, prompt cover repair, and vegetation maintenance [Title 27, § 21090(a)(4)].

22. The Discharger shall complete a final cover survey upon completion of closure activities for that portion of the landfill. The final cover surveys shall include an initial survey and map [Title 27, § 21090(e)(1). **Every five years**, the Discharger shall conduct a survey of the closed landfill cover and submit an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer [Title 27, § 21090(e)(2)].

23. Within **30 days** of completion of all closure activities, the Discharger shall certify that all closure activities were performed in accordance with the most recently approved final closure plan and CQA Plan, and in accordance with all applicable regulations. The Discharger shall also certify that closed landfill units shall be maintained in accordance with and approved post-closure maintenance plan [Title 27, § 21710(c)(6)].

24. Within **180 days** of completion of closure construction activities, the Discharger shall submit final documentation of closure, including the Certification of Closure. The closure documents shall include a final construction quality assurance report and any other documents necessary to support the certification [Title 27, § 21880].

25. The post-closure maintenance period shall continue until the Central Valley Water Board determines that wastes remaining in the landfill unit(s) no longer pose a threat to water quality [Title 27, § 20950(a)(1)].

26. The Discharger shall conduct a periodic leak search to monitor of the integrity of the final cover in accordance with the schedule in the approved final post- closure maintenance plan [Title 27, § 21090(a)(4)(A)].

27. The Discharger shall periodically inspect and identify problems with the final cover including areas that require replanting, erosion, areas lacking free drainage, areas damaged by equipment operations, and localized areas identified in the required five-year iso-settlement survey [Title 27, § 21090(a)(4)(B)].

28. The Discharger shall repair the cover promptly in accordance with a cover repair plan to be included in the final post-closure maintenance plan [Title 27, § 21090(a)(4)(C)].

29. Throughout the post-closure maintenance period, the Discharger shall maintain the structural integrity and effectiveness of all containment structures, maintain the final cover as necessary to correct the effects of settlement and other adverse factors, continue to operate the LCRS as long as leachate is generated and detected, maintain the monitoring systems, prevent erosion and related damage of the final cover due to drainage, and protect and maintain surveyed monuments [Title 27, § 21090(c)].

30. Post-closure maintenance shall be conducted for a minimum period of 30 years or until the waste no longer poses a threat to environmental quality, whichever is greater [Title 27, § 21180(a) and Title 27, § 21900(a)].

H. Standard Financial Assurance Provisions

1. The Discharger shall establish an irrevocable fund for closure and post-closure maintenance to ensure closure and post-closure maintenance of each classified unit in accordance with an approved closure and post-closure maintenance plan [Title 27, § 20950(f) and § 22207(a)].

2. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the waste management unit [Title 27, §20380(b), § 22221, and § 22222].

I. Standard Monitoring Specifications

1. The water quality monitoring program shall include appropriate and consistent sampling and analytical procedures and methods designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points [Title 27, § 20415(e)(4) and 40 C.F.R. § 258.53(b)].

2. All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer [Title 27, § 20415(e)(1)].

3. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport [Title 27, § 20415(b)(4)(A)].

4. All sample chemical analyses of any material shall be performed by a laboratory certified by the California Department of Health Services [Wat. Code, § 13176(a)].

5. A Detection Monitoring Program for a new landfill facility shall be installed, operational, and one year of monitoring data collected from background monitoring points prior to the discharge of wastes [Title 27, § 20415(e)(6)].

6. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point).

7. The Discharger shall submit for approval, establish, and maintain an approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:

   a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;

   b. Sample preservation information and shipment procedures;

   c. Sample analytical methods and procedures;

   d. Sample quality assurance/quality control (QA/QC) procedures;

   e. Chain of Custody control; and

   f. Sample analysis information including sample preparation techniques to avoid matrix interferences, method detection limits (MDLs), practical quantitation limits (PQLs) and reporting limits (RLs), and procedures for reporting trace results between the MDL and PQL.

   If required by the Executive Officer, the Discharger shall modify the Sample Collection and Analysis Plan to conform with this Order.

8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for

Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan. Appropriate sample preparation techniques shall be used to minimize matrix interferences.

9. If methods other than USEPA-approved methods or Standard Methods are used, or there is a proposed alternant USEPA method than the one listed in the MRP, the proposed methodology shall be submitted for review and approval prior to use, including information showing its equivalence to the required method.

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

11. The laboratory reporting limit (RL) for all reported monitoring data shall be set no greater than the practical quantitation limit (PQL).

12. **“Trace” results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.

13. Laboratory data shall not be altered or revised by the Discharger. If the Discharger observes potential lab errors, it shall identify the issue in the monitoring report and shall describe steps that will be taken to prevent similar errors in the future.

14. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs. MDLs and PQLs shall be reported.

15. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the

results shall be flagged in the laboratory report accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result**. The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

16. All **QA/QC** data shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and signature of a responsible person from the laboratory. **Sample results shall be reported unadjusted for blank results or spike recoveries**. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged, but the analytical results shall not be adjusted.

17. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.

18. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples [Title 27, § 20415(b)(4)(B)]. Groundwater samples shall not be field-filtered prior to laboratory analysis [40 C.F.R. § 258.53(b)]. Groundwater samples needing filtering (e.g., samples to be analyzed for dissolved metals) shall be filtered by the laboratory prior to analysis.

19. Groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same waste management area shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which

could preclude accurate determination of groundwater flow rate and direction [40 C.F.R. § 258.53(d)].

20. Monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program [40 C.F.R. § 258.51(c)(2)]. Monitoring devices that cannot be operated and maintained to perform to design specifications shall be replaced after review and approval of a report (i.e., work plan) for the proposed replacement devices.

21. All borings are to be logged during drilling under the direct supervision of a registered geologist or registered civil engineer with expertise in stratigraphic well logging [Title 27, § 20415(e)(2)].

22. Soils are to be described according to the Unified Soil Classification System [Title 27, § 20415(e)(2)(A)]. Rock is to be described in a manner appropriate for the purpose of the investigation [Title 27, § 20415(e)(2)(B)].

23. The Discharger shall submit a work plan for review and approval at least **60 days** prior to installation or abandonment of groundwater monitoring wells.

24. The Discharger shall provide Central Valley Water Board staff a minimum of **one-week** notification prior to commencing any field activities related to the installation or abandonment of monitoring devices.

25. The water quality protection standard shall consist of the constituents of concern (COC), concentration limits, and the point of compliance. The water quality protection standard shall apply during the active life of the waste management unit, closure period, post-closure maintenance period, and any compliance period under Title 27, section 20410 [Title 27, § 20390].

26. The point of compliance at which the water quality protection standard applies is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit [Title 27, § 20405).

27. The compliance period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program and is the number of years equal to the active life of the waste management unit plus the closure period [Title 27, § 20410(a)].

28. The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the waste management unit [Title 27, § 20415(b)(1)(A)].

29. The Detection Monitoring Program shall include a sufficient number of monitoring points, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance to allow the detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)1.].

30. Additional monitoring points shall be added as necessary to provide the best assurance of the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)2.].

31. The Detection Monitoring Program shall also include a sufficient number of monitoring points installed at appropriate depths and locations to yield groundwater samples from other aquifers or perched zones not already monitored to provide the earliest possible detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)3. and 4., and §20420(b)].

32. A surface water monitoring system shall be established to monitor each surface water body that could be affected by a release from the waste management unit [Title 27, § 20415(c)].

33. An unsaturated zone monitoring system shall be established for each waste management unit [Title 27, § 20415(d)].

34. The Discharger shall notify Central Valley Water Board staff within **seven days** if fluid is detected in a previously dry LCRS, unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in a LCRS [Title 27, § 21710(c)(3)].

35. Driller’s logs for all monitoring wells shall to be submitted to the Central Valley Water Board and the Department of Water Resources [Wat. Code, § 13751 and Title 27, § 20415(b)(3)].

36. Groundwater elevation, temperature, electrical conductivity, turbidity, and pH are to be accurately measured at each well each time groundwater is sampled [Title 27, § 21415(e)(13)].

37. The groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation being monitored shall be determined at least quarterly [Title 27, § 20415(e)(15)].

38. The Discharger shall graph all analytical data from each monitoring point and background monitoring point and shall submit the graphs to the Central Valley Water Board annually [Title 27, § 20415(e)(14)].

39. For each waste management unit, the Discharger shall collect all data necessary for selecting appropriate data analysis methods for establishing background values for each constituent of concern and for each monitoring parameter [Title 27, § 20420(c)]. The Discharger shall propose a data analysis method that includes a detailed description of the criteria to be used for determining "measurably significant" (as defined in Title 27, section 20164) evidence of a release from the waste management unit and determining compliance with the water quality protection standard [Title 27, § 20415(e)(6) and (7)].

40. For statistical analysis of data, the Discharger shall use one of the methods described in Title 27, section 20415(e)(8)(A)-(E). A non-statistical data analysis method can be used if the method can achieve the goal of the particular monitoring program at least as well as the most appropriate statistical method [Title 27, § 20415(e)(8)]. The Discharger shall use a statistical or nonstatistical data analysis method that complies with Title 27, section 20415(e)(7, 8, 9, and 10), to compare the concentration of each constituent of concern or monitoring parameter with its respective background concentration to determine whether there has been a measurably significant evidence of a release from the waste management unit. For any given monitoring point at which a given constituent has already exhibited a measurably significant indication of a release at that monitoring point, the Discharger may propose to monitor the constituent, at that well, using a concentration-versus-time plot.

41. The Discharger may propose an alternate statistical method [to the methods listed under Title 27, section 20415(e)(8)(A-D)] in accordance with Title 27, section 20415(e)(8)(E), for review and approval.

42. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27, section 20415(e)(7) that is used in the statistical method shall be the **lowest concentration (or value) that can be**

reliably achieved within limits of precision and accuracy specified in the WDRs or an approved Sample Collection and Analysis Plan for routine laboratory operating conditions that are available to the facility. The Discharger's technical report (Sample Collection and Analysis Plan and/or Water Quality Protection Standard Report), pursuant to Title 27, section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or non-statistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

43. The water quality protection standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (e.g., USEPA methods 8260 and 8270).

44. Alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) if part of an approved water quality protection standard. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.

45. **Confirmation of Measurably Significant Evidence of a Release.** Whenever a constituent is detected at a detection monitoring point at a concentration that exceeds the concentration limit from the water quality protection standard, the Discharger shall conduct verification sampling to confirm if the exceedance is due to a release or if it is a false-positive (unless previous monitoring has already confirmed a release for that constituent at that monitoring point). An exceedance of the concentration limit from the water quality protection standard is considered measurably significant evidence of a release that must be either confirmed or denied. There are two separate verification testing procedures:

    a. Standard Monitoring Specification I.46 provides the procedure for analytes that are detected in less than 10% of the background

samples such as non- naturally occurring constituents like volatile organic compounds; and

b. Standard Monitoring Specification I.47 provides the procedure for analytes that are detected in 10% or greater of the background samples such as naturally occurring constituents like chloride.

46. **Verification Procedure for Analytes Detected in Less than 10% of Background Samples.** The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:

a. **Initial Determination of Measurably Significant Evidence of a Release.** Identify each analyte in the current detection monitoring point sample that exceeds either its respective MDL or PQL, and for which a release has not been previously confirmed. The Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if ***either***:

i. The data contains two or more analytes that equal or exceed their respective MDLs; or

ii. The data contains one or more analyte that equals or exceeds its PQL.

b. **Discrete Retest** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)]:

i. In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.46.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated and analyze them for the constituents that caused the need for the retest.

ii. **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall conclude that measurably significant evidence of a release is confirmed if (not including the original sample) two or more analytes equal or exceed

their respective MDLs or if one or more analyte equals or exceeds its PQL. The Discharger shall then:

(A) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail within seven days of the verbal notification; and

(B) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.

(C) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

47. **Verification Procedure for Analytes Detected in 10% or Greater of the Background Samples.** The Discharger shall use either a statistical or non-statistical method pursuant to Title 27, section 20415(e)(8)(E) for all analytes that are detected in 10% or greater of the background samples. The Discharger shall use one of the statistical methods required in Title 27, section 20415(e)(8)(E) unless another method has been proposed by the Discharger in a Water Quality Protection Standard Report (or equivalent report) and approved by the Central Valley Water Board in a Monitoring and Reporting Program pursuant to Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E). The method shall be implemented as follows:

a. **Initial Determination of Measurably Significant Evidence of a Release.** The Discharger shall compare the value reported by the laboratory for each analyte to the statistically-derived concentration limit from the most recent report (Annual Monitoring Report or Water Quality Protection Standard Report) that uses the approved statistical procedure. If the value exceeds the concentration limit for that constituent, the Discharger shall conclude that there in measurably significant evidence of a release [Title 27, § 20420(i)].

b. **Retest Method** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)].

i. In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.47.a., above) that there is a preliminary indication of a release, then the

Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days [Title 27, § 20415(e)(3)] of such indication, the Discharger shall implement a verification procedure/retest option, in accordance with Title 27, sections 20415(e)(8)(E) and 20420(j)(2). The verification procedure shall include either a single "composite" retest (i.e., a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release) or shall consist of at least two "discrete" retests (i.e., statistical analyses each of which analyzes only newly-acquired data from the monitoring point that indicated a release) [Title 27, § 20415(e)(8)(E)]. The Discharger may use an alternate method previously approved by the Central Valley Water Board and included in the Monitoring and Reporting Program. The verification procedure shall comply with the requirements of Title 27, section 20415(e)(8)(E) in addition to the performance standards of Title 27, section 20415(e)(9). The retest samples shall be collected from the monitoring point where the release is preliminarily indicated and shall be analyzed for the constituents that caused the need for the retest. For any indicated monitoring parameter or constituent of concern, if the retest results of one or more of the retest data suites confirm the original indication, the Discharger shall conclude that measurably significant evidence of a release has been confirmed.

ii. **Confirmation of a Release.** As soon as the retest data are available, the Discharger shall evaluate the results pursuant to paragraph I.47.b.1, above and shall:

(A) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail within seven days of the verbal notification; and

(B) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.

(C) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

48. **Physical Evidence of a Release.** If the Discharger determines that there is a significant physical evidence of a release, the Discharger shall immediately verbally notify Central Valley Water Board staff and provide written notification by certified mail within 7 days of such determination, and within 90 days shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program [Title 27, § 20385(a)(3) and § 20420(l)(1) & (2)].

J. Response to Release

1. Measurably Significant Evidence of a Release Has Been Confirmed. If the Discharger has confirmed that there is measurably significant evidence of a release from a waste management unit pursuant to Standard Monitoring Specification I.46 or I.47, then the Discharger shall:

   a. **Immediately** sample all monitoring points in the affected medium at that waste management unit and determine the concentration of all monitoring parameters and constituents of concern for comparison with established concentration limits. Because this constituent of concern scan does not involve statistical testing, the Discharger will need to collect and analyze only a single water sample from each monitoring point in the affected medium [Title 27, § 20420(k)(1)].

   b. **Within 14 days** of confirming measurably significant evidence of a release, the Discharger shall (for releases from MSW landfill units) notify all persons who own the land or reside on the land that directly overlies any portion of the plume of contamination if contaminants have migrated off-site if indicated by sampling of detection monitoring wells [40 C.F.R. § 258.55(g)(1)(iii)].

   c. **Within 90 days** of confirming measurably significant evidence of a release, the Discharger shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program meeting the requirements of Title 27, sections 20420(k)(5)(A-D), including but not limited to the results of sampling pursuant to paragraph J.1.a, above. The Evaluation Monitoring Program shall be designed for the collection and analysis of all data necessary to assess the nature and extent of the release and to determine the spatial distribution and concentration of each constituent throughout the

zone affected by the release [Title 27, § 20420(k)(5) and § 20425(b)]. For releases from MSW landfill units, the Evaluation Monitoring Program shall also include any additional proposals necessary to comply with 40 C.F.R. § 258.55, particularly the additional monitoring well required by 40 C.F.R. § 258.55(g)(1)(ii).

d. **Within 180 days** of confirming measurably significant evidence of a release, the Discharger shall submit to the Central Valley Water Board an initial engineering feasibility study for a Corrective Action Program necessary to meet the requirements of Title 27, section 20430. At a minimum, the initial engineering feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern [Title 27, § 20420(k)(6)].

e. If the Discharger confirms that there is measurably significant evidence of a release from the waste management unit at any monitoring point, the Discharger may attempt to demonstrate that a source other than the waste management unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in groundwater, surface water, or the unsaturated zone. The Discharger may make a demonstration pursuant to Title 27, section 20420(k)(7) in addition to or in lieu of submitting both an amended report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements and due dates of Title 27, sections 20420(k)(6) & (7) unless Central Valley Water Board staff agree that the demonstration successfully shows that a source other than the waste management unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis, or statistical evaluation or from natural variation in groundwater, surface water, or the unsaturated zone. In order to make this demonstration, the Discharger shall notify the Central Valley Water Board by certified mail of the intent to make the demonstration **within seven days** of determining measurably significant evidence of a release, and shall submit a report **within 90 days** of determining measurably significant evidence of a release [Title 27, § 20420(k)(7)].

f. **Within 90 days** of the date that the Evaluation Monitoring Program from paragraph J.1.c is approved (the date is it established), the Discharger shall complete and submit the following:

i. **Results and Assessment for the Evaluation Monitoring Program.** A report with the results and assessment based on the approved Evaluation Monitoring Program [Title 27, § 20425(b)].

ii. **Updated Engineering Feasibility Study.** An updated engineering feasibility study for corrective action based on the data collected to delineate the release and data from the ongoing monitoring program required under Title 27, section 20425(e) [Title 27, § 20425(c)].

iii. **Amended ROWD for a Corrective Action Program.** An amended report of waste discharge to establish a Corrective Action Program meeting the requirements of Title 27, section 20430 based on the data collected to delineate the release and based on the updated engineering feasibility study [Title 27, § 20425(d)].

g. The Discharger shall (for releases from MSW landfill units) discuss the results of the updated engineering feasibility study, prior to the final selection of a remedy, in a public meeting with interested and affected parties [40 C.F.R. § 258.56(d)].

K. General Provisions

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Central Valley Water Board office by telephone as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.

2. All reports and transmittal letters shall be signed by persons identified below:

   a. For a corporation: by a principal executive officer of at least the level of senior vice-president.

   b. For a partnership or sole proprietorship: by a general partner or the proprietor.

c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.

d. A duly authorized representative of a person designated in a, b or c above if:

i. The authorization is made in writing by a person described in a, b, or c of this provision;

ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and

iii. The written authorization is submitted to the Central Valley Water Board.

e. Any person signing a document under this Section shall make the following certification:

> I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

3. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.

4. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste

during the active life, closure, and post-closure maintenance period of the waste management units and during subsequent use of the property for other purposes.

5. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of this Order.

6. The Discharger shall notify the Central Valley Water Board of a material change in; the types, quantity, or concentrations of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. This notification shall be given a reasonable time before the changes are made or become effective. No changes shall be made without Central Valley Water Board approval following authorization for closure pursuant to the site Notification of Closure [Title 27, § 21710(a)(4)].

7. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit or portion of a unit, and the manner and location of discharge. Such records shall be maintained by the Discharger until the beginning of the post-closure maintenance period. These records shall be on forms approved by the State Water Board or Central Valley Water Board and shall be maintained at the waste management facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the State Water Board or Central Valley Water Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Central Valley Water Board [Title 27, § 21720(f)].

8. In the event of any change in landowner or the operator of the waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Central Valley Water Board.

9. In the event of any change of ownership or responsibility for construction, operation, closure, or post-closure maintenance of the waste discharge facilities described in this Order, the Discharger shall notify the Central Valley Water Board prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, or post-closure maintenance will be in compliance with this Order and any revisions thereof [Title 27, § 21710(c)(1)].

10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley Water Board requesting transfer of the Order within **14 days** of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in General Provision K.2 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer of this Order shall be approved or disapproved by the Central Valley Water Board.

L. Storm Water Provisions

1. New and existing Class III landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [Title 27, § 20260(c)].

2. New and existing Class II landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [Title 27, § 20250(c)].

3. The Discharger shall design storm water conveyance systems for Class III units for a 100-year, 24-hour storm event, and shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].

4. MSW landfills located in a 100-year floodplain shall demonstrate that the landfill unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health or the environment [40 C.F.R. § 258.11(a)].

5. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions for the unit [Title 27, § 20365(a)].

6. Precipitation on landfills or waste piles which is not diverted by covers or drainage control systems shall be collected and managed through the

LCRS, which shall be designed and constructed to accommodate the precipitation conditions for each class unit [Title 27, § 20365(b)].

7. Diversion and drainage facilities shall be designed, constructed, and maintained to [Title 27, § 20365(c)]:

   a. accommodate the anticipated volume of precipitation and peak flows from surface runoff and under the precipitation conditions for the waste management unit:

   b. effectively divert sheet flow runoff laterally, via the shortest distance, into the drainage and collection facilities;

   c. prevent surface erosion;

   d. control and intercept run-on, in order to isolate uncontaminated surface waters from water that might have come into contact with waste;

   e. take into account:

      i. for closed waste management units and for closed portions of units, the expected final contours of the closed unit, including its planned drainage pattern;

      ii. for operating portions of waste management units other than surface impoundments, the unit's drainage pattern at any given time;

      iii. the possible effects of the waste management unit's drainage pattern on and by the regional watershed;

      iv. the design capacity of drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner which does not exceed the expected peak flow rate at the point of discharge if there were no waste management facility; and

   f. preserve the system's function. The Discharger shall periodically remove accumulated sediment from the sedimentation or detention basins as needed to preserve the design capacity of the system.

8. Collection and holding facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm or otherwise managed to maintain the design capacity of the system [Title 27, § 20365(d)].

9. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].

10. 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 [Title 27, § 20365(f)].

Any drainage layer in the final cover shall be designed and constructed to intersect with the final drainage system for the waste management unit in a manner promoting free drainage from all portions of the drainage layer [Title 27, §20365(f)].

CLASS II SURFACE IMPOUNDMENTS STANDARD PROVISIONS & REPORTING REQUIREMENTS

INDUSTRIAL FACILITIES REGULATED BY TITLE 27
(Title 27, § 20005 et seq.)

April 2016

A. Applicability

1. These Standard Provisions and Reporting Requirements (SPRRs) are applicable to Class II surface impoundments, waste piles, and land treatment units that are regulated by the Central Valley Regional Water Quality Control Board (hereafter, Central Valley Water Board) pursuant to the provisions of California Code of Regulations, title 27 ("Title 27"), section 20005 et seq.

2. "Order," as used throughout this document, means the Waste Discharge Requirements (WDRs) to which these SPRRs are incorporated.

3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.

4. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.

5. If there is any conflicting or contradictory language between the WDRs, the Monitoring and Reporting Program (MRP), or the SPRRs, then language in the WDRs shall govern over either the MRP or the SPRRs, and language in the MRP shall govern over the SPRRs.

6. If there is a site-specific need to change a requirement in these SPRRs for a particular facility, the altered requirement shall be placed in the appropriate section of the WDRs and will supersede the corresponding SPRRs requirement. These SPRRs are standard and cannot be changed as part of the permit writing process or in response to comments, but they will be periodically updated on an as-needed basis.

7. Unless otherwise stated, all terms are as defined in Water Code section 13050 and in Title 27, Section 20164.

B. Terms and Conditions

1. Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or Standard Provisions and Reporting Requirement, or

other order or prohibition issued, reissued, or amended by the Central Valley Water Board or the State Water Board, or intentionally or negligently discharging waste, or causing or permitting waste to be deposited where it is discharged into the waters of the state and creates a condition of pollution or nuisance, is a violation of this Order and the Water Code, which can result in the imposition of civil monetary liability [Wat. Code, § 13350(a)]

2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to [Wat. Code, § 13381]:

    a. Violation of any term or condition contained in this Order;

    b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;

    c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or

    d. A material change in the character, location, or volume of discharge.

3. Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall file a new report of waste discharge (ROWD), or other appropriate joint technical document (JTD), with the Central Valley Water Board [Wat. Code, § 13260(c) and § 13264(a)]. A material change includes, but is not limited to, the following:

    a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;

    b. A significant change in disposal method, location, or volume (e.g., change from land disposal to land treatment);

    c. A change in the type of waste being accepted for disposal; or

    d. A change to previously-approved liner systems or final cover systems that would eliminate components or reduce the engineering properties of components.

4. Representatives of the Central Valley Water Board may inspect the facilities to ascertain compliance with the waste discharge requirements. The inspection shall be made with the consent of the owner or possessor of the facilities or, if the consent is refused, with a duly issued warrant. However, in the event of an emergency affecting the public health or safety, an inspection

may be made without consent or the issuance of a warrant [Wat. Code, §13267(c)].

5. The Central Valley Water Board will review this Order periodically and will revise these waste discharge requirements when necessary [Wat. Code, § 13263(e) and Title 27, § 21720(b)].

6. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Central Valley Water Board [Wat. Code, § 13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

7. A discharge of waste into the waters of the state is a privilege, not a right. No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge [Wat. Code, § 13263(g)].

8. Technical and monitoring reports specified in this Order are requested pursuant to the Water Code [§13267(b)]. Failure to furnish the reports by the specified deadlines or falsifying information in the reports, are misdemeanors that may be liable civilly in accordance with §13268(b) of the Water Code [Wat. Code, §13268(a)].

C. Standard Prohibitions

1. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the waste management unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which, in turn:

   a. require a higher level of containment than provided by the unit; or

   b. are ‘restricted wastes’; or

   c. impair the integrity of containment structures;

   is prohibited [Title 27, § 20200(b)].

2. The discharge of wastes outside of a waste management unit or portions of a unit specifically designed for their containment is prohibited.

3. The discharge of waste to a closed waste management unit is prohibited.

4. The discharge of waste constituents to the unsaturated zone or to groundwater is prohibited, except within the treatment zone at a land treatment unit.

5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

D. Standard Discharge Specifications

1. The Discharger is responsible for accurate characterization of wastes, including a determination of whether or not wastes will be compatible with containment features and other wastes at the waste management unit and whether or not the wastes are required to be managed as a hazardous waste [Title 27, § 20200(c)] or designated waste [Title 27, § 20210].

2. Leachate collected from a waste management unit shall be discharged to the unit from which it came, or discharged to an appropriate waste management unit in accordance with Title 27 and in a manner consistent with the waste classification of the liquid [Title 27, § 20200(d) and § 20340(g)].

3. Wastes shall be discharged only into waste management units specifically designed for their containment and/or treatment, as described in this Order.

4. The discharge shall remain within the designated disposal area at all times.

5. The discharge of waste shall not cause a nuisance condition [Wat. Code, § 13050(m)].

E. Standard Facility Specifications

1. All waste management units shall be designed, constructed, and operated to ensure that wastes, including leachate, will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [Title 27, § 20240(c)], including the capillary fringe.

2. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].

3. The Discharger shall **immediately** notify the Central Valley Water Board staff of any slope failure occurring at a waste management unit. Any failure which threatens the integrity of containment features or the waste management unit shall be promptly corrected in accordance with an approved method [Title 27, § 21710(c)(2)].

4. The Discharger shall **immediately** notify Central Valley Water Board staff of any flooding, unpermitted discharge of waste off-site or outside of waste management units, equipment failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

5. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

6. The Discharger shall lock all groundwater monitoring wells with a lock on the well cap or monitoring well box. All monitoring devices shall be clearly labeled with their designation including all monitoring wells, LCRS risers, and lysimeter risers and shall be easily accessible for required monitoring by authorized personnel. Each monitoring device shall be clearly visible and be protected from damage by equipment or vehicles.

7. The Discharger shall maintain the depth of the fluid in the sump of each waste management unit at the minimum needed for efficient pump operation (the depth at which the pump turns on given the pump intake height and maximum pump cycle frequency).

8. Each LCRS shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions [Title 27, § 20340(d)].

9. The Discharger shall maintain a *Storm Water Pollution Prevention Plan* and *Monitoring Program and Reporting Requirements* in accordance with State Water Board Order No. 2014-0057-DWQ (or most recent general industrial storm water permit), or retain all storm water on-site.

F. Standard Construction Specifications

1. The Discharger shall submit for review and approval at least **90 days** prior to proposed construction, design plans and specifications for new Class II waste management units that include the following:

    a. Detailed construction drawings showing all required liner system components, the LCRS, leachate sump, unsaturated zone monitoring system, and access to the LCRS for required annual testing.

    b. A Construction Quality Assurance (CQA) Plan prepared by a California-registered civil engineer or certified engineering geologist, and that meets the requirements of Title 27, section 20324.

c. A geotechnical evaluation of the area soils, evaluating their use as the base layer or reference to the location of this information in the ROWD/JTD [Title 27, § 21750(f)(4)].

d. Information about the seismic design of the proposed new waste management unit (or reference to the location of this information in the ROWD/JTD) in accordance with Title 27, section 20370.

e. A revised water quality monitoring plan for groundwater detection monitoring (or information showing the existing plan is adequate) in accordance with Title 27, section 20415.

f. An Operation Plan (or reference to the location of this information in the ROWD/JTD) meeting the requirements of Title 27, sections 21760(b) and 20375(b).

2. All containment structures shall be designed by, and construction shall be supervised by, a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge.

3. The Discharger shall not proceed with construction until the construction plans, specifications, and all applicable construction quality assurance plans have been approved. Waste management units shall receive a final inspection and approval of the construction by Central Valley Water Board staff before use of the unit commences [Title 27, § 20310(e)].

4. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a waste management unit's containment features or monitoring systems shall be approved by a California registered civil engineer or a certified engineering geologist [Title 27, § 21710(d)].

5. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [Title 27, § 20320(a)].

6. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping [Title 27, § 20365(a)].

7. The Discharger shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].

8. All Class II waste management units shall be designed to withstand maximum credible earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion [Title 27, § 20370(a)].

9. The Discharger shall perform stability analyses that include components to demonstrate the integrity of the waste management unit foundation, final slopes, and containment systems under both static and dynamic conditions throughout the life of the unit [Title 27, § 21750(f)(5)].

10. New Class II Units, other than LTUs and expansions of existing Class II units, shall have a 200 foot setback from any known Holocene fault. [Title 27, § 20250(d)].

11. Liners shall be designed and constructed to contain the fluid, including waste, and leachate [Title 27, § 20330(a)].

12. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities as long as a reasonable number of field hydraulic conductivity tests are also conducted [Title 27, § 20320(c)].

13. Hydraulic conductivities specified for containment structures other than the final cover shall be relative to the fluids (leachate) to be contained. Hydraulic conductivities for the final cover shall be relative to water [Title 27, § 20320(b)].

14. A test pad for each barrier layer and any final cover shall be constructed in a manner duplicating the field construction. Test pad construction methods, with the designated equipment, shall be used to determine if the specified density/moisture-content/hydraulic conductivity relationships determined in the laboratory can be achieved in the field with the compaction equipment to be used and at the specified lift thickness [Title 27, § 20324(g)(1)(A)].

15. The Discharger shall ensure proper preparation of the subgrade for any liner system that includes a GCL so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.

16. The Discharger shall propose an electronic leak location survey of the top liner for any new waste management unit in the construction quality assurance plan unless the Discharger demonstrates that a leak location survey is not needed.

17. Leachate collection and removal systems are required for Class II surface impoundments [Title 27, § 20340(a)].

18. The LCRS shall be designed, constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the waste management unit [Title 27, § 20340(b)].

19. Leachate collection and removal systems shall be designed and operated to function without clogging through the life of the waste management unit.

20. The leachate sump, leachate removal pump, and pump controls shall be designed and set to maintain a fluid depth no greater than the minimum needed for efficient pump operation [Title 27, § 20340(c)].

21. All construction of liner systems and final cover systems shall be performed in accordance with a Construction Quality Assurance Plan certified by a registered civil engineer or a certified engineering geologist [Title 27, § 20323].

22. The Construction Quality Assurance program shall be supervised by a registered civil engineer or a certified engineering geologist who shall be designated the CQA officer [Title 27, § 20324(b)(2)].

23. The Discharger shall ensure that a third party independent of both the Discharger and the construction contractor performs all of the construction quality assurance monitoring and testing during the construction of a liner system.

24. The Discharger shall notify Central Valley Water Board staff at least **14 days** prior to commencing field construction activities including construction of a new Class II waste management unit, construction of a final cover (for units closed as a landfill), or any other construction that requires Central Valley Water Board staff approval under this Order.

25. The Discharger shall submit for review and approval at least **60 days** prior to proposed discharge, final documentation required in Title 27 Section 20324(d)(1)(C) following the completion of construction of a new Class II waste management unit. The report shall be certified by a registered civil engineer or a certified engineering geologist and include a statement that the

liner system was constructed in accordance with the approved design plans and specifications, the CQA Plan, the requirements of the WDRs, and that it meets the performance goals of Title 27. The report shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, the construction quality assurance plan, and the performance goals of Title 27.

26. The Discharger shall not discharge waste onto a newly constructed liner system until the final documentation report has been reviewed and an acceptance letter has been received.

G. Standard Closure And Post-Closure Specifications

1. The final closure and post-closure maintenance plan for the waste management unit shall include at least the following: an itemized cost analysis, closure schedule, any proposed final treatment procedures, map, changes to the unit description presented in the most recent ROWD, future land use, and a construction quality assurance plan [Title 27, § 21769(c) & (d)].

2. Closure of each waste management unit shall be under the direct supervision of a registered civil engineer or certified engineering geologist [Title 27, § 20950(b)].

3. The final cover of waste management units closed as a landfill shall be designed, graded, and maintained to prevent ponding and soil erosion due to high run-off velocities [Title 27, § 21090(b)(1)(A)].

4. The final grading design shall be designed and approved by a registered civil engineer or certified engineering geologist [Title 27, § 21090(b)(1)(C)].

5. All final cover designs shall include a minimum 1-foot thick erosion resistant vegetative layer or a mechanically erosion-resistant layer [Title 27, § 21090(a)(3)(A)(1 & 2)].

6. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion [Title 27, § 21090(b)(2)].

7. The Discharger shall design storm water conveyance systems for Class II units that are closed as a landfill for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].

8. Construction or repair of a final cover system's low-hydraulic conductivity layer is to be carried out in accordance with an approved construction quality assurance plan [Title 27, § 21090(b)(1)(E)].

9. Within **30 days** of completion of all closure activities, the Discharger shall certify that all closure activities were performed in accordance with the most recently approved final closure plan and CQA Plan, and in accordance with all applicable regulations. The Discharger shall also certify that units that are closed as a landfill shall be maintained in accordance with an approved post-closure maintenance plan [Title 27, § 21710(c)(6)].

10. The post-closure maintenance period for units closed as a landfill shall continue until the Central Valley Water Board determines that wastes remaining in the landfill unit(s) no longer pose a threat to water quality [Title 27, § 20950(a)(1)].

11. The Discharger shall periodically inspect and identify problems with the final cover including areas that require replanting, erosion, areas lacking free drainage, and any areas damaged by equipment operations [Title 27, § 21090(a)(4)(B)].

12. The Discharger shall repair any cover promptly in accordance with a cover repair plan to be included in the final post-closure maintenance plan [Title 27, § 21090(a)(4)(C)].

H. Standard Financial Assurance Provisions

1. The Discharger shall establish an irrevocable fund (or provide other means) for closure to ensure closure of each Class II unit in accordance with an approved closure plan [Title 27, § 20950(f) and § 22207(a)].

2. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the waste management unit [Title 27, §20380(b) and § 22222].

I. Standard Monitoring Specifications

1. The water quality monitoring program shall include appropriate and consistent sampling and analytical procedures and methods designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points [Title 27, § 20415(e)(4)].

2. All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer [Title 27, § 20415(e)(1)].

3. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport [Title 27, § 20415(b)(4)(A)].

4. All sample chemical analyses of any material shall be performed by a laboratory certified by the California Department of Health Services [Wat. Code, § 13176(a)].

5. A Detection Monitoring Program for a new Class II waste management unit shall be installed, operational, and one year of monitoring data collected from background monitoring points prior to the discharge of wastes [Title 27, § 20415(e)(6)].

6. Background for water samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point).

7. The Discharger shall submit for approval, establish, and maintain an approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:

    a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;

    b. Sample preservation information and shipment procedures;

    c. Sample analytical methods and procedures;

    d. Sample quality assurance/quality control (QA/QC) procedures;

    e. Chain of Custody control; and

    f. Sample analysis information including sample preparation techniques to avoid matrix interferences, method detection limits (MDLs), practical quantitation limits (PQLs) and reporting limits (RLs), and procedures for reporting trace results between the MDL and PQL.

    If required by the Executive Officer, the Discharger shall modify the Sample Collection and Analysis Plan to conform with this Order.

8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan. Appropriate sample preparation techniques shall be used to minimize matrix interferences.

9. If methods other than USEPA-approved methods or Standard Methods are used, or there is a proposed alternant USEPA method than the one listed in the MRP, the proposed methodology shall be submitted for review and approval prior to use, including information showing its equivalence to the required method.

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

11. The laboratory reporting limit (RL) for all reported monitoring data shall be set no greater than the practical quantitation limit (PQL).

12. **“Trace” results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.

13. Laboratory data shall not be altered or revised by the Discharger. If the Discharger observes potential lab errors, it shall identify the issue in the monitoring report and shall describe steps that will be taken to prevent similar errors in the future.

14. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation

procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs. MDLs and PQLs shall be reported.

15. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged in the laboratory report accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result**. The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

16. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and signature of a responsible person from the laboratory. **Sample results shall be reported unadjusted for blank results or spike recoveries**. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged, but the analytical results shall not be adjusted.

17. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.

18. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples [Title 27, § 20415(b)(4)(B)].

19. All borings are to be logged during drilling under the direct supervision of a registered geologist or registered civil engineer with expertise in stratigraphic well logging [Title 27, § 20415(e)(2)].

20. Soils are to be described according to the Unified Soil Classification System [Title 27, § 20415(e)(2)(A)]. Rock is to be described in a manner appropriate for the purpose of the investigation [Title 27, § 20415(e)(2)(B)].

21. The Discharger shall submit a work plan for review and approval at least **60 days** prior to installation or abandonment of groundwater monitoring wells.

22. The Discharger shall provide Central Valley Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation or abandonment of monitoring devices.

23. The water quality protection standard shall consist of the constituents of concern (COC), concentration limits, and the point of compliance. The water quality protection standard shall apply during the active life of the waste management unit, closure period, post-closure maintenance period, and any compliance period under Title 27, section 20410 [Title 27, § 20390].

24. The point of compliance at which the water quality protection standard applies is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit [Title 27, § 20405).

25. The compliance period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program and is the number of years equal to the active life of the waste management unit plus the closure period [Title 27, § 20410(a)].

26. The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the waste management unit [Title 27, § 20415(b)(1)(A)].

27. The Detection Monitoring Program shall include a sufficient number of monitoring points, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance to allow the detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)1.].

28. Additional monitoring points shall be added as necessary to provide the best assurance of the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)2.].

29. The Detection Monitoring Program shall also include a sufficient number of monitoring points installed at appropriate depths and locations to yield groundwater samples from other aquifers or perched zones not already monitored to provide the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)3. and 4., and §20420(b)].

30. A surface water monitoring system shall be established to monitor each surface water body that could be affected by a release from the waste management unit [Title 27, § 20415(c)].

31. An unsaturated zone monitoring system shall be established for each waste management unit [Title 27, § 20415(d)].

32. The Discharger shall notify Central Valley Water Board staff within **seven days** if fluid is detected in a previously dry LCRS, unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in a LCRS [Title 27, § 21710(c)(3)].

33. Driller's logs for all monitoring wells shall to be submitted to the Central Valley Water Board and the Department of Water Resources [Wat. Code, § 13751 and Title 27, § 20415(b)(3)].

34. Groundwater elevation, temperature, electrical conductivity, turbidity, and pH are to be accurately measured at each well each time groundwater is sampled [Title 27, § 20415(e)(13)].

35. The groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation being monitored shall be determined at least quarterly [Title 27, § 20415(e)(15)].

36. The Discharger shall graph all analytical data from each monitoring point and background monitoring point and shall submit the graphs to the Central Valley Water Board annually [Title 27, § 20415(e)(14)].

37. For each waste management unit, the Discharger shall collect all data necessary for selecting appropriate data analysis methods for establishing background values for each constituent of concern and for each monitoring parameter [Title 27, § 20420(c)]. The Discharger shall propose a data analysis method that includes a detailed description of the criteria to be used for determining "measurably significant" (as defined in Title 27, section 20164) evidence of a release from the waste management unit and determining

compliance with the water quality protection standard [Title 27, § 20415(e)(6) and (7)].

38. For statistical analysis of data, the Discharger shall use one of the methods described in Title 27, section 20415(e)(8)(A)-(E). A non-statistical data analysis method can be used if the method can achieve the goal of the particular monitoring program at least as well as the most appropriate statistical method [Title 27, § 20415(e)(8)]. The Discharger shall use a statistical or nonstatistical data analysis method that complies with Title 27, section 20415(e)(7, 8, 9, and 10), to compare the concentration of each constituent of concern or monitoring parameter with its respective background concentration to determine whether there has been a measurably significant evidence of a release from the waste management unit. For any given monitoring point at which a given constituent has already exhibited a measurably significant indication of a release at that monitoring point, the Discharger may propose to monitor the constituent, at that well, using a concentration-versus-time plot.

39. The Discharger may propose an alternate statistical method [to the methods listed under Title 27, section 20415(e)(8)(A-D)] in accordance with Title 27, section 20415(e)(8)(E), for review and approval.

40. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27, section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs or an approved Sample Collection and Analysis Plan for routine laboratory operating conditions that are available to the facility. The Discharger's technical report (Sample Collection and Analysis Plan and/or Water Quality Protection Standard Report), pursuant to Title 27, section 20415(e)(7), shall consider the PQLs listed in Appendix IX, Article 19 to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or non-statistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

41. The water quality protection standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (e.g., USEPA methods 8260 and 8270).

42. Alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) if part of an approved water quality protection standard. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.

43. **Confirmation of Measurably Significant Evidence of a Release.** Whenever a constituent is detected at a detection monitoring point at a concentration that exceeds the concentration limit from the water quality protection standard, the Discharger shall conduct verification sampling to confirm if the exceedance is due to a release or if it is a false-positive (unless previous monitoring has already confirmed a release for that constituent at that monitoring point). An exceedance of the concentration limit from the water quality protection standard is considered measurably significant evidence of a release that must be either confirmed or denied. There are two separate verification testing procedures:

    a. Standard Monitoring Specification I.0 provides the procedure for analytes that are detected in less than 10% of the background samples such as non-naturally occurring constituents like volatile organic compounds; and

    b. Standard Monitoring Specification I.0 provides the procedure for analytes that are detected in 10% or greater of the background samples such as naturally occurring constituents like chloride.

44. **Verification Procedure for Analytes Detected in Less than 10% of Background Samples**. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:

    a. **Initial Determination of Measurably Significant Evidence of a Release**. Identify each analyte in the **current** detection monitoring point sample that exceeds either its respective MDL or PQL, and for which a release has not been previously confirmed. The Discharger shall conclude that the exceedance provides a preliminary indication of a release or a

change in the nature or extent of the release, at that monitoring point, if ***either:***

1) The data contains two or more analytes that equal or exceed their respective MDLs; or

2) The data contains one or more analyte that equals or exceeds its PQL.

b. **Discrete Retest** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)]:

1) In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.0.a., above) that there is a preliminary indication of a release, then the Discharger shall **immediately** notify Central Valley Water Board staff by phone or e-mail and, within **30 days** of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated and analyze them for the constituents that caused the need for the retest.

2) **Confirmation of a Release**. As soon as the retest data are available, the Discharger shall conclude that measurably significant evidence of a release is confirmed if (not including the original sample) two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL. The Discharger shall then:

a) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of the verbal notification; and

b) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.

c) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

45. **Verification Procedure for Analytes Detected in 10% or Greater of the Background Samples.** The Discharger shall use either a statistical or non-statistical method pursuant to Title 27, section 20415(e)(8)(E) for all analytes that are detected in 10% or greater of the background samples. The Discharger shall use one of the statistical methods required in Title 27, section 20415(e)(8)(E) unless another method has been proposed by the Discharger in a Water Quality Protection Standard Report (or equivalent

report) and approved by the Central Valley Water Board in a Monitoring and Reporting Program pursuant to Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E). The method shall be implemented as follows:

a. **Initial Determination of Measurably Significant Evidence of a Release**. The Discharger shall compare the value reported by the laboratory for each analyte to the statistically-derived concentration limit from the most recent report (Annual Monitoring Report or Water Quality Protection Standard Report) that uses the approved statistical procedure. If the value exceeds the concentration limit for that constituent, the Discharger shall conclude that there in measurably significant evidence of a release [Title 27, § 20420(i)].

b. **Retest Method** [Title 27, § 20415(e)(8)(E) and § 20420(j)(1-3)].

1) In the event that the Discharger or Central Valley Water Board staff concludes (pursuant to paragraph I.0.a., above) that there is a preliminary indication of a release, then the Discharger shall **immediately** notify Central Valley Water Board staff by phone or e-mail and, within **30 days** [Title 27, § 20415(e)(8)(E)(3)] of such indication, the Discharger shall implement a verification procedure/retest option, in accordance with Title 27, sections 20415(e)(8)(E) and 20420(j)(2). The verification procedure shall include either a single “composite” retest (i.e., a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release) or shall consist of at least two “discrete” retests (i.e., statistical analyses each of which analyzes only newly-acquired data from the monitoring point that indicated a release) [Title 27, § 20415(e)(8)(E)]. The Discharger may use an alternate method previously approved by the Central Valley Water Board and included in the Monitoring and Reporting Program. The verification procedure shall comply with the requirements of Title 27, section 20415(e)(8)(E) in addition to the performance standards of Title 27, section 20415(e)(9). The retest samples shall be collected from the monitoring point where the release is preliminarily indicated and shall be analyzed for the constituents that caused the need for the retest. For any indicated monitoring parameter or constituent of concern, if the retest results of one or more of the retest data suites confirm the original indication, the Discharger shall conclude that measurably significant evidence of a release has been confirmed.

2) **Confirmation of a Release**. As soon as the retest data are available, the Discharger shall evaluate the results pursuant to paragraph I.0.b.1, above and shall:

a) **Immediately** verbally notify the Central Valley Water Board whether or not the retest confirmed measurably significant evidence of a release for the analyte at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of the verbal notification; and

b) Carry out the requirements of Section J, **RESPONSE TO A RELEASE** if a release has been confirmed.

c) Add any five-year analyte that is confirmed per this method to the monitoring parameter list such that it is monitored during each regular monitoring event.

46. **Physical Evidence of a Release**. If the Discharger determines that there is a significant **physical** evidence of a release, the Discharger shall immediately verbally notify Central Valley Water Board staff and provide written notification **by certified mail within 7 days** of such determination, and within **90 days** shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program [Title 27, § 20385(a)(3) and § 20420(l)(1) & (2)].

J. Response to a Release

1. **Measurably Significant Evidence of a Release Has Been Confirmed**. If the Discharger has confirmed that there is measurably significant evidence of a release from a waste management unit pursuant to Standard Monitoring Specification I.0 or I.0, then the Discharger shall:

a. **Immediately** sample all monitoring points in the affected medium at that waste management unit and determine the concentration of all monitoring parameters and constituents of concern for comparison with established concentration limits. Because this constituent of concern scan does not involve statistical testing, the Discharger will need to collect and analyze only a single water sample from each monitoring point in the affected medium [Title 27, § 20420(k)(1)].

b. **Within 90 days** of confirming measurably significant evidence of a release, the Discharger shall submit an amended report of waste discharge to establish an Evaluation Monitoring Program meeting the requirements of Title 27, sections 20420(k)(5)(A-D), including but not limited to the results of sampling pursuant to paragraph J.0.0, above.

The Evaluation Monitoring Program shall be designed for the collection and analysis of all data necessary to assess the nature and extent of the release and to determine the spatial distribution and concentration of each constituent throughout the zone affected by the release [Title 27, § 20420(k)(5) and § 20425(b)].

c. **Within 180 days** of confirming measurably significant evidence of a release, the Discharger shall submit to the Central Valley Water Board an initial engineering feasibility study for a Corrective Action Program necessary to meet the requirements of Title 27, section 20430. At a minimum, the initial engineering feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern [Title 27, § 20420(k)(6)].

d. If the Discharger confirms that there is measurably significant evidence of a release from the waste management unit at any monitoring point, the Discharger may attempt to demonstrate that a source other than the waste management unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in groundwater, surface water, or the unsaturated zone. The Discharger may make a demonstration pursuant to Title 27, section 20420(k)(7) in addition to or in lieu of submitting both an amended report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements and due dates of Title 27, sections 20420(k)(6) & (7) unless Central Valley Water Board staff agree that the demonstration successfully shows that a source other than the waste management unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis, or statistical evaluation or from natural variation in groundwater, surface water, or the unsaturated zone. In order to make this demonstration, the Discharger shall notify the Central Valley Water Board by certified mail of the intent to make the demonstration **within seven days** of determining measurably significant evidence of a release, and shall submit a report **within 90 days** of determining measurably significant evidence of a release [Title 27, § 20420(k)(7)].

e. **Within 90 days** of the date that the Evaluation Monitoring Program from paragraph J.0.0 is approved (the date is it established), the Discharger shall complete and submit the following:

i) **Results and Assessment for the Evaluation Monitoring Program.** A report with the results and assessment based on the approved Evaluation Monitoring Program [Title 27, § 20425(b)].

ii) **Updated Engineering Feasibility Study.** An updated engineering feasibility study for corrective action based on the data collected to delineate the release and data from the ongoing monitoring program required under Title 27, section 20425(e) [Title 27, § 20425(c)].

iii) **Amended ROWD for a Corrective Action Program.** An amended report of waste discharge to establish a Corrective Action Program meeting the requirements of Title 27, section 20430 based on the data collected to delineate the release and based on the updated engineering feasibility study [Title 27, § 20425(d)].

K. General Provisions

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Central Valley Water Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.

2. All reports and transmittal letters shall be signed by persons identified below:

   a. For a corporation: by a principal executive officer of at least the level of senior vice-president.

   b. For a partnership or sole proprietorship: by a general partner or the proprietor.

   c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.

   d. A duly authorized representative of a person designated in a, b or c above if:

      1) The authorization is made in writing by a person described in a, b, or c of this provision;

2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and

3) The written authorization is submitted to the Central Valley Water Board.

e. Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.

4. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and leachate generated by discharged waste during the active life, closure, and any post-closure maintenance period of the waste management units and during subsequent use of the property for other purposes.

5. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of this Order.

6. The Discharger shall notify the Central Valley Water Board of a material change in; the types, quantity, or concentrations of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. This notification shall be given a reasonable time before the changes are made or become effective. No changes shall be made without Central Valley Water Board approval following authorization for closure pursuant to the site Notification of Closure [Title 27, § 21710(a)(4)].

7. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit or portion of a unit, and the manner and location of discharge. Such records shall be maintained by the Discharger until the beginning of the post-closure maintenance period. These records shall be on forms approved by the State Water Board or Central Valley Water Board and shall be maintained at the waste management facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the State Water Board or Central Valley Water Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Central Valley Water Board [Title 27, § 21720(f)].

8. In the event of any change in landowner or the operator of the waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Central Valley Water Board.

9. In the event of any change of ownership or responsibility for construction, operation, closure, or post-closure maintenance of the waste discharge facilities described in this Order, the Discharger shall notify the Central Valley Water Board prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, or post-closure maintenance will be in compliance with this Order and any revisions thereof [Title 27, § 21710(c)(1)].

10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley Water Board requesting transfer of the Order within **14 days** of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in General Provision 0.0 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer of this Order shall be approved or disapproved by the Central Valley Water Board.

L. Storm Water Provisions

1. The Discharger shall design storm water conveyance systems for Class II units for a 1,000-year, 24-hour storm event [Title 27, § 21750(e)(3)].

2. Waste management units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions for the unit [Title 27, § 20365(a)].

3. Precipitation on Class II waste piles which is not diverted by covers or drainage control systems shall be collected and managed through the LCRS, which shall be designed and constructed to accommodate the precipitation conditions for each class unit [Title 27, § 20365(b)].

4. Diversion and drainage facilities shall be designed, constructed, and maintained to [Title 27, § 20365(c)]:

    a. Accommodate the anticipated volume of precipitation and peak flows from surface runoff and under the precipitation conditions for the waste management unit.

    b. Effectively divert sheet flow runoff laterally, via the shortest distance, into the drainage and collection facilities.

    c. Prevent surface erosion through the use of energy dissipators where required to decrease the velocity of runoff, slope protection, and other erosion control measures where needed to prevent erosion.

    d. Control and intercept run-on, in order to isolate uncontaminated surface waters from water that might have come into contact with waste.

    e. Take into account:

        i) For closed waste management units and for closed portions of units, the expected final contours of the closed unit, including its planned drainage pattern.

        ii) For operating portions of waste management units other than surface impoundments, the unit’s drainage pattern at any given time.

        iii) The possible effects of the waste management unit’s drainage pattern on and by the regional watershed.

        iv) The design capacity of drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner which does not exceed the

expected peak flow rate at the point of discharge if there were no waste management facility.

f. Preserve the system's function. The Discharger shall periodically remove accumulated sediment from the sedimentation or detention basins as needed to preserve the design capacity of the system.

5. Collection and holding facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm or otherwise managed to maintain the design capacity of the system [Title 27, § 20365(d)].

6. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].

7. 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 [Title 27, § 20365(f)].

8. Any drainage layer in a final cover shall be designed and constructed to intersect with the final drainage system for the waste management unit in a manner promoting free drainage from all portions of the drainage layer [Title 27, §20365(f)].

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2024-0033

FOR
LAKE COUNTY PUBLIC SERVICES DEPARTMENT
EASTLAKE SANITARY LANDFILL
LAKE COUNTY

INFORMATION SHEET

Historic Groundwater Conditions (or Degradation and Corrective Action)

1. Central Valley Water Board staff reviewed the Discharger's semiannual self-monitoring reports required under MRP R5-2006-0108 and found that the Discharger continued to detect VOCs in groundwater monitoring wells. The table below shows the number of VOC detections from 2010 through 2017:

	Year							
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
# Detections in Upgradient Background Wells								
MW-3	**1**	0	0	0	0	0	0	0
MW-9A	0	0	0	0	0	0	0	0
MW-9B	0	0	0	0	0	0	0	0
# Detections in Downgradient Monitoring Wells								
MW-1	0	0	0	**1**	0	0	0	0
MW-2	0	0	0	0	0	0	0	0
MW-5	**3**	**9**	**7**	**16**	0	**8**	**15**	**17**
MW-6	0	0	0	0	0	0	0	0
MW-8	0	0	0	0	0	0	0	0
MW-10	0	0	**1**	**2**	**1**	**1**	**1**	**2**
MW-11	0	0	0	**1**	0	0	**5**	0
MW-12	0	0	0	0	0	0	0	0
MW-13	**3**	**3**	**4**	**4**	**5**	**5**	**8**	**6**
MW-14	**3**	**6**	**4**	**7**	**5**	**5**	**11**	**10**
MW-15	0	**3**	**5**	**7**	**9**	**8**	**11**	**6**
MW-16	0	**4**	**10**	**8**	0	**7**	0	0
MW-17	0	0	0	0	**10**	**9**	**4**	**10**
MW-18	0	0	0	0	0	0	0	0
MW-19	0	0	0	0	0	0	0	**2**

	Year							
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
MW-20	0	0	0	0	0	0	0	0
MW-21	-	-	-	-	-	-	**12**	**8**
MW-22	-	-	-	-	-	-	0	0
MW-23	-	-	-	-	-	-	0	0
MW-24	-	-	-	-	-	-	0	0
MW-25	-	-	-	-	-	-	**1**	**1**
MW-26	-	-	-	-	-	-	0	**3**
MW-27	-	-	-	-	-	-	**2**	**2**
MW-28	-	-	-	-	-	-	0	**1**
MW-29	-	-	-	-	-	-	0	0
MW-30	-	-	-	-	-	-	0	**9**
MW-31	-	-	-	-	-	-	0	0
MW-32	-	-	-	-	-	-	0	0

Monitoring wells MW-5, MW-13, MW-14, MW-15, MW-17, and MW-21 continued to detect VOCs in groundwater. The Table below shows the type and number of VOCs detected in these monitoring wells:

Well	Constituent of Concern	2010	2011	2012	2013	2014	2015	2016	2017
MW-5	**Methyl-tert-butyl ether (MTBE)**	0	2	2	2		1	3	2
	tert-Butyl alcohol (TBA)	0	1	1	2		1	2	2
	1,1-Dichloroethane	0	0	1	1		1	0	2
	Benzene	1	2	0	2		1	2	2
	cis-1,2-Dichloroethene	1	2	2	2		1	3	2
	Di-isopropyl ether (DIPE)	0	0	0	2		1	2	2
	Acetone	1	1	0	1		0	0	0
	Chloroethane	0	0	0	2		1	1	2
	Dichlorodifluoromethane	0	0	1	1		0	1	0
	Trichloroethene (TCE)	0	1	0	1		1	1	2

Well	Constituent of Concern	2010	2011	2012	2013	2014	2015	2016	2017
MW-13	**Methyl-tert-butyl ether (MTBE)**	1	2	2	2	2	2	3	2
	tert-Butyl alcohol (TBA)	1	1	1	0	0	1	2	2
	1,1-Dichloroethane	0	0	1	2	2	1	3	2
	Chloroethane	1	0	0	0	0	1	0	0
	Dichlorodifluoromethane	0	0	0	0	1	0	0	0
MW-14	**Methyl-tert-butyl ether (MTBE)**	0	2	2	2	2	2	3	2
	tert-Butyl alcohol (TBA)	1	2	1	1	0	1	2	2
	1,1-Dichloroethane	0	0	1	2	2	1	2	2
	Benzene	1	1	0	1	0	0	2	2
	Di-isopropyl ether (DIPE)	1	1	0	1	0	1	2	2
	Dichlorodifluoromethane	0	0	0	0	1	0	0	0
MW-15	**Methyl-tert-butyl ether (MTBE)**	0	0	2	2	2	2	3	2
	tert-Butyl alcohol (TBA)	0	2	1	2	1	2	3	2
	1,1-Dichloroethane	0	1	1	2	2	2	3	2
	Benzene	0	0	0	0	2	1	0	0
	Dichlorodifluoromethane	0	0	1	0	1	0	0	0
MW-17	**Methyl-tert-butyl ether (MTBE)**					2	2	1	2
	tert-Butyl alcohol (TBA)					2	1	1	2
	1,1-Dichloroethane					2	2	0	2
	Benzene					2	2	1	2
	cis-1,2-Dichloroethene					2	2	1	2
MW-21	**Methyl-tert-butyl ether (MTBE)**							3	2
	Benzene							3	1
	cis-1,2-Dichloroethene							2	2
	Dichlorodifluoromethane							0	1
	Toluene							2	0
	1,4-Dichlorobenzene							2	2

2. The Discharger has submitted the reports required by the CAO and is currently monitoring the effectiveness of its corrective action plan. These WDRs continue to

require the Discharger to comply with Cleanup and Abatement Order (CAO) R5-2015-0713 for addressing VOCs in groundwater due to landfill gas impacts.

Inorganic Compounds in Groundwater

3. The Discharger established concentration limits for inorganic compounds that naturally occur in groundwater to describe background water quality. Continued exceedances of background water quality concentration limits in downgradient groundwater monitoring wells is indication of a release from a WMU. Central Valley Water Board staff reviewed the Discharger's semiannual self-monitoring reports required under MRP R5-2006-0108, and found that the Discharger continues to exceed background concentration limits for inorganic compounds in downgradient groundwater monitoring wells. The table below shows the percentage of the time the inorganic compound exceeded the background concentration limit from 2013 through 2017:

	Chloride (% Exceedances)					Sodium (% Exceedances)				
Well	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**
MW-1	100	100	100	100	100	100	100	100	100	100
MW-11	100	100	100	100	100	100	100	100	100	100
MW-12	100	100	100	100	100	100	100	100	100	100
MW-14	100	100	100	100	100	100	100	100	100	100
MW-17	100	100	100	100	100		100	100	100	100
MW-19		100	100	100	100		100	100	100	100
MW-21				100	100				100	100
MW-29					100					100
MW-31					100					100
MW-32					100					100

	Potassium (% Exceedances)					Sulfate (% Exceedances)				
Well	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**
MW-1	100	100	100	100	100	100	100	100	100	100

	Potassium (% Exceedances)					Sulfate (% Exceedances)				
Well	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**
MW-11	100	100	100	100	100	100	100	100	100	100
MW-12	100	100	100	100	100	100	100	100	100	100
MW-14	100	100	100	100	100	100	100	100	100	100
MW-17		100	100	100	100	100	100	100	100	100
MW-19		100	100	100	100		100	100	100	100
MW-21				100	100				100	100
MW-29					100					100
MW-31					100					100
MW-32					100					100

4. The continued exceedance of chloride, sodium, potassium, and sulfate is indicative of a leachate related release from a WMU. After review of the Discharger's Engineering Feasibility Study (Revision 2) and 2017 SMR monitoring data, Central Valley Water Board staff on 30 March 2018 notified the Discharger that corrective action for release of VOCs to groundwater would not address a release of leachate to groundwater. The 30 March 2018 letter required that the Discharger by 31 July 2017 (sic) submit an evaluation of the inorganic constituents across the site.