CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Fresno Office
1685 "E" Street
Fresno, CA 93706-2007

Sacramento Office (Main)
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Redding Office
364 Knollcrest Drive #205
Redding, CA 96002

Regional Board Website (https://www.waterboards.ca.gov/centralvalley)

[TENTATIVE] WASTE DISCHARGE REQUIREMENTS ORDER R5-2025-####

ORDER INFORMATION

Order Type(s):	Waste Discharge Requirements (WDRs)
Status:	TENTATIVE
Program:	Title 27 Discharges to Land
Region 5 Office:	Fresno
Discharger(s):	Merced County Regional Waste Management Authority
Facility:	Highway 59 Solid Waste Landfill
Address:	7040 N. State Highway 59, Merced CA. 95348
County:	Merced County
Parcel Nos.:	170-070-001, 170-070-002, 175-050-003, 175-060-001, and 175-060-003
GeoTracker ID:	L10002455947
Prior Order(s):	R5-2014-0139 and Revised MRP R5-2014-0139-01, R5-2006-0022

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 _____ February 2025.

_____

PATRICK PULUPA,
Executive Officer

REGIONAL BOARD INFORMATION

Sacramento Office (Main)
Rancho Cordova, CA 95670-6114
11020 Sun Center Drive #200
Telephone: (916) 464-3291

Fresno Office
1685 "E" Street
Fresno, CA 93706-2007
Telephone: (559) 445-5116

Redding Office
364 Knollcrest Drive #205
Redding, CA 96002
Telephone: (530) 224-4845

Regional Board Website
(https://www.waterboards.ca.gov/centralvalley)

TABLE OF CONTENTS

TABLE INDEX ..... **iii**

GLOSSARY ..... **iv**

FINDINGS **1**

Introduction 1

Materials Accompanying Order 2

Facility 3

Waste Classification & Permitting 3

Alternative Daily Cover / Intermediate Cover (Operating Landfill Units) 5

Site Conditions 5

Corrective Action 7

Monitoring Networks 8

Water Quality Protection Standard 10

Unit Construction 10

Unit Closures 11

Post-Closure Maintenance & Financial Assurances 11

California Environmental Quality Act 12

Other Regulatory Matters 12

Reporting Requirements 14

Procedural Matters 14

REQUIREMENTS **14**

A. Discharge Prohibitions 15

B. Discharge Specifications 15

C. Facility Specifications 18

D. Unit Construction Specifications 18
E. Closure & Post-Closure Maintenance Specifications 19
F. Financial Assurances 19
G. Monitoring Requirements 20
H. Reporting Requirements 22
I. Other Provisions 23

ATTACHMENT A—SITE LOCATION MAP 25

ATTACHMENT B—FACILITY MAP 26

ATTACHMENT C—LINER CONSTRUCTION DESIGN 27

STANDARD PROVISIONS & REPORTING REQUIREMENTS 29

A. Applicability 29
B. Terms and Conditions 30
C. Standard Prohibitions 31
D. Standard Discharge Specifications 32
E. Standard Facility Specifications 33
F. Standard Construction Specifications 35
G. Standard Closure and Post-Closure Specifications 40
H. Standard Financial Assurance Provisions 44
I. Standard Monitoring Specifications 44
J. Response to Release 55
K. General Provisions 57
L. Storm Water Provisions 60

INFORMATION SHEET 63

TABLE INDEX

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

Table 2—Groundwater Monitoring Well Network 8

Table 3—Unsaturated Zone Monitoring Network 9

Table 4—Current Fund Balances (Financial Assurances)..... 12

Table 5—Authorized Waste Discharges at Facility 15

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

CAP.....Corrective Action Program

CEQA.....California Environmental Quality Act

COCs .....Constituents of Concern

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.)

DMP .....Detection Monitoring Program

EC .....Electrical Conductivity

EIR .....Environmental Impact Report

EMP .....Evaluation Monitoring Plan

FEMA.....Federal Emergency Management Agency

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 Condensate

MCE .....Maximum Credible Earthquake

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

MDL .....Method Detection Limit

µg/L.....Micrograms per Liter

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

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

TDS.....Total Dissolved Solids

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

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

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. Merced County Regional Waste Management Authority (Discharger) owns and operates the Highway 59 Solid Waste Landfill (Facility), which is located approximately six miles north of City of Merced in Merced County, Section 23 and 24, Township 6 South, Range 13 East, 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 609-acre property comprised of Assessor's Parcel Numbers (APNs) 170-070-001, 170-070-002, 175-050-003, 175-060-001, and 175-060-003. The address associated with the Facility is 7040 N. State Highway 59, Merced, California 95348.

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, corrective action, closure, and post-closure maintenance of the Waste Management Units (WMUs) listed in **Table 1**.

4. The landfill currently contains four closed, unlined Class III WMUs (Phases 1-4) covering a total of approximately 89 acres, one inactive single-composite lined Class III WMU (Phase 5) covering 25 acres, one active single-composite lined Class III WMU (Phase 6) covering 140 acres, two Class II Surface Impoundments, and three storm water retention basins.

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

Unit	Type	Class	Size	Status
Phases 1-4	Landfill	Class III	89 acres	Closed
Phase 5 (Modules 5A-5C)	Landfill	Class III	25 acres	Inactive

Unit	Type	Class	Size	Status
Phase 6 (Phase 6A, 6B1 & 6B2 are constructed) Future Modules 6C-6F	Landfill	Class III	140 acres	Operating
Surface Impoundment #1	Surface Impoundment	Class II	1.2 acres	Operating
Surface Impoundment #2	Surface Impoundment	Class II	2.8 acres	Operating

See Glossary for definitions of terms and abbreviations in table.

Materials Accompanying Order

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

ATTACHMENT A—SITE LOCATION MAP
ATTACHMENT B—FACILITY MAP
ATTACHMENT C—LINER CONSTRUCTION DESIGN

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

Information Sheet for [TENTATIVE] Waste Discharge Requirements Order (Information Sheet)

6. This Order is also accompanied by the concurrently adopted **Monitoring & Reporting Program (MRP) Order R5-2025-XXXX (operative MRP)**, 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).

7. 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.

8. Additional information about the Facility is set forth in the **Information Sheet**. (See Finding 5)

Facility

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

   a. A gatehouse, truck scales, office facilities, and parking area along the west-central portion of the Landfill property.

   b. There is an operations area located between the Phase 1-4 WMUs and Phase 5 WMU that includes miscellaneous out-buildings, maintenance facilities and storage areas.

   c. There are also two Class II Surface Impoundments (SI-1 and SI-2) for leachate containment and three storm water detention ponds situated at various locations within the southern and central portion of the property.

   d. The Phase 1-5 WMUs and Phase 6A Cell are equipped with an active landfill gas (LFG) collection system that collects and conveys LFG to a totally-enclosed vertical ground flare for combustion. The flare station is located near the southwest corner of the Phase 1-4 WMUs.

   e. The groundwater treatment compound is situated north and adjacent to SI-1 that houses treatment equipment associated with the landfills groundwater treatment system.

   f. An active composting facility is also located within the property boundary. *A Notice of Applicability* was issued on 2 November 2022 for the *General Waste Discharge Requirements for Composting Operations, Order WQ 2020-0012-DWQ.*

Waste Classification & Permitting

10. 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 California Code of Regulations, title 27 (Title 27) and in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.

11. On 10 October 2014, the Central Valley Water Board adopted WDRs Order R5-2014-0139, classifying the Facility's WMUs as Class III units for the discharge of non-hazardous solid waste and municipal solid waste. This Order continues such classifications, which are set forth above in **Table 1**.

12. On 7 October 2024, 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.

13. Health and Safety Code, section 25230.1, subdivision (c), defines "treated wood" to mean "wood that has been treated with a chemical preservative for purposes of protecting the wood against attacks from insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 136 et seq.)." This may include but is not limited to wood waste that has been treated with chromated cooper arsenate, pentachlorophenol, creosote, acid copper chromate, ammoniacal copper arsenate, ammoniacal copper zinc arsenate, or chromated zinc chloride.

14. Health and Safety Code, division 20, chapter 6.5, article 11.2 (§ 25230 et seq.) exempts Treated Wood Waste from hazardous waste management requirements (see Health & Saf. Code, ch. 6.5; see Cal. Code Regs., tit. 22, div. 4.5, chs. 12-20 (§ 66262.10 et seq.)) and allows such waste to be discharged to a composite-lined portion of a municipal solid waste landfill that is regulated by WDRs issued pursuant to the Water Code and Title 27. The Dischargers propose to continue discharging **Treated Wood Waste.** This Order continues to authorize the discharge of treated wood waste to composite-lined WMU s specified in **Section B1** and **Table 5**, provided that the Discharger complies with the applicable requirements of Health and Safety Code section 25230 et seq. and these WDRss. Discharges of Treated Wood Waste are allowed in Phases 5 and Phase 6 (6A, 6B1 and B2) and will be allowed in future Modules of Phase 6, which are lined with an engineered alternative composite liner system and are equipped with a leachate collection and removal system (LCRS).

15. The Discharger proposed the acceptance and disposal of dewatered sewage or water treatment sludge away from the public drop-off areas and in the composite-lined WMUs, which are equipped with a LCRS. The dewatered sewage or water treatment sludge would contain 20 percent or more solids by weight (if primary sludge) or at least 15 percent solids (if secondary sludge), have undergone both primary and secondary treatment, and be designated non-hazardous by laboratory analysis, in accordance with Title 27 section 20220, subdivision (c)(1) and (2). In accordance with Title 27 section 20220, subdivision (c)(3), a minimum

solids-to-liquids ratio of 5:1 by weight will be maintained in the sludge/solid waste mixture.

Alternative Daily Cover / Intermediate Cover (Operating Landfill Units)

16. In lieu of the daily cover required per Title 27 section 20680, the Discharger proposes to use an approved alternative daily cover (ADC) (see Title 27, §§ 20690, 20705). ADC that has already been approved by the Local Enforcement Agency (LEA) and is contained in the most recently approved JTD is hereby also approved by the Central Valley Water Board for use at the Facility unless stated otherwise.

17. In accordance with Title 27 section 20705, the 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 operative MRP.

Site Conditions

18. The Facility is in a region of the San Joaquin Valley that is transitional between the agricultural intensive Valley Floor and the Sierra Nevada foothills. The area is typified by undulating, westerly tending slopes and agricultural uses. Regionally, the topography grades from the Sierra Foothills west to the Valley Floor with runoff draining to the San Joaquin River and then north to the Pacific Ocean via the San Francisco Bay. Storm water is retained on-site in retention basins.

19. The San Joaquin Valley consists of typically Pliocene to Holocene aged unconsolidated alluvial plain and fan deposits underlain by alluvial deposits of the Miocene to Pliocene Mehtren Formation. These heterogeneous deposits typically consist of poorly-sorted arkosic clays, silts, sands and gravels with some beds of claystone, siltstone, sandstone and conglomerate derived chiefly from the Sierra Nevada. The local geology of the site, based on materials encountered during on-site drilling activities have consisted of predominantly unconsolidated, poorly-sorted, fine-grained arkosic sediments, which correlate to occurring alluvial deposits. In general, silty/clayey sands dominate and isolated lenses of fine to coarse sands are sporadically located throughout the site. Based on driller’s and/or electric well logs for nearby domestic and irrigation water supply wells, predominantly silty clays and sands were encountered to a depth of 500 feet.

20. Land uses within one mile of the Facility consists of mostly undeveloped to the east and west. Orchard properties border the site to the north, northwest, south

and southwest. The closest residential dwellings to the landfill property are located to the south at distances ranging from approximately 1,250 and 2,300 feet.

21. There are no major surface water bodies immediately adjacent to the landfill. The Henderson Lateral Canal located to the north of Phase 6 has flow regulated at upstream main canal discharge points. Surface drainage at the landfill is controlled by diversion berms, drainage channels, overside drains, and stormwater detention basins. Surface drainage will flow to one or more detention basins. All storm water is retained on-site in three storm water detention basins. According to the Central Valley *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Basin Plan), the beneficial uses of include: water contact recreation (REC-1); non-water contact recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and wildlife habitat (WILD).

22. During the First and Second Quarter 2024 monitoring events, groundwater beneath the Facility was first encountered between approximately 140.37 and 173.17 feet below ground surface (bgs). Groundwater elevations range between 56.49 and 61.83 feet mean sea level (MSL). Depth to groundwater has been historically dynamic and has been steadily declining over the course of the monitoring program, with many wells being replaced.

23. Groundwater beneath the site occurs under unconfined conditions. Historically, groundwater flow direction has been in a southwesterly direction at a hydraulic gradient of approximately 0.001 foot per foot (ft/ft).Previous estimates of the aquifer's hydraulic conductivity range from 3.5×10^{-4} to 2.7×10^{-1} centimeters per second (cm/sec).

24. Construction of a cut-off barrier wall was completed in September 2022 to mitigate seepage on the north cut slope of the Phase 6B-2 expansion. Three piezometers (P-1, P-2, and P-3) were installed to monitor for groundwater diversion from the nearby Henderson Lateral Irrigation Canal around the barrier.

25. 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).

26. There are six domestic wells located within (or just beyond) one mile of the Facility. The landfill has two wells (one domestic and one agricultural) used to provide water for dust control and landscaping at the landfill.

27. 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 San Andreas Fault would result in an MCE with a magnitude of 7.9 and a peak ground acceleration of 0.075 g.

28. Based on data from the nearest weather station, the Facility has an annual average precipitation of 12 inches, and a mean pan evaporation of 69 inches per year. The nearest weather station is reflective of conditions at the Facility.

29. 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 3.43 and 4.80 inches of precipitation, respectively. Source: NOAA Precipitation Frequency Data Server (https://hdsc.nws.noaa.gov/hdsc/pfds).

30. All storm water is retained on-site in three storm water retention basins. One is located at the southwest corner of the Phase 5 area, a second is located at the southeast corner of the Phase 1-4 WMU area, and a third at the southeast corner of the Phase 6. Control measures were implemented to direct all run-off away from active WMUs and operation areas to the storm water retention basins. The retention basins are designed to have sufficient capacity to retain all storm water generated within the Facility boundary and are normally dry during the summer months. Therefore, the previous California General Industrial Storm Water Permit, Order No. 97-DWQ, permitee number 5B24S000444, was terminated 22 March 2013. The retention basins are shown in **Attachment B**.

31. According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (https://msc.fema.gov/portal), the Facility is not located within a 100-year floodplain.

Corrective Action

32. Volatile organic compounds (VOCs) that are not naturally occurring have been detected in groundwater along the point of compliance. The VOCs consistently identified as the primary impact constituents include: tetrachloroethene (PCE), trichlorofluoromethane (Freon 11), and dichlorodifluoromethane (Freon 12).

33. The Discharger submitted the *Evaluation Monitoring Program Report* in November 2010. The nature of the release was demonstrated to be VOCs that appear to have migrated from the unlined area (Phases 1 to 4) of the landfill in the form of landfill gas. Inorganic waste constituents did not appear to have been released from the landfill.

34. The Discharger submitted the *Engineering Feasibility Study* (EFS) and *Corrective Action Plan* (CAP) in July 2011 and December 2012, respectively. The EFS and CAP concluded that the most technically and economically feasible corrective action alternative was to install a dual phase (groundwater and soil gas) extraction and treatment system with LFG extraction as source control.

35. Installation of the dual phase extraction and treatment system was completed in November 2015. The CAP consists of three groundwater extraction wells (RW-1A, RW-3A, and RW-4A), one dual-phase extraction well (RW-2), and three soil gas extraction wells (RW-1G, RW-3, and RW-4). The soil gas extracted from these wells is connected to the existing LFG extraction system terminating at the flare. The extracted groundwater is treated with a granular activated carbon (GAC) treatment system to remove VOCs prior to discharge to either the west or east storm water detention ponds located along the southern property boundary. The system is also equipped with a bypass line that allows for direct discharge of untreated groundwater to one of the lined leachate ponds (SI-1).

Monitoring Networks

36. As of the date of this Order, the Facility's **groundwater** monitoring network consists of the existing and proposed monitoring wells listed in **Table 2**.

Table 2—Groundwater Monitoring Well Network

Well	Program	Status
MW-4C	Background	Operational
MW-8A	Background	Operational
MW-9B	Detection	Operational
MW-10B	Detection	Operational
MW-11B	Detection	Operational
MW-12A	Detection	Operational
MW-19	Detection	Operational
MW-23A	Detection	Operational
MW-30A	Detection	Operational
MW-31A	Detection	Operational

Well	Program	Status
MW-32A	Detection	Operational
MW-15A	Evaluation/Corrective Action	Operational
MW-16B	Evaluation/Corrective Action	Operational
MW-17B	Evaluation/Corrective Action	Operational
MW-18B	Evaluation/Corrective Action	Operational
MW-21A	Evaluation/Corrective Action	Operational
MW-22A	Evaluation/Corrective Action	Operational
MW-20B	Evaluation/Corrective Action	Operational

See Glossary for definitions of terms and abbreviations in table.

37. 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 3**.

Table 3—Unsaturated Zone Monitoring Network

Monitoring Point	Device Type	Monitored Unit	Status
Phase 5 (PL-4)	Pan Lysimeter	Phase 5	Operational
Phase 6A (PL-6A)	Pan Lysimeter	Phase 6A	Operational
Phase 6B (PL-6B)	Pan Lysimeter	Phase 6B	Operational
Surface Impoundment (SI-1)	Pan Lysimeter	SI-1	Operational

See Glossary for definitions of terms and abbreviations in table.

38. As of the date of this Order, there are no **surface water** monitoring requirements for the Facility.

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

Water Quality Protection Standard

40. A WQPS is the analytical framework through which WMUs are individually monitored for releases and impacts to water quality. (Title 27, § 20390, subd. (a).) Under Title 27, a WQPS is separately established for each WMU in WDRs. (*Ibid*.)

41. In accordance with Title 27, this Order, by virtue of its incorporation of the operative MRP and subsequent revisions thereto, establishes a WQPS for each WMU at the Facility.

Unit Construction

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

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

44. The Central Valley Water Board is authorized to approve an **engineered alternative** to Title 27 prescriptive standards (see, e.g., Title 27, § 20330, subd. (c)), provided that the discharger demonstrates that compliance with the prescriptive standard would be unreasonably and unnecessarily burdensome in comparison to the proposed alternative. (Title 27, § 20080, subds. (b), (c); State Water Board Resolution 93-62).

45. The Discharger submitted construction plans for the construction of new WMUs at the Facility, which incorporate an engineered alternative outlined in **Attachment C**.

46. 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. The Discharger has further demonstrated that the proposed engineered alternative(s), as described in **Attachment C**, are consistent with the performance goals of the prescriptive standard, as described above, and will afford at least equivalent water quality protections.

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

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

49. According to the submitted seismic analysis, the proposed new Class III WMUs will be able to withstand MCE and MPE seismic events described in **Finding 27**. (Title 27, § 20370.)

Unit Closures

50. The Discharger completed closure of Phases 1 to 4 with the construction of an engineered alternative (evapotranspirative [ET]) final cover system in 2012. The ET cover design was consistent with the performance goals of the prescriptive standard and affords at least equivalent protection against water impairment. The cover for Phases 1 to 4 consists of the following components, in ascending order: 1) a minimum 24-thick inch foundation layer, the upper 12-inches of which will be compacted during final cover placement; and 2) a minimum 36-inch thick soil monolithic cover layer with low hydraulic conductivity to act as an evapotranspirative layer, the upper six-inches of which will be amended with compost for erosion resistance and to establish vegetative growth.

Post-Closure Maintenance & Financial Assurances

51. The Discharger submitted a January 2008 *Partial Closure and Post-Closure Maintenance Plan* (Partial CPMP) for closure and post-closure maintenance of Phases 1-4. The Partial CPMP is the operative document providing for post-closure maintenance of Phases 1-4 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, subd. (a)(1), 21180, subd. (a).)

52. The JTD contains a *Preliminary Closure and Post-Closure Maintenance Plan* (Preliminary CPMP), which indicates that the Facility's active WMUs will be closed with an engineered alternative final cover system consisting of an ET cover similar to the cover system of Phases 1-4.

53. The Discharger's Preliminary CPMP includes costs estimates for closure (Title 27, §§ 21820, 22206), post-closure maintenance (§§ 22210–22212), and foreseeable corrective action for releases (§§ 22220–22222). As of the date of this Order, these estimates are calculated in accordance with Title 27.

54. This Order requires that the Discharger to maintain financial assurances with CalRecycle in at least the estimated cost amounts reflected in **Table 4**, in accordance with Title 27.

55. As of the date of this Order, the closure fund, post-closure maintenance fund and corrective action fund balances are equal to the estimated cost amounts specified in **Table 4.**

Table 4—Current Fund Balances (Financial Assurances)

Requirement	Current Balance
Closure	$ 3,824,695
Post-Closure Maintenance	$ 15,996,521
Corrective Action	$ 1,200,968

California Environmental Quality Act

56. The Facility has been operating since 1973. In 1996, Merced County prepared an Environmental Impact Report (EIR) pursuant to the requirements of the California Environmental Quality Act (CEQA) to analyze the potentially significant environmental effects associated with a proposed expansion of the Facility. On 13 August 1996, the Merced County Board of Supervisors certified the final EIR for the Phase 6 expansion (SCH # 1994032011).

57. The issuance of this Order, which prescribes requirements and monitoring of waste discharges at an **existing facility**, with negligible or no expansion of its existing use, is exempt from the procedural requirements of CEQA pursuant to California Code of Regulations, title 14, section 15301. The discharges authorized under this Order are substantially within parameters established under prior WDRs, particularly with respect to character and volume of discharges.

Other Regulatory Matters

58. 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.

59. 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.[1] (Wat. Code, § 13241 et seq.)

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

61. 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*.

62. 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.

---

[1] Designated beneficial uses surface water and groundwater are discussed in Finding 21 and Finding 25, respectively.

Reporting Requirements

63. This Order is also issued in part pursuant to Water Code section 13267, subdivision (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 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.

64. The technical reports required under this Order, as well as those required under the operative MRP, are necessary to ensure compliance with these 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.

65. 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

66. 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.

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

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

69. The Central Valley Water Board will review and revise this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that WDRs Order R5-2014-0139 is rescinded, except for enforcement purposes; and that

the Discharger and their agents, employees and successors shall comply with the following:

A. Discharge Prohibitions

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Prohibitions (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 (DTSC) shall be immediately notified of any such discharges in violation of this Order.

2. Except as specifically authorized in **Section B.1** and **Table 5**, "Designated Waste," as defined per Water Code section 13173, shall not be discharged at the Facility.

3. Except as expressly authorized in **Section B.1 and Table 5**, leachate and landfill gas (LFG) condensate shall not be discharged into Facility WMUs.

B. Discharge Specifications

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Discharge Specifications (SPRRs, § D), as well as the following:

1. The Discharger shall discharge waste to Facility WMUs as specified in **Table 5**, subject to the table-specific definitions provided below.

Table 5—Authorized Waste Discharges at Facility

Waste Category	Phase 5	Phase 6	SI-1	SI-2
Hazardous Waste Wastes which, pursuant to Title 22, section 66261.3 et seq., must be managed in accordance with Division 4.5 of Title 22. (Title 27, § 20164; Title 23, § 2521(a).)	No	No	No	No
Municipal Solid Waste (MSW) Wastes subject to 40 C.F.R. part 258. (Title 27, § 20164.)	Yes	Yes	No	No

Waste Category	Phase 5	Phase 6	SI-1	SI-2
Designated Waste (1) Hazardous Wastes subject to a variance from management requirements per Health and Safety Code section 25143; and (2) Nonhazardous Waste 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	Yes	Yes
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	No	No
Landfill Gas Condensate Liquid removed from a gas control system at a landfill and which are produced by the condensation of landfill gas being conveyed by that system. (Title 27, § 20164.)	Return Only	Return Only	Yes	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.)	Return Only	Return Only	Yes	Yes
Asbestos-Containing Waste (>1%) Wastes containing at least 1 percent of non-friable asbestos particles.	No	No	No	No

Waste Category	Phase 5	Phase 6	SI-1	SI-2
Treated Wood Waste Wood treated with chemical preservatives that are: (i) administered for protection against insects, microorganisms, fungi, and other conditions leading to decay; and (ii) registered under the Federal Insecticide, Fungicide and Rodenticide Act. (Title 22, § 67386.4.)	Yes	Yes	No	No
Dewatered Sludge Dewatered sludge or water treatment sludge containing 20 percent or more solids by weight if primary sludge or at least 15 percent solids if secondary sludge, which has undergone both primary and secondary treatment and is designated non-hazardous by laboratory analysis, in accordance with Title 27, §20220(c)(1) and (2).	Yes	Yes	No	No

2. The Discharger shall promptly remove and relocate all waste discharged at the Facility in violation of this Order. If unable to do so, they 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; and proposing waste acceptance program updates to prevent reoccurrences. If the infeasibility is economic, cost estimates shall be provided as part of the report.[2]

3. Treated Wood Waste shall only be discharged to landfill WMUs specified above in **Section B.1** and **Finding 14**. The Discharger shall manage such waste in accordance with Health & Safety Code section 25230 et seq, and otherwise comply with Title 22. In the event of a verified release from an authorized WMU containing treated wood waste, the Discharger shall

[2] Submission of this letter does not constitute approval for discharge. The Central Valley Water Board may direct the removal of waste not authorized under this Order.

suspend all discharges of treated wood waste until corrective action is terminated.

4. For landfill WMUs, the Discharger shall only use the materials described in **Finding 16** as an alternative daily cover (ADC) for landfill WMUs, provided that other materials may be used if approved in writing by the Central Valley Water Board as meeting the standards of Title 27 section 20705.

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

   a. The Discharger demonstrate 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 approves the demonstration in writing.

6. Notwithstanding **Section B.1** and **Table 5**, **Landfill Gas 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 (SPRRs, § E) which are incorporated herein.

D. Unit Construction Specifications

Except as otherwise expressly directed below, the Discharger shall comply with all Standard Construction Specifications and Standard Storm Water Provisions (SPRRs, §§ D, L), as well as the following:

1. Except as authorized in **Section D.2**, the Discharger shall not commence liner construction (other than preparatory earthmoving and grading) until the Central Valley Water Board has Executive Officer has approved in writing all necessary construction plans, specifications and construction quality assurance plans related to the new liner(s).

2. Base liners and slope liners for **new WMUs** listed in **Table 1** shall be constructed according to specifications in **Attachment C**. The Discharger may propose changes to approved liner designs in Attachment C prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner system results in the protection of water quality equal to or greater than the design necessary to meet the requirements of

Title 27 section 20310, and this Order. Proposed changes shall be accompanied by an explanation of how the changes will comply with the preceding criteria. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Central Valley Water Board in revised WDRs. The Discharger shall not implement changes to approved liner designs in Attachment C until the Central Valley Water Board approves of the proposed changes in writing.

3. The Discharger shall submit construction and design plan(s) for review and Executive Officer approval in accordance with Section F of the SPRRs at least 90 days prior to the anticipated start of construction.

4. The Discharger shall submit a final construction certification report for newly constructed WMUs at least 60 days prior to the anticipated commencement of the disposal of waste.

E. Closure & Post-Closure Maintenance Specifications

The Discharger shall comply with all Standard Closure and Post-Closure Specifications (SPRRs, § G) and closure-related Standard Construction Specifications (SPRRs, § F), as well as the following with respect to closure of landfills at the Facility:

1. The Discharger shall submit a final or partial final closure and post-closure maintenance plan (CPMP), design plans, and CQA plan for review and approval at least two years prior to anticipated closure.

F. Financial Assurances

Except as otherwise directed below, the Discharger shall comply with all Standard Financial Assurance Provisions (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 55**, 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 September**.

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, subdivision (c), and include a 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.

G. Monitoring Requirements

Except as otherwise directed below, the Discharger shall comply with all applicable Standard Monitoring Specifications (SPRRs, § I) and Standard Response to Release Specifications (SPRRs, § J), as well as the following:

1. The Discharger shall comply with all provisions of the separately issued operative MRP.

2. The Discharger shall implement the Water Quality Protection Standard (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 (DMP) 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 (CAMP) in accordance with Title 27 sections 20385, 20415, and 20430, and Section I of the SPRRs.

5. The Discharger shall conduct corrective action measures in accordance with the approved CAP. Any modifications to the CAP, or a proposal for an alternative, needs to be approved by the Central Valley Water Board. A proposal to modify the CAP or a proposal for an alternative CAP shall be

submitted at least 90 days prior to the anticipated implementation of the proposed modification or alternative.

6. Corrective action measures may be terminated when the Discharger demonstrates to the satisfaction of the Central Valley Water Board that the concentrations of all waste constituents are reduced to levels below their respective concentration limits throughout the entire zone affected by the release.

7. After suspending the corrective action measures, the Discharger shall demonstrate that the concentration of each waste constituent in each sample from each monitoring point remained at or below its concentration limit for at least three consecutive years, beginning immediately after the suspension of corrective action measures.

8. Upon completion of corrective action, the Discharger shall certify, in writing, that corrective action has been completed in compliance with Title 27 and the WDRs. The certification shall be signed by a California Registered Civil Engineer or Professional Geologist.

9. If at any time, either the Discharger or the Central Valley Water Board determines that the CAP is unsuccessful in remediating waste constituents or that natural attenuation of VOCs in groundwater is unsuccessful (i.e. does not satisfy the provisions of Title 27 section 20430, the Discharger shall, within 90 days of making the determination, or of receiving written notification from the Central Valley Water Board of such determination, submit an amended ROWD for Central Valley Water Board approval, to make appropriate modifications to the CAP that includes a detailed work plan, and/or proposes other alternative correction action methods to remediate COCs in groundwater.

10. At a minimum, a determination that the CAP is unsuccessful in remediating waste constituents may result if one of the following conditions is met:

    a. Waste constituent concentrations in point of compliance groundwater monitoring wells exhibit an increasing trend not originally predicted after implementation of corrective action; or

    b. Point of Compliance groundwater monitoring wells exhibit significant waste constituent concentration increases indicative of a new or renewed release; or

    c. Significant waste constituent concentrations are identified in corrective action groundwater monitoring wells, or off-site agricultural or domestic supply wells; or

d. Waste constituent concentrations are not decreasing at a sufficient rate to meet the remediation objectives.

11. The amended ROWD shall include the following:

a. A discussion as to why existing corrective action measures have been ineffective or insufficient;

b. A revised evaluation monitoring plan, if necessary, to further assess the nature and extent of the release;

c. A discussion of corrective action needs and alternatives;

d. Proposed alternative corrective action measures, as necessary, for: 1) Source control; 2) Groundwater cleanup; and/or 3) Landfill gas control.

e. A plan to monitor the progress of corrective action measures consistent with the operative Monitoring and Reporting Program; and

f. Cost estimates for implementing additional and/or alternative corrective action measures, including monitoring.

12. Within one year of Central Valley Water Board approval of the amended ROWD that determines that the CAP is unsuccessful in remediating waste constituents in groundwater and/or that natural attenuation is unsuccessful in remediating VOCs in groundwater, the Discharger needs to implement a modified or alternative CAP to remediate waste constituents in groundwater.

H. Reporting Requirements

In addition to the 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. 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 CentralValleyFresno@WaterBoards.ca.gov. The following information shall be included in the body of the email:

Attention: Title 27 Unit

Report Title:	[Enter Report Title]
Geotracker Confirmation:	[Enter Confirmation Number]
GeoTracker Upload ID:	L10002455947
Facility:	Highway 59 Solid Waste Landfill
County:	Merced County
CIWQS Place ID:	230368

3. 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. Other Provisions

1. The Discharger shall maintain at the Facility copies of this Order (including all attachments), the operative MRP, and the SPRRs. These materials shall be made available to all operating personnel, who shall be familiar with the contents of such materials.

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

ENFORCEMENT

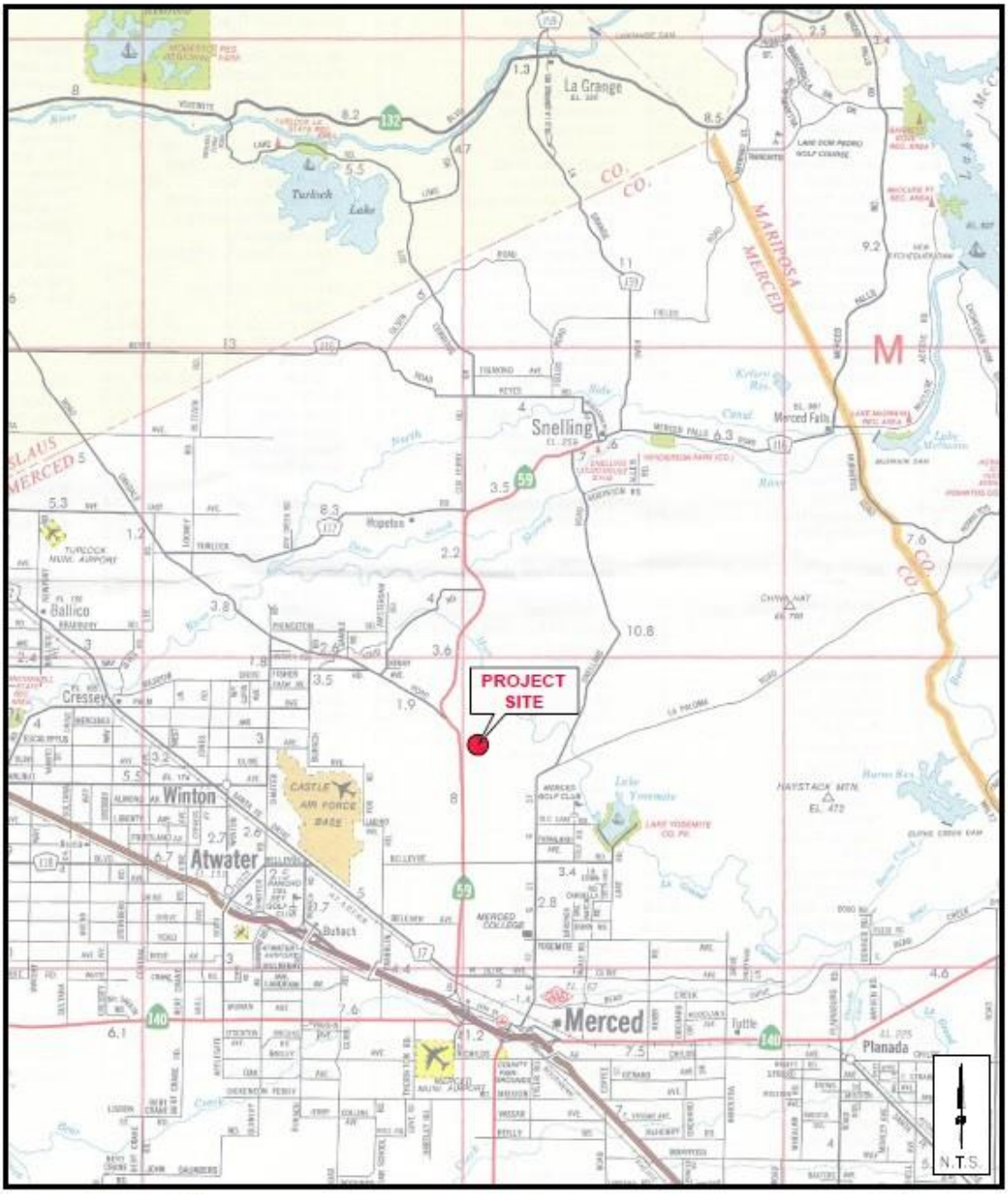
If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. 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



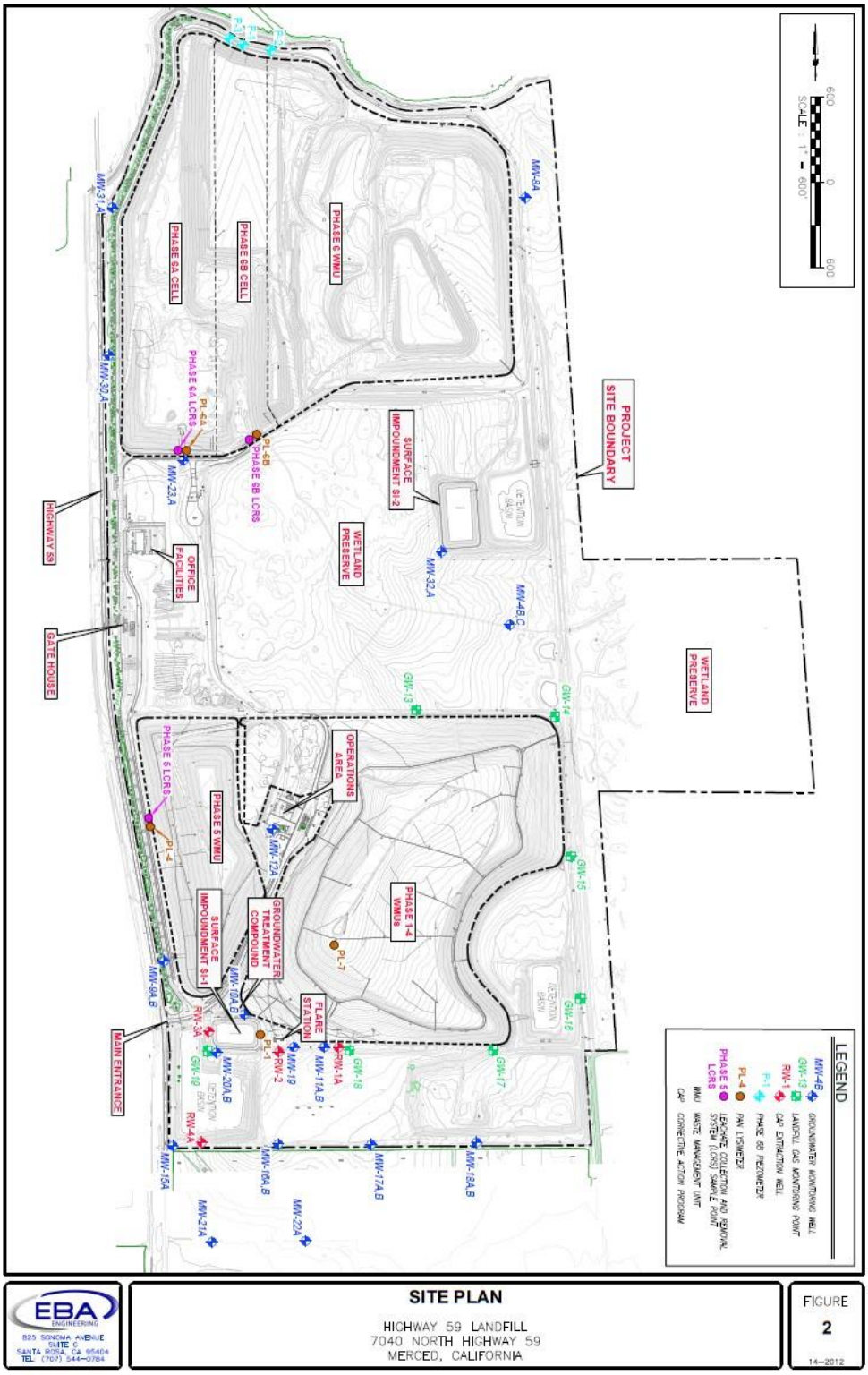
EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 546-0764

LOCATION MAP

HIGHWAY 59 LANDFILL
7040 NORTH HIGHWAY 59
MERCED, CALIFORNIA

FIGURE
1
14—2012

ATTACHMENT B—FACILITY MAP



ATTACHMENT C—LINER CONSTRUCTION DESIGN

The Discharger has adequately demonstrated that construction of a Subtitle D prescriptive standard liner system for Phase 6 would be unreasonably and unnecessarily burdensome when compared to the proposed engineered alternative design. There is no clay source on-site or nearby and the cost of importing clay from off-site or mixing on-site soils with bentonite would cost substantially more than the alternative design. The Discharger has also demonstrated that the proposed engineered alternative is consistent with the performance goals of the prescriptive standard and affords at least equivalent protection against water quality impairment.

The Discharger has proposed the construction of an engineered alternative single composite-liner system for Phase 6. The engineered alternative liner proposed by the Discharger for the bottom liner of the future landfill modules consists of, in ascending order:

- 12-inch subgrade layer recompacted to a hydraulic conductivity not to exceed 1 x 10^{-5} cm/sec or meeting specific compaction and gradation criteria;
- Geosynthetic clay liner (GCL) consisting of a five-mm thick layer of sodium bentonite sandwiched between two geotextiles (bottom geotextile nonwoven);
- 60-mil thick synthetic flexible membrane of high-density polyethylene (HDPE);
- 12-inch gravel leachate drainage layer;
- Nonwoven geotextile filter fabric; and
- 24-inch thick soil operations layer.

The components for the side-slope liners for Phase 6 are to be constructed of the same materials and in the same sequence and manner as the bottom liner system, but without the 12-inch gravel drainage layer and nonwoven geotextile filter fabric. The side-slope subgrade will be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a surface that is smooth and free from rocks, sticks, and other debris that could damage or otherwise limit the performance of the geosynthetic clay layer and/or geomembrane, and certified in accordance with this Order and the approved *Construction Quality Assurance Plan*.

The proposed leachate collection and removal system includes a minimum 12-inch thick drainage layer composed of granular material with a minimum hydraulic conductivity of 0:3 centimeters per second (cm/sec). The design leachate flow volume is 4.4 gallons per minute.

The proposed vadose zone monitoring system includes geomembrane-lined pan lysimeters installed beneath the leachate collection and removal system collection pipes and sumps. A pan lysimeter will be installed beneath the liner system for the purpose of vadose zone sampling. The pan lysimeter will consist of the following:

- An underlying 60-mil HDPE liner on a prepared subgrade below the leachate sump(s) and a length of the leachate collection and removal system troughs; and
- Perforated or slotted three-inch diameter HDPE piping encased in drainage gravel.

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)]. [paste SPRRs here]

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

[TENTATIVE] WASTE DISCHARGE REQUIREMENTS ORDER R5-2025-XXXX
FOR
MERCED REGIONAL WASTE MANAGEMENT AUTHORITY
HIGHWAY 59 SOLID WASTE LANDFIL

INFORMATION SHEET

Merced County Regional Waste Management Authority Discharger) owns and operates the Highway 59 Solid Waste Landfill (Facility), which is located approximately six miles north of City of Merced in Merced County, Section 23 and 24, Township 6 South, Range 13 East, Mount Diablo Base and Meridian (MDB&M). The Facility is situated on a 609-acre property comprised of Assessor's Parcel Numbers (APNs) 052-150-004, 052-070-006, 052-150-006, 052-160-033, and 052-160-035. The address associated with the Facility is 7040 N. State Highway 59, Merced, California 95348.

The landfill currently contains four closed, unlined Class III WMUs (Phases 1-4) covering a total of approximately 89 acres, one inactive single-composite lined Class III WMU (Phase 5) covering 25 acres, one active single-composite lined Class III WMU (Phase 6) covering 140 acres, two Class II Surface Impoundments, and three storm water retention basins.

During the First and Second Quarter 2024 monitoring events, groundwater beneath the Facility was first encountered between approximately 140.37 and 173.17 feet below ground surface (bgs). Groundwater elevations range between 56.49 and 61.83 feet mean sea level (MSL). Depth to groundwater has been historically dynamic and has been steadily declining over the course of the monitoring program, with many wells being replaced. Groundwater beneath the site occurs under unconfined conditions. Historically, groundwater flow direction has been in a southwesterly direction at a hydraulic gradient of approximately 0.001 foot per foot (ft/ft). Previous estimates of the aquifer's hydraulic conductivity range from 3.5×10^{-4} to 2.7×10^{-1} centimeters per second (cm/sec).

Based on data from the nearest weather station, the Facility has an annual average precipitation of 12 inches, and a mean pan evaporation of 69 inches per year. The nearest weather station is reflective of conditions at the Facility.

All storm water is retained on-site in three storm water retention basins. One is located at the southwest corner of the Phase 5 area, a second is located at the southeast corner of the Phase 1-4 WMU area, and a third at the southeast corner of the Phase 6. Control measures were implemented to direct all run-off away from active WMUs and operation areas to the storm water retention basins. The retention basins are designed to have sufficient capacity to retain all storm water generated within the Facility boundary and are normally dry during the summer months.

Volatile organic compounds (VOCs) that are not naturally occurring have been detected in groundwater along the point of compliance. The VOCs consistently identified as the primary impact constituents include: tetrachloroethene (PCE), trichlorofluoromethane (Freon 11), and dichlorodifluoromethane (Freon 12). The Discharger submitted the *Evaluation Monitoring Program Report* in November 2010. The nature of the release was demonstrated to be VOCs that appear to have migrated from the unlined area (Phases 1 to 4) of the landfill in the form of landfill gas. Inorganic waste constituents did not appear to have been released from the landfill. The Discharger submitted the *Engineering Feasibility Study* (EFS) and *Corrective Action Plan* (CAP) in July 2011 and December 2012, respectively. The EFS and CAP concluded that the most technically and economically feasible corrective action alternative was to install a dual phase (groundwater and soil gas) extraction and treatment system with landfill gas extraction as a source control.

The dual phase extraction and treatment system was completed in November 2015. The CAP consists of three groundwater extraction wells (RW-1A, RW-3A, and RW-4A), one dual-phase extraction well (RW-2), and three soil gas extraction wells (RW-1G, RW-3, and RW-4). The soil gas extracted from these wells is connected to the existing LFG extraction system terminating at the flare. The extracted groundwater is treated with a granular activated carbon (GAC) treatment system to remove VOCs prior to discharge to either the west or east storm water detention ponds located along the southern property boundary. The system is also equipped with a bypass line that allows for direct discharge of untreated groundwater to one of the lined leachate ponds (SI-1).

Construction of a cut-off barrier wall was completed in September 2022 to mitigate seepage on the north cut slope of the Phase 6B-2 expansion. Three piezometers (P-1, P-2, and P-3) were installed to monitor for groundwater diversion from the nearby Henderson Lateral Irrigation Canal around the barrier.