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[TENTATIVE] MONITORING & REPORTING PROGRAM (MRP)
R5-2022-00XX



ORDER INFORMATION

Order Type(s):	Monitoring & Reporting Program (MRP)
Status:	TENTATIVE
Program:	Title 27 Discharges to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	Recology
Facility:	Recology Hay Road Landfill
Address:	6426 Hay Road, Vacaville, CA 95687
County:	Solano County
Parcel Nos.:	42-020-02, 42-020-06, 42-020-28
WDID:	5A480300001
Prior Order(s):	R5-2016-0056

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 XX Month 2022.

PATRICK PULUPA,
Executive Officer

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GLOSSARY

AMR	Annual Monitoring Report
CalRecycle	California Department of Resources Recycling and Recovery
CAMP	Corrective Action Monitoring Program
C.F.R.....	Code of Federal Regulations
CIWQS	California Integrated Water Quality System Project
COCs	Constituents of Concern
DMP	Detection Monitoring Program
DWR.....	California Department of Water Resources
EC	Electrical Conductivity
ELAP	State Water Board's Environmental Laboratory Accreditation Program (formerly administered by California Department of Public Health)
EMP	Evaluation Monitoring Program
EW	Extraction Well
Five-Year COCs	Five-Year Constituents of Concern
GeoTracker	State Water Board's Data Management System for Sites with Potential Groundwater Impact
GP.....	Gas Probe
LCRS.....	Leachate Collection and Removal System
LF	Landfill
LFG	Landfill Gas
MDL.....	Method Detection Limit

Method TO-15 VOCs.....	Volatile Organic Compounds associated with USEPA Method TO-15
MRP	Monitoring and Reporting Program
MSW	Municipal Solid Waste
MSWLF	Municipal Solid Waste Landfill
N/A	Not Applicable
PID	Photo Ionization Detector
POC	Point of Compliance for Water Quality Protection Standard
QA/QC.....	Quality Assurance/Quality Control
Qualified Professional	Professional Civil Engineer or Geologist licensed by the State of California
RCRA	Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.
RL.....	Reporting Limit
ROWD / JTD	Report of Waste Discharge / Joint Technical Document
SCAP	Sample Collection and Analysis Plan
SGP.....	Soil Pore Gas
SI.....	Surface Impoundment
SMR	Semiannual Monitoring Report
SPRRs / Standard Provisions	Standard Provisions and Reporting Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 Municipal Solid Waste Facilities, December 2015 Edition
TDS	Total Dissolved Solids

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
WQPS	Water Quality Protection Standard

UNITS

ft ³ / min	Cubic Feet per Minute
°F	Degrees Fahrenheit
Gallons/Day.....	Gallons per Day
mg/L	Milligrams per Liter
µg/L.....	Micrograms per Liter
µmhos/cm.....	Microsiemens per Centimeter
µg/cm ³	Micrograms per Cubic Centimeter
NTUs	Nephelometric Turbidity Units
% Vol.....	Percent by Volume
Inches Hg	Inches of Mercury (Barometric Pressure)
MM Hg Vacuum	Millimeters of Mercury (Barometric Pressure)

PREFACE

Adopted by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) pursuant to Water Code section 13267, subdivision (b)(1), this Order establishes a Monitoring and Reporting Program (MRP) for Recology (Discharger), which owns and operates the Recology Hay Road Landfill (Facility) in Solano County. This MRP incorporates requirements for groundwater, surface water, and unsaturated zone monitoring and reporting; facility monitoring, maintenance, and reporting contained in California Code of Regulations, Title 27, section 20005, et seq. (hereafter Title 27); Waste Discharge Requirements (WDRs) Order R5-2022-00XX; Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27, dated May 2018 (MSW Landfill SPRRs); and Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Industrial Facilities Regulated by Title 27, dated April 2016 (Industrial SPRRs). Compliance with this MRP is ordered by the WDRs and the Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer. Additional information regarding the Facility is set forth in the enumerated findings of Waste Discharge Requirements Order R5-2022-XXXX (WDRs Order). Except as otherwise provided in the following MRP, these findings are incorporated herein.

The MRP also contains supplemental findings related to monitoring and reporting activities, and/or Facility conditions. For the purposes of California Code of Regulations, title 27 (Title 27) (e.g., §§ 21720, 20380-20435), the findings and provisions of this Order are conversely incorporated as part of the WDRs Order as well.

Although adopted with the WDRs Order, this is a separate order subject to subsequent revision by the Executive Officer in accordance with delegated authority per Water Code section 13223. For the purposes of Title 27, such revisions shall be automatically incorporated as part of the WDRs Order.

Except as otherwise provided in the following Revised MRP, these findings are incorporated herein. The Revised MRP also contains supplemental findings related to monitoring and reporting activities, and/or Facility conditions. For the purposes of California Code of Regulations, title 27 (Title 27) (e.g., §§ 21720, 20380-20435), the revised findings and provisions of this Order are conversely incorporated as part of the WDRs Order as well.

MONITORING & REPORTING PROGRAM

IT IS HEREBY ORDERED, pursuant to Water Code section 13267: that all previously issued Monitoring and Reporting Program(s) for the discharge of solid waste at the Facility are rescinded (except for enforcement purposes); and that the Discharger, their agents, employees and successors shall comply with the following Monitoring and Reporting Program (MRP). The Discharger shall not implement any changes until a revised MRP is issued by the Central Valley Water Board or its Executive Officer.

The Discharger shall monitor all classified units (i.e., landfill, waste pile, and land treatment units) and the compost ponds at the site in accordance with the detection and corrective action monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone. Monitoring shall also be in accordance with the Standard Monitoring Specifications in Section I of the SPRRs and the Monitoring Specifications in Section J of the WDRs. All monitoring shall be conducted in accordance with the most recently approved Sample Collection and Analysis Plan which includes quality assurance/quality control standards. The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

All compliance monitoring points established for detection and/or corrective action monitoring shall constitute the monitoring points for the Water Quality Protection Standard. All groundwater monitoring wells, unsaturated zone monitoring devices, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) listed in the corresponding tables and Attachments A-F of this MRP.

While this MRP assigns monitoring points to background, detection, and corrective action monitoring programs, it is acknowledged that these designations may change over time pending the appropriate approval from the Regional Water Board.

A. General Provisions

1. Incorporation of Standard Provisions

The Discharger shall comply with all relevant provisions of the *Standard Provisions and Reporting Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27 Municipal Solid Waste Facilities, December 2015 Edition* (SPRRs or Standard Provisions), which are incorporated herein. See, e.g., SPRRs section I (*Standard Monitoring Specifications*) and section J (*Response to Release*).

2. Monitoring Provisions in WDRs Order

The Discharger shall comply with all “Monitoring Provisions” in the Facility’s operative Title 27 WDRs Order, which are also incorporated herein.

3. Compliance with Title 27

The Discharger shall comply with all of Title 27 provisions as they pertain to activities described in this MRP (including SPRRs).

4. Sample Collection and Analysis Plan (SCAP)

All samples shall be collected, preserved and transported in accordance with the approved Sample Collection and Analysis Plan (SCAP) and the Quality Assurance/Quality Control (QA/QC) standards specified therein. The Discharger may use alternative analytical test methods (including new USEPA-approved methods), provided that the alternative methods have method detection limits (MDLs) equal to or lower than the analytical methods specified in this MRP and are identified in the approved SCAP.

B. Detection Monitoring Program (DMP)

To detect a release at the earliest possible time (see Title 27, § 20420, subd. (b)), the Discharger shall implement a Detection Monitoring Program (DMP) for groundwater, surface water and the unsaturated zone in accordance with the provisions of Title 27, particularly sections 20415 and 20420. These groundwater monitoring systems shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. Groundwater, unsaturated zone and surface water detection monitoring networks shall be revised (as needed) with the construction of each new landfill cell or module.

Historical releases from the units at the site have generally been limited to landfill gas, nitrate-N in groundwater, and VOC-impacted pan lysimeter liquid. This MRP therefore places all units at the site in concurrent detection and corrective action monitoring.

Also, units and/or modules that are contiguous with each other relative to the groundwater flow direction (e.g., LF-1; and LF-2 and LF-3) have generally been placed in contiguous monitoring in accordance with Title 27, section 20415(e)(3).

1. Groundwater

Groundwater samples shall be collected at least semiannually in all wells, including any future wells added as part of the groundwater monitoring system. The Discharger shall collect, preserve, and transport groundwater

samples in accordance with the currently-approved Sample Collection and Analysis Plan.

Background, detection, and corrective action monitoring data analysis shall be conducted consistent with the statistical and non-statistical data analysis methods described in Title 27 Section § 20415(e).

a. Required Network

The Facility’s groundwater monitoring well network consists of the wells listed in **Table 1**.¹ As of the date of this Order, the network the requirements of Title 27. (Title 27, § 20415, subd. (b).)

Table 1—Groundwater Monitoring Network

Well	Program	Monitored Unit
G-7	Background	LF-1
G-8	Background	LF-1
P-1	Background	LF-1
G-9	POC	LF-1
G-10U ²	POC	LF-1
G-60A	POC	LF-1
MW-4	POC	LF-1
G-9A ²	POC	LF-1
G-10M ²	POC	LF-1
G-10R ²	POC	LF-1
4BR	Background	LF-2/3
G-59	Background	LF-2/3
G-11 ²	POC	LF-2/3
G-11M ²	POC	LF-2/3
G-27 ²	POC	LF-2/3
G-27A ²	POC	LF-2/3
G-58	POC	LF-2/3
G-2	DMP	LF-2/3
G-11R	DMP	LF-2/3

¹ Non-background monitoring wells at the Point of Compliance constitute “Monitoring Points” for purposes of the Water Quality Protection Standard (WQPS).

Well	Program	Monitored Unit
G-12 ⁴	DMP	LF-2/3
D-4	DMP	LF-1, LF-2/3
G-10	DMP	LF-1, LF-2/3
G-35	DMP	LF-1, LF-2/3
G-36	DMP	LF-1, LF-2/3
G-37	DMP	LF-1, LF-2/3
G-50	DMP/CAMP	LF-1, LF-2/3
G-50A	DMP/CAMP	LF-1, LF-2/3
G-50B	DMP/CAMP	LF-1, LF-2/3
G-52A	DMP/CAMP	LF-1, LF-2/3
MW-4	DMP	LF-1, LF-2/3
G-17	Background	LF-4
G-4R	Background	LF-4, WP-9.1A
G-18	Background	LF-4
G-16R	POC	LF-4
G-25 ³	POC	LF-4
G-25R ³	POC	LF-4
G-28 ³	POC	LF-4
G-28R ³	POC	LF-4
G-29 ³	POC	LF-4
G-29R ³	POC	LF-4
G-30 ³	POC	LF-4
G-30R ³	POC	LF-4
G-53	POC	LF-4
G-54	POC	LF-4
G-56	POC	LF-4
G-57	POC	LF-4
D-7	DMP	LF-4
G-32	DMP	LF-4
G-17	Background	WP-9.1A
CP-1S	POC	WP-9.1A
CP-1D	POC	WP-9.1A
CP-4S	POC	WP-9.1A
CP-4D	POC	WP-9.1A
CP-2S	DMP	WP-9.1A
CP-2D	DMP	WP-9.1A

Well	Program	Monitored Unit
CP-3S	DMP	WP-9.1A
CP-3D	DMP	WP-9.1A
D-2	DMP	WP-9.1A
G-51A	DMP/CAMP	LF-2/3, LF-4, WP-9.1A
G-52	DMP/CAMP	LF-2/3, LF-4, WP-9.1A
MW-6 ⁴	DMP	General
MW-8 ⁴	DMP	General
MW-92-1	DMP	General

See Glossary for definitions of terms and abbreviations in table.

Table Notes:

1. Non-background monitoring wells at the Point of Compliance constitute “Monitoring Points” for purposes of the Water Quality Protection Standard (WQPS).
2. Shallowest wells G-9, G-10U, G-11, and G-27 will be sampled if there is sufficient water. If these wells are dry, then the corresponding next deeper well (G-9A, G10M, G-11M, and G-27A) will be sampled, if there is sufficient water. If these corresponding deeper wells are also dry, then, if available, the next deeper well (G10R and G-11R) will be sampled.
3. Existing wells G-25, G-28, G-29, or G-30 will only be sampled if a concentration limit is exceeded at the corresponding upgradient replacement well.
4. Groundwater elevation must be recorded, but sampling is only required if there is evidence of a release from upgradient wells.

b. Sample Collection and Analysis

Groundwater samples shall be collected from each well and analyzed for Monitoring Parameters listed in **Table 2** (Physical Parameters) and **Table 3** (Constituent Parameters), in accordance with the specified schedule for each parameter. (Title 27, § 20420, subs. (e)-(f).)

Table 2—Groundwater Detection Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Temperature	TEMP	°F	Semiannual	Semiannual
Electrical Conductivity	SC	µmhos/cm	Semiannual	Semiannual
pH	PH	pH Units	Semiannual	Semiannual
Turbidity	TURB	NTUs	Semiannual	Semiannual

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

Table 3—Groundwater Detection Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
TDS	TDS	mg/L	Semiannual	Semiannual
Specific Conductance	COND	umhos/cm	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate	CACO3	mg/L	Semiannual	Semiannual
Bicarbonate	BICACO3	mg/L	Semiannual	Semiannual
Sulfate	SO4	mg/L	Semiannual	Semiannual
Calcium (dissolved)	CA	mg/L	Semiannual	Semiannual
Magnesium (dissolved)	MG	mg/L	Semiannual	Semiannual
Potassium (dissolved)	K	mg/L	Semiannual	Semiannual
Sodium (dissolved)	NA	mg/L	Semiannual	Semiannual
Nitrate-N	NO3N	mg/L	Semiannual	Semiannual
Ammonia-Nitrogen	NH3	mg/L	Semiannual	Semiannual
Total Kjeldahl Nitrogen	CALCN	mg/L	Semiannual	Semiannual
Arsenic (dissolved)	AS	ug/L	Annual	Annual
Iron (dissolved)	FE	ug/L	Annual	Annual
Lead (dissolved)	PB	ug/L	Annual	Annual
Manganese (dissolved)	MN	ug/L	Annual	Annual
Copper (dissolved)	CU	ug/L	Annual	Annual
Total Chromium (dissolved)	CR	ug/L	Annual	Annual

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
VOCs (Attachment C)	(various)	µg/L	Semiannual	Semiannual
1,2,3-Trichloropropane per Method SRL-524M- TCP	TCPR123	µg/L	Every 2 Years	Every 2 Years
<i>Constituents of Concern</i>	---	---	Every 5 years	Every 5 years

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A

c. Five-Year COCs

The Discharger shall analyze for groundwater samples from each well for the Five-Year Constituents of Concern (Five-Year COCs) listed in Table 4. Five-Year COCs were last monitored in 2020, and shall be analyzed again in 2025. (Title 27, § 20420, subd. (g).) The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

Table 4—Groundwater Detection Monitoring, Five-Year COCs

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Freq.
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	(various)	µg/L	Every 5 Years
VOCs (Attachment C)	(various)	µg/L	Every 5 Years
Semi-Volatile Organic Compounds (Attachment D)	(various)	µg/L	Every 5 Years
Chlorophenoxy Herbicides (Attachment E)	(various)	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	(various)	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

d. Groundwater Conditions

Each quarter, the Discharger shall monitor the Groundwater Conditions specified in **Table 5**, with the result of such monitoring being reported semiannually per **Section E.1.**² (Title 27, § 20415, subd. (b)(1).)

Table 5—Groundwater Detection Monitoring, Groundwater Conditions

Groundwater Condition	GeoTracker Code	Units	Monitoring Freq.	Reporting Freq.
Elevation (Well-Specific)	ELEV	Feet & 100ths, NADV 88	Quarterly	Semiannually
Gradient	(none)	ft/ft	Quarterly	Semiannually
Flow Rate	(none)	ft/day	Quarterly	Semiannually

e. Groundwater Conditions

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

² This information shall be determined separately for: (1) the uppermost aquifer; (2) any zones of perched water; and (3) any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report. (Title 27, § 20415, subd. (e)(15).)

f. Waste to Groundwater Separation

Monitoring of the groundwater elevation, including capillary fringe, as applicable, shall be conducted at the piezometers installed outside the liner system and adjacent to the primary LCRS sump at locations that allow for measurement of the groundwater elevation. The piezometers associated with DMs-3.1 and 3.3 sumps, as well as the three or more piezometers to be installed around DM-1 and all additional piezometers installed as part of Time Schedule Item I.12 of the WDRs, shall be monitored daily during the wet season from October 15 to March 30 and weekly during the dry season from April 1 to October 14. Other piezometers installed adjacent to shall be monitored weekly during the wet season from October 15 to March 30 and monthly during the dry season from April 1 to October 14. Reporting of this groundwater elevation and separation data of each unit shall include the highest and lowest recorded groundwater elevations (and corresponding groundwater separation data) during each quarter of the reporting period and, time periods in which the required separation was not maintained, including capillary fringe, as applicable.

2. Unsaturated Zone

The discharger shall operate and maintain an unsaturated zone detection and corrective action monitoring system that complies with the applicable provisions of title 27, sections 20415 and 20420. Unsaturated zone monitoring at the facility shall include both soil pore liquid monitoring and soil pore gas monitoring. Samples shall be collected at least semiannually in all monitoring devices, including any future monitoring devices added to the soil pore liquid or soil pore gas monitoring systems. Soil pore liquid and gas monitoring shall be accomplished by monitoring pan lysimeters installed in the capillary break layer beneath the LCRS sumps of title 27 classified units at the site (i.e., landfills and waste pile). Soil pore gas monitoring shall be further accomplished by monitoring gas monitoring probes installed along or near the perimeter of the classified units at the site. The Discharger shall install unsaturated zone monitoring devices (after review and approval by Central Valley Water Board staff) each time the landfill constructs a new cell or module.

Unsaturated zone samples shall be collected from the monitoring networks listed below and analyzed for the parameters and

constituents listed in the monitoring schedules listed below in accordance with the specified methods and frequencies.

a. Required Monitoring Network

The Facility's unsaturated zone monitoring network consists of the lysimeter (LYS) and landfill gas (LFG) monitoring points specified in **Tables 6 and 7**. As of the date of this Order, the network does not meet the requirements of Title 27. (Title 27, § 20415, subd. (d).) Additional unsaturated zone monitoring devices installed as required by the WDRs should be monitored, sampled, and reported the same as the devices listed below.

Table 6— Soil Pore Liquid Monitoring Network

Monitoring Point	Type	Program	Monitored Unit
VZ-2.1 ¹	Suction Lysimeter	Detection	DM-2.1
PL-2.2A	Pan Lysimeter	Detection	DM-2.2A
PL-2.2B	Pan Lysimeter	Detection	DM-2.2B
WPL-3.1 ¹	Welded Pan Lysimeter	Detection	DM-3.1
WPL-3.2 ¹	Welded Pan Lysimeter	Detection	DM-3.2
WPL-3.3 ¹	Welded Pan Lysimeter	Detection	DM-3.3
WPL-4.1 ¹	Welded Pan Lysimeter	Detection	DM-4.1, 4.2, 4.3
PL-5.1A	Pan Lysimeter	Detection	DM-5.1
PL-5.1B	Pan Lysimeter	Detection	DM-5.1
WPL-5.2 ¹	Welded Pan Lysimeter	Detection	DM-5.2
WPL-6.1 ¹	Welded Pan Lysimeter	Detection	DM-6.1, 6.2
WPL-7 ¹	Welded Pan Lysimeter	Detection	DM-7.1, 7.2
WPL-9 ¹	Welded Pan Lysimeter	Detection	DM-9.1
PL-11.1	Pan Lysimeter	Detection	DM-11.1
PL-11.2	Pan Lysimeter	Detection	DM-11.2
PL-9.1A	Pan Lysimeter	Detection	WP-9.1A

See Glossary for definitions of terms and abbreviations in table.

Table Notes:

1. Suction lysimeter VZ-2.1 has not functioned since 2010.
2. Welded pan lysimeters were installed on site as unsaturated zone monitoring devices, but due to their design they are completely sealed off from the unsaturated zone and therefore do not function in that capacity. However they are required to be monitored by this MRP as liquid containing VOCs has been detected in many of them which indicates a potential failure of the containment system.

Table 7—Soil Pore Gas Monitoring Network

Unit(s)	Monitoring Point ¹	Type	Program	Completion
LF-1	GPs-1, 9, 12 & 21S	Facility	Detection	Shallow
	GP-21D	Probe		Deep
	GPs-2 & 7	Unit Probe	Corrective Action	Shallow
	---			Deep
LF-2 & LF-3	GPs-6,10,11, 18, 19, & 20S	Facility Probe	Detection	Shallow
	20D			Deep
	GPs-3A, 4A & 5A	Unit Probe	Corrective Action	Shallow
	GPs-3B, 4B & 5B			Deep
	PLs-2.2A, 2.2B, 11.1 & 11.2	Lysimeter		Capillary Break
LF-4	GP-13,14,15,17, 22	Facility Probe	Detection	Shallow
	G-23, 24, 25, 26, 27			Shallow and Deep
	---	Unit Probe	Corrective Action	Shallow
	---			Deep
	PLs-5.1A&B	Lysimeter		Capillary Break
	PL-7	Lysimeter	Detection	Capillary Break

Table Note:

1. Monitoring shall include any future gas wells installed along the facility or unit perimeter.

b. Soil Pore Gas (SPG) Monitoring

Soil Pore Gas (SPG) shall be monitored for Methane and Method TO-15 VOCs³ in accordance with **Table 8**, provided that samples may be prescreened to determine if such analyses will be required.⁴ (Title 27, § 20420, subds. (e)-(f).)

³ Volatile Organic Compounds associated with USEPA Method TO-15.

⁴ A gas analyzer for methane concentrations or a Photo Ionization Detector (PID) for total VOCs concentrations may be used. If methane concentrations exceed 1 percent by volume OR organic vapors (total VOCs) exceed 1 ppm, a gas sample shall be obtained

**Table 8—Unsaturated Zone Detection Monitoring (Soil Pore Gas),
 Constituent Parameters**

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Method TO-15 VOCs	(various)	µg/cm ³	Quarterly	Semiannual
Methane	CH4	%	Quarterly	Semiannual
Carbon Dioxide	CO2	%	Quarterly	Semiannual
Oxygen	OXYGEN	%	Quarterly	Semiannual
Organic Vapors ¹	(none)	ppm	Quarterly	Semiannual

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

Table Note:

1. Total organic vapors shall be measured using a photoionization detector (PID) meter calibrated to a hexane standard or other straight-chain, fuel-related hydrocarbon. Conversion to benzene- equivalents shall be conducted using a response factor for benzene provided by the manufacturer.

c. Monthly Lysimeter Inspection

Pan lysimeters shall be inspected monthly for the presence of liquid, which shall then be analyzed for the Monitoring Parameters in **Table 9** (Physical Parameters) and **Table 10** (Constituent Parameters). (Title 27, § 20420, subds. (e)-(f).) If liquid is detected in a previously dry pan lysimeter, the Discharger shall notify Central Valley Water Board staff **within seven days** of the detection. Any liquid confirmed to be present in a unsaturated zone monitoring device per Section A.2.a.iii below (i.e., a release), including ongoing or intermittent (e.g., seasonal) detections, shall be sampled at least semiannually for the field and monitoring parameters listed in Table 9 below. (More frequent monitoring may be required under an approved Evaluation Monitoring Program or Corrective Action

and analyzed for VOCs using Method TO-15. Both the screening results and lab analysis results shall be reported. Otherwise, the methane or total VOC screening results shall be reported, and no further lab analysis will be required.

Program). Thereafter, upon written approval by Board staff, pan lysimeter sampling and analysis at the module may revert to an annual schedule using the applicable test methods for each constituent listed in Appendix 1 attached to this Order.

Table 9—Soil Pore Liquid Monitoring Physical Parameters and Schedule

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Presence of Liquid	<i>(none)</i>	<i>(none)</i>	Monthly	Semiannual
Volume of Removed Liquid	<i>(none)</i>	Gallons	Monthly	Semiannual
Electrical Conductivity	SC	µmhos/cm	Semiannual	Semiannual
pH	PH	pH Units	Semiannual	Semiannual

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

Table 10—Soil Pore Liquid Monitoring Constituent Parameters and Schedule

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
TDS	TDS	mg/L	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate	CACO3	mg/L	Semiannual	Semiannual
Bicarbonate	BICACO3	mg/L	Semiannual	Semiannual
Sulfate	SO4	mg/L	Semiannual	Semiannual
Calcium (dissolved)	CA	mg/L	Semiannual	Semiannual
Magnesium (dissolved)	MG	mg/L	Semiannual	Semiannual
Potassium (dissolved)	K	mg/L	Semiannual	Semiannual
Sodium (dissolved)	NA	mg/L	Semiannual	Semiannual

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Nitrate-N	NO3N	mg/L	Semiannual	Semiannual
Ammonia-Nitrogen	NH3	mg/L	Semiannual	Semiannual
Total Kjeldahl Nitrogen	CALCN	mg/L	Semiannual	Semiannual
Arsenic (dissolved)	AS	ug/L	Semiannual	Semiannual
Total Chromium (dissolved)	CR	ug/L	Semiannual	Semiannual
Iron (dissolved)	FE	ug/L	Semiannual	Semiannual
Lead (dissolved)	PB	ug/L	Semiannual	Semiannual
Manganese (dissolved)	MN	ug/L	Semiannual	Semiannual
Copper (dissolved)	CU	ug/L	Annual	Annual
VOCs (Attachment C)	(various)	µg/L	Semiannual	Semiannual
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	Every 2 Years	Every 2 Years

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

d. Confirmation of a Release

If liquid is detected at a lysimeter in detection monitoring (e.g., a historically dry lysimeter), the Discharger shall verbally notify Central Valley Water Board staff within seven days and immediately sample and test the liquid for the Field and Monitoring Parameters listed in Tables 9 and 10 above. In the event that a release is tentatively indicated, the Discharger shall proceed with confirmation sampling under the Landfill (Standard Monitoring Specifications G.46 and G.47) and Industrial (Standard Monitoring Specifications G.44 and G.45) SPRRs, as applicable to a given unit (i.e., landfill or waste pile). The Discharger shall also consider whether the detection of the liquid in the lysimeter constitutes significant physical evidence of a release under the Landfill (Standard Monitoring Specification G.48) and Industrial (Standard Monitoring Specification G.46, respectively). See also Title 27,

Section 20385(a)(3). Upon confirmation of a release to the unsaturated zone, the Discharger shall identify the type of soil pore liquid detected in the pan lysimeter using the procedures and sample analysis profiles provided in the updated Sample Collection and Analysis Plan and follow the Response to Release requirements of the WDRs and SPRR. The confirmation of leachate in a pan lysimeter may also trigger the need to de-water the module per WDR Facility Specification C.1.

Confirmation of a gas release (i.e., LFG) to the unsaturated zone shall be conducted consistent with the procedures applicable to a gas leak described in Section 4.c.ii, herein, and, upon Central Valley Water Board staff approval of the report of findings submitted thereunder, constitute physically significant evidence of a release under the Landfill and Industrial SPRRs, as applicable. Upon confirmation of a gas release, the Discharger shall implement appropriate short term and long-term corrective action measures consistent with the Correction Action Specifications and the Response to Release requirements of the applicable SPRRs.

e. Five-Year COCs

Every five years, liquid from each pan lysimeter shall be analyzed for the Five-Year COCs listed below in **Table 11**. Five-Year COCs were last monitored in 2020, and shall be analyzed again in 2025. (Title 27, § 20420, subd. (g).) The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

**Table 11—Unsaturated Zone Detection Monitoring (Lysimeter),
 Five-Year COCs**

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Freq.
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	<i>(various)</i>	µg/L	Every 5 Years
VOCs (Attachment C)	<i>(various)</i>	µg/L	Every 5 Years

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Freq.
Semi-Volatile Organic Compounds (Attachment D)	<i>(various)</i>	µg/L	Every 5 Years
Chlorophenoxy Herbicides (Attachment E)	<i>(various)</i>	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	<i>(various)</i>	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

3. Surface Water

Runoff from the Facility is collected and flows to the Bird Sanctuary and A-1 Channel, which may be affected by a release. The Discharger shall install and operate a surface water detection monitoring system to detect a release from the landfill and any resulting impacts to surface water if such a release occurs. Surface water monitoring is specifically required where runoff from waste management unit flows, or could flow, to waters of the United States. (See Title 27, § 20415, subd. (c)(1) and § 20420.)

a. Required Network

The Facility's surface water monitoring network consists of the monitoring points listed in **Table 12**. As of the date of this Order, the network meets the requirements of Title 27. (See § 20415, subd. (c).)

Table 12—Surface Water Detection Monitoring Network

Area	Surface Water	Monitoring Point	Program	Location
LF-1, LF-3, LF-4, & WP-9.1	Alamo Creek A-1 Channel	SW-3	Background	South side of culvert under Hay Road
		SW-4	Background	Upstream of Bird Sanctuary Pond outfall
		SW-7	Detection	Downstream of Bird Sanctuary Pond outfall
	Bird Sanctuary Pond	SW-8	Background	Upstream of LF-3 east of borrow pit discharge
		SW-9	Detection	Discharge into the Bird Sanctuary Pond
		SW-5	Detection	Bird Sanctuary Pond

See Glossary for definitions of terms and abbreviations in table.

b. Sample Collection and Analysis

When surface water is present at monitoring points in Table 12 at any point during the monitoring period, samples shall be collected from each monitoring point and analyzed for the Monitoring Parameters in **Table 13** (Physical Parameters) and **Table 14** (Constituent Parameters), in accordance with the specified schedule. (Title 27, § 20420, subds. (e)-(f).) Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

Table 13—Surface Water Detection Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Electrical Conductivity	SC	µmhos/cm	Semiannual	Semiannual
pH	PH	Std. Units	Semiannual	Semiannual
Turbidity	TURB	NTUs	Semiannual	Semiannual
Hardness as CaCO ₃	HARD	mg / L	Semiannual	Semiannual

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Presence of Oil & Grease Sheen	(none)	Yes / No	Semiannual	Semiannual
Flow to Surface Waters at Time of Sampling	(none)	Yes/No	Semiannual	Semiannual

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

Table 14—Surface Water Detection Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
TSS	TSS	mg/L	Semiannual	Semiannual
TDS	TDS	mg/L	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate	CACO3	mg/L	Semiannual	Semiannual
Bicarbonate	BICACO3	mg/L	Semiannual	Semiannual
Nitrate as Nitrogen	NO3N	mg/L	Semiannual	Semiannual
Ammonia-Nitrogen	NH3	mg/L	Semiannual	Semiannual
Total Kjeldahl Nitrogen	CALCN	mg/L	Semiannual	Semiannual
Sulfate	SO4	mg/L	Semiannual	Semiannual
Calcium (dissolved)	CA	mg/L	Semiannual	Semiannual
Magnesium (dissolved)	MG	mg/L	Semiannual	Semiannual
Potassium (dissolved)	K	mg/L	Semiannual	Semiannual
Sodium (dissolved)	NA	mg/L	Semiannual	Semiannual
Arsenic (dissolved)	AS	ug/L	Annual	Annual

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Iron (dissolved)	FE	ug/L	Annual	Annual
Lead (dissolved)	PB	ug/L	Annual	Annual
Manganese (dissolved)	MN	ug/L	Annual	Annual
Copper (dissolved)	CU	ug/L	Annual	Annual
Total Chromium (dissolved)	CR	ug/L	Annual	Annual
VOCs (Attachment C)	(various)	µg/L	Semiannual	Semiannual
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	Every 2 Years	Every 2 Years

See Glossary for definitions of terms and abbreviations in table Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

c. Five-Year COCs

The Discharger shall analyze surface water samples for the Five-Year COCs listed in Table 15 Five-Year COCs were last monitored in 2020 and shall be analyzed again in 2025. (Title 27, § 20420, subd. (g).)

Table 15—Surface Water Detection Monitoring, Five-Year COCs

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Freq.
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	(various)	µg/L	Every 5 Years
VOCs (Attachment C)	(various)	µg/L	Every 5 Years
Semi-Volatile Organic Compounds (Attachment D)	(various)	µg/L	Every 5 Years

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Freq.
Chlorophenoxy Herbicides (Attachment E)	<i>(various)</i>	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	<i>(various)</i>	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

d. Leachate Seeps

Surface water samples shall also be collected and analyzed for the monitoring parameters in the above Tables 13, 14, and 15 when leachate seeps are observed that may have impacted surface water quality. If leachate seeps are identified extending out of the disposal area or that potentially impact on-site drainages, those drainages shall be sampled as close to the leachate as possible (in addition to sampling of the actual leachate seep as required in Section D.2 below).

e. Storm Water

Storm water monitoring shall be conducted in accordance with the NPDES General Permit for Storm Water Dischargers Associated with Industrial Activities (Water Quality Order NO. 2014-006-DWQ, NPDES No. CAS000001). The Discharger shall submit a copy of the storm water Annual Report with the first semi-annual monitoring report for each year submitted under this program.

4. Summary of Water Quality Protection Standard (WQPS) Components

The Water Quality Protection Standard (WQPS) is the Title 27 analytical framework through which an individual WMU is monitored for releases and impacts to water quality, i.e., the Detection Monitoring Program (DMP). (See Title 27, § 20390, subd. (a).) As explained in further detail below, for the duration of the Compliance Period, the Monitoring Points situated at a WMU’s Point of Compliance are sampled and analyzed for Monitoring Parameters indicative of a release. If concentrations of Constituents of Concern exceed Concentration Limits, the results are confirmed through Retesting Procedures.

a. Compliance Period

The “compliance period” is the minimum time for which a water quality monitoring will be required—i.e., equal to the sum of active years and the closure period. (Title 27, § 20410.) The period restarts each time an Evaluation Monitoring Program (EMP) is initiated for a given WMU. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the waste management unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program (Id., §§ 20410(a), 20415, 20425.) If a WMU is in corrective action, the period continues until it is demonstrated that the WMU has been in continuous compliance with its WQPS for at least three years. (Id., § 20410, subd. (c).)

b. Monitoring Points

For WQPS purposes, a “monitoring point” is any well, device, or location where monitoring is conducted, and is specified in the Facility’s WDRs and subject to the WQPS. (Title 27, § 20164.) Monitoring Points are listed in **Section B** (Detection Monitoring Program)—specifically **Table 1** (Groundwater), **Table 6** (Soil Pore Liquid), **Table 7** (Soil Pore Gas), **Table 12** (Surface Water), **Tables 17 and 18** (Landfill Gas), and **Table 20** (Leachate).

c. Point of Compliance (POC)

The Point of Compliance (POC) is a vertical plane at the WMU’s hydraulically downgradient limit, extending through the uppermost underlying aquifer. (Title 27, §§ 10164, 20405(a).) The Facility’s POC monitoring wells are listed above in **Table 1**.

d. Constituents of Concern (COCs)

Constituents of Concern (COCs) are waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in a WMU. (Title 27, §§ 20164, 20395.)

e. Monitoring Parameters

Monitoring Parameters are a predetermined set of COCs and measurable physical characteristics (e.g., temp., electrical conductivity, pH), which serve as reliable indicators of a WMU

release, and for which samples will therefore be routinely analyzed. (Title 27, §§ 20164, 20395(a), 20420(e)-(f).) For the purposes of this MRP, the Monitoring Parameters are:

- i. For **Groundwater**, those in Table 2 and 3;
- ii. For the **Unsaturated Zone**, those in Table 9, and 10;
- iii. For **Surface Water**, those in Table 13 and 14;
- iv. For the **Landfill Gas**, those in Table ; and
- v. For the **Leachate**, those in Tables 22.

f. Five-Year COCs

In addition to the Monitoring Parameters described above, this Order requires the quinquennial analysis of samples for a larger range of constituents that are reasonably expected to be found in, or derived from, the waste contained within each unit at the Facility. (Title 27, §§ 20395, 20420(g).) Analytical results for Five-Year COCs were last submitted to the Central Valley Water Board as part of the 2020 Annual Monitoring Report and are due again in 2025. For the purposes of this MRP, the Five-Year COCs are listed in:

- i. **Attachment B** (*Dissolved Inorganics*);
- ii. **Attachment C** (*VOCs*);
- iii. **Attachment D** (*Semi-Volatile Organic Compounds*);
- iv. **Attachment E** (*Chlorophenoxy Herbicides*);
- v. **Attachment F** (*Organophosphorus Compounds*); and
- vi. Any other COCs listed in **Table 4** (Groundwater), **Table 11** (Unsaturated Zone), **Table 15** (Surface Water), and **Table 23** (Leachate).

g. Concentration Limits

The Concentration Limit for each COC is the “background concentration,” as determined by the statistical methods outlined in

subdivision (e)(8) of Title 27, section 20415⁵, or by an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E). (Title 27, § 20400, subds. (a), (b).) The concentration limits for non-naturally- occurring constituents of concern, including organic compounds (e.g., VOCs and dissolved metals not detectable in background), shall be non-detect.

Methods for calculating Concentration Limits were proposed in the 15 January 2020 WQPS Report. The approved methods use inter-well statistics. Updated Concentration Limits may be proposed and by the Discharger every two years, in the Annual Monitoring Report submitted per **Section E.2** here. Concentration Limits are being specified by these WDRs, and shall be updated again as part of the 2024 Annual Monitoring Report, and again every two years thereafter. If Board staff approves updated concentration limits based on a Revised WQPS report in the future the concentration limits established in that formal approval letter supersede those in Attachment A.

The Concentration Limits are listed in **Attachment A of the WDRs**.

h. Retesting Procedures

If monitoring results indicate measurably significant evidence of a release, as described in Section I.45 of the SPRRs (Standard Monitoring Specifications), the Discharger shall apply the following:

- i. **Non-Statistical Retesting Procedures (SPRRs, § I.46)** for analytes detected in less than 10 percent of background samples (e.g., non-naturally occurring COCs); and
- ii. **Statistical Retesting Procedures (SPRRs, § I.46)** for analytes detected in at least 10 percent of background samples (e.g., naturally occurring COCs).

⁵ Concentration Limits are initially proposed by the discharger, then reviewed and approved by the Central Valley Water Board (subject to any necessary revisions). The limits specified herein are approved and incorporated as part of the Facility's WDRs.

i. Corrective Action Monitoring

The concentration limits for corrective action monitoring shall be the same as those for detection monitoring absent approval of a proposal for concentration limits greater than background (CLGBs) under Title 27 Section 20400(c) and revision of the WDRs. Time series plots and an intra-well statistical procedure (e.g., the Sens Slope Method) shall be used for trend analysis to monitor corrective action progress.

C. Corrective Action Monitoring Program (CAMP)

To demonstrate the effectiveness of ongoing correction action at the Facility, the Discharger shall perform the following additional monitoring in accordance with of subdivision (d) of Title 27, section 20430.

1. Landfill Gas Corrective Action

The Facility's landfill gas (LFG) corrective action system currently consists of LFG extraction wells, leachate wells (completed as dual phase extraction wells), LCRS sumps fitted to the LFG extraction system, a gas to energy plant, and a flare. LFG extraction monitoring shall be conducted to assess the nature and source of impacts at the site; to provide an ongoing assessment as to the effectiveness of existing landfill gas controls in mitigating that source; and to evaluate the possible need for additional corrective action measures to protect underlying water bearing media. The Discharger shall log all system shutdowns (including causes and stop/start dates), monthly downtime and monthly runtime. All shutdowns, regardless of the type of restart, shall be recorded. This information shall be reported semiannually per **Section E.1**. Additionally, system performance shall be monitored in accordance with **Table 16**.

**Table 16—Landfill Gas Corrective Action Monitoring,
 Control System Performance**

Parameter	Units	Sampling Freq.	Reporting Freq.
Control System Runtime	Hours	N/A	Semiannually
Control System Downtime	%	N/A	Semiannually
Temperature into Plant	°F	Monthly	Semiannually
Flare Combustion Temperature	°F	Monthly	Semiannually
System Vacuum	mm Hg vacuum	Monthly	Semiannually
Totalized Flow into Plant	ft ³	Monthly	Semiannually
Totalized Flow Rate into Plant	ft ³ / min	Monthly	Semiannually
VOCs per USEPA Method TO-15 in Influent	µg / cm	Semiannually	Semiannually
Methane in Influent	%	Semiannually	Semiannually

See Glossary for definitions of terms and abbreviations in table.

a. Extraction Well Field

The Facility’s network of LFG extraction wells, installed to address a release to the unsaturated zone and/or groundwater, is set forth in **Table 17**.

LFG samples shall be collected from the network in **Table 17** and analyzed for the Monitoring Parameters specified in **Table 18** using the applicable test methods. LFG monitoring shall also be conducted at all future LFG extraction points installed as part of the existing or future LFG extraction system.

Table 17—Landfill Gas Corrective Action, Extraction Well Network

Landfill Unit	LFG Extraction Device
LF-1	Gas Extraction Wells: GEWs 28 through 41
	Leachate Wells: LWs 1-10
	LCRS Sumps: S-1
LF-2	Gas Extraction Wells: GEWs 7, 8R, 25 & 52
	LCRS Sumps: S-2.1
LF-3	Gas Extraction Wells: GEWs 1 through 6; 9R, 10R, 11, 11R, 12; 23, 24, 26 and 53 through 57
	LCRS Sumps: S-2.1, S-2.2A, S-2.2B, S-11.1, & S-11.2
LF-4	Gas Extraction Wells: GEWs 13 through 22; GEWs 42 through 51; and GEWs 58 through 67
	LCRS Sumps: S-3.2, S-3.3, S-4.1, S-5.1A, S-5.1B, S5.2, and S-6

Table Note:

1. The LFG monitoring network shall also include the sampling port of the gas header(s) at each landfill unit and all future LFG extraction wells and primary LCRS sumps installed at the landfill units at the site.

**Table 18—Landfill Gas Corrective Action, Extraction Well Network
 Monitoring Parameters**

Monitoring Parameter	Units	Sampling Freq.	Reporting Freq.
Atmospheric Temperature	°F	Monthly	Semiannually
Atmospheric Pressure	Inches Hg	Monthly	Semiannually
Methane	% by Vol.	Monthly	Semiannually
Carbon Dioxide	% by Vol.	Monthly	Semiannually
Oxygen	% by Vol.	Monthly	Semiannually
Remainder Gas	% by Vol.	Monthly	Semiannually
Gas Temperature at Each Well	°F	Monthly	Semiannually
Initial Static Pressure in Wellhead	Inches Hg	Monthly	Semiannually
Adjusted Static Pressure in Wellhead	Inches Hg	Monthly	Semiannually
VOCs (USEPA Method TO-15) ¹	ug/cm ²	Semiannually	Semiannually

See Glossary for definitions of terms and abbreviations in table.

Table Note:

1. VOC monitoring shall be limited to LFG samples collected from the LF-1 gas header.

b. LFG Condensate

LFG condensate monitoring shall be conducted at the LFG condensate sumps listed in **Table 19** for LFG extracted from each landfill unit/module. LFG condensate monitoring shall also be conducted at all future LFG condensate sumps installed as part of the existing or future LFG extraction system. LFG condensate recovered from each landfill unit shall be handled as leachate consistent with the Discharge Prohibitions and the Landfill Liquids Management Plan, as approved by Central Valley Water Board staff.

Table 19—Landfill Gas Condensate Sumps

Landfill	Modules	Module Status	Condensate Sump
LF-1	DMS-1A & 1B	Existing	CS-4, CS-6
LF-2	DM-2.1	Existing	CS-1, CS-7
LF-3	DMS-2.2, 11.1 & 11.2	Existing	CS-1, CS-7
LF-4	DMS-3 & 4.1	Existing	CS-2
LF-4	DMS-4.3, 6, 7.1, 7.2	Existing	CS-8
LF-4	DMS-4.1, 4.2 & 5	Existing	CS-3
LF-4	DMS-8 & 9.1	Existing	CS-8
All	All existing modules	Existing	CS-5

D. Additional Facility Monitoring

1. Leachate Collection & Removal System (LCRS)

The Discharger shall operate and maintain leachate collection and removal system (LCRS) sumps, in accordance with the requirements of Title 27 and the following provisions. Leachate monitoring shall be conducted to quantify the amount of leachate being generated by the unit, characterize the strength of the leachate, and to identify/update landfill concentration of constituents of concern.

a. Required Network

The Facility includes the LCRS sumps listed in Table 20. As of the date of this Order, the network meets the requirements of Title 27. (Title 27, § 20415, subd. (b).)

Table 20—Leachate Monitoring Devices

Unit	Module	Status	Program	Monitoring Points
LF-1	DM-1A	Existing	Corrective Action	LWs-1-10 ²
	DM-1B	Existing		LS-1

Unit	Module		Status	Program	Monitoring Points
LF-2	DM-2.1	---	Existing	Corrective Action	S-2.1
LF-3	DM-2	DM-2.2A	Existing	Corrective Action	S-2.2A
		DM-2.2B			S-2.2B
	DM-11	DM-11.1	Existing	Corrective Action	S-11.1
		DM-11.2			S-11.2
LF-4	DM-3	DM-3.1	Existing	Detection & Corrective Action	S-3.1
		DM-3.2	Existing		S-3.2
		DM-3.3	Existing		S-3.3
	DM-4 ²	DM-4.1	Existing	Detection & Corrective Action	S-4.1 ³
		DM-4.2	Existing		
		DM-4.3	Existing		
	DM-5	DM-5.1A	Existing	Detection & Corrective Action	S-5.1A
		DM-5.1B	Existing		S-5.1B
		DM-5.2	Existing		S-5.2
	DM-6	DM-6.1	Existing	Detection	S-6.1 ³
		DM-6.2	Existing		
	DM-7	DM-7.2	Existing	Detection	S-7.2 ³
	DM-8	DM-8.1	Temporary	Detection	S-8.1 ^{3,4}
	DM-9	DM-9.1	Existing	Detection	S-9.1
WP-9.1 ^{1,3}	WP-9.1A	WP-9.1A	Existing	Corrective Action	LS-9.1A

Table Notes:

1. Module not constructed with LCRS sump.
2. Leachate wells completed in waste.
3. Module constructed with only one primary LCRS sump.
4. Module constructed with temporary LCRS sump pending construction of second phase of module.

b. Annual LCRS Testing

All Leachate Collection and Removal Systems (LCRS) shall be tested annually to demonstrate proper operation, with the results of each test (See Title 27, § 20340, subd. (d)). The results of these tests shall be reported to the Central Valley Water Board in the

Annual Monitoring Report and shall include comparisons with earlier tests made under comparable conditions and the ALRs in the WDRs.

c. Monthly Sump Inspection

All LCRS sumps shall be inspected monthly for the presence of leachate. As provided in **Table 21**, the total flow and flow rate for leachate in each sump shall be recorded after each inspection and reported semiannually per **Section E.1**.

Table 21—LCRS Sump Monitoring, Monthly Inspection Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Total Flow	(none)	Gallons	Monthly	Semiannually
Flow Rate (gpd)	FLOW	Gallons/Day	Monthly	Semiannually
Flow Rate (gpad)	(none)	Gallons/Acre/Day	Monthly	Semiannually
Depth of Liquid	(none)	inches	Monthly	Semiannually
Volume Pumped to Storage Tanks	(none)	Gallons	Monthly	Semiannually
Volume Recirculated (location specified)	(none)	Gallons	Monthly	Semiannually
Volume Pumped (location specified, explanation)	(none)	Gallons	Monthly	Semiannually

See Glossary for definitions of terms and abbreviations.

d. First Detection of Leachate in Sump

Upon detecting leachate in a previously dry sump, the Discharger shall notify Central Valley Water Board staff within seven days, and immediately sample and analyze leachate for the parameters in **Table 22**⁶. Thereafter, whenever leachate is present in the same sump, the leachate shall be sampled and analyzed for the same parameters, and in accordance with the specified sampling and reporting schedule in **Table 22**.

Table 22—LCRS Sump Monitoring Parameters and Schedule

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Electrical Conductivity	SC	µmhos/cm	Semiannual	Semiannual
pH	PH	pH Units	Semiannual	Semiannual
TDS	TDS	mg/L	Semiannual	Semiannual
Chloride	CL	mg/L	Semiannual	Semiannual
Carbonate	CACO3	mg/L	Semiannual	Semiannual
Bicarbonate	BICACO3	mg/L	Semiannual	Semiannual
Nitrate (as Nitrogen)	NO3N	mg/L	Semiannual	Semiannual
Sulfate	SO4	mg/L	Semiannual	Semiannual
Calcium (dissolved)	CA	mg/L	Semiannual	Semiannual
Magnesium (dissolved)	MG	mg/L	Semiannual	Semiannual

⁶ The sampling and reporting schedules in Table are applicable for subsequent monitoring only. When notifying Central Valley Water Board staff of the first detection of leachate, the Discharger shall indicate when laboratory results are expected to be available.

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Potassium (dissolved)	K	mg/L	Semiannual	Semiannual
Sodium (dissolved)	NA	mg/L	Semiannual	Semiannual
Ammonia-Nitrogen	NH3	mg/L	Semiannual	Semiannual
Total Kjeldahl Nitrogen	CALCN	mg/L	Semiannual	Semiannual
Arsenic (dissolved)	AS	ug/L	Annual	Annual
Iron (dissolved)	FE	ug/L	Annual	Annual
Lead (dissolved)	PB	ug/L	Annual	Annual
Manganese (dissolved)	MN	ug/L	Annual	Annual
Copper (dissolved)	CU	ug/L	Annual	Annual
Total Chromium (dissolved)	CR	ug/L	Annual	Annual
VOCs (Attachment C)	(various)	µg/L	Annual	Annual
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	Every 2 Years	Every 2 Years

See Glossary for definitions of terms and abbreviations. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

e. Storage Tanks

The Discharger shall also monitor, and include in the semiannual monitoring reports, the total volume of leachate (including any commingled LFG condensate) pumped from onsite storage and hauled offsite for disposal each month. Disposal location information shall also be provided in the monitoring reports.

f. Five-Year COCs

At least once every five years, the Discharger shall sample and analyze any leachate present in the sump for the Five Year COCs listed in **Table 23**. Five Year COCs were last monitored in 2020, and shall be analyzed again in 2025.

Table 23—LCRS Sump Monitoring, Five-Year COCs

Parameter	GeoTracker Code	Units	Sampling & Reporting Freq.
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	<i>(various)</i>	µg/L	Every 5 Years
VOCs (Attachment C)	<i>(various)</i>	µg/L	Every 5 Years
Semi-Volatile Organic Compounds (Attachment D)	<i>(various)</i>	µg/L	Every 5 Years
Chlorophenoxy Herbicides (Attachment E)	<i>(various)</i>	µg/L	Every 5 Years
Organophosphorus Compounds (Attachment F)	<i>(various)</i>	µg/L	Every 5 Years

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

2. Leachate Seepage

The Discharger shall monitor all areas of the units (e.g., top deck, side slopes, toe areas, and levee corridor) for leachate seeps, including as part of Facility Monitoring. Any leachate that seeps to the surface from any landfill WMU shall, immediately upon detection, shall be sampled and analyzed for the Monitoring Parameters in **Table 24** (Physical Parameters) and **Table 25** (Constituent Parameters). See **Section E.3** for Reporting Requirements.) The quantity of leachate shall be estimated and reported as Leachate Flow Rate (in gallons/day). In the event of a reported leachate seep, Central Valley Water Board staff may direct additional sampling and analysis pursuant to Water Code section 13267, subdivision (b)(1).

Table 24—Leachate Seep Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Total Flow	(none)	Gallons	Upon Detection	See MRP, § E.3
Flow Rate	FLOW	Gallons/Day	(same)	(same)
Electrical Conductivity	SC	µmhos/cm	(same)	(same)
pH	PH	pH Units	(same)	(same)

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

Table 25—Leachate Seep Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Electrical Conductivity	SC	µmhos /cm	Upon Detection	See MRP, § E,3
pH	PH	pH Units	(same)	(same)
TDS	TDS	mg/L	(same)	(same)
Chloride	CL	mg/L	(same)	(same)
Carbonate	CACO3	mg/L	(same)	(same)
Bicarbonate	BICACO3	mg/L	(same)	(same)
Nitrate (as Nitrogen)	NO3N	mg/L	(same)	(same)
Sulfate	SO4	mg/L	(same)	(same)
Calcium (dissolved)	CA	mg/L	(same)	(same)
Magnesium (dissolved)	MG	mg/L	(same)	(same)
Potassium (dissolved)	K	mg/L	(same)	(same)

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Sodium (dissolved)	NA	mg/L	(same)	(same)
Ammonia-Nitrogen	NH3	mg/L	(same)	(same)
Total Kjeldahl Nitrogen	CALCN	mg/L	(same)	(same)
Arsenic (dissolved)	AS	ug/L	(same)	(same)
Iron (dissolved)	FE	ug/L	(same)	(same)
Lead (dissolved)	PB	ug/L	(same)	(same)
Manganese (dissolved)	MN	ug/L	(same)	(same)
Copper (dissolved)	CU	ug/L	(same)	(same)
Total Chromium (dissolved)	CR	ug/L	(same)	(same)
VOCs (Attachment C)	(various)	µg/L	(same)	(same)
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	(same)	(same)

See Glossary for definitions of terms and abbreviations in table. Samples shall be analyzed using the applicable test methods for each constituent listed in Appendix A.

3. Leak Detection Monitoring

The Discharger shall conduct leak detection monitoring to detect a leak in (or other breach of) the primary containment system (including primary LCRS sump) by landfill leachate, LFG or LFG condensate, or any other foreign fluid (e.g., contact storm water, groundwater). The Discharger shall operate, maintain, and monitor all leak detection devices, including all secondary LCRS sumps and all underlying pan lysimeters not open to the unsaturated zone (i.e., pan lysimeters welded to the base of the secondary LCRS sump, hereafter referred to as “welded pan lysimeters” or “WPLs”).

a. Required Network

The Facility includes the Leak Detection Monitoring devices listed in Table 26.

Table 26— Leak Detection Monitoring Devices

Landfill Unit	Module			Program	Monitoring Points	
	Name	Phase	Status		Secondary Sump	Lysimeter
LF-1	DM-1	DM-1A	Existing	N/A	None ¹	None ⁴
		DM-1B	Existing	N/A	None ¹	None ⁴
LF-2	DM-2	DM-2.1	Existing	Corrective Action	None ¹	None ⁴
LF-3	DM-2	DM-2.2A	Existing	Corrective Action	None ¹	None ⁴
		DM-2.2B			None ¹	None ⁴
	DM-11	DM-11.1	Existing	Corrective Action	None ¹	None ⁴
		DM-11.2			None ¹	None ⁴
LF-4	DM-3	DM-3.1	Existing	Detection & Corrective Action	LD-3.1	WPL-3.1 ²
		DM-3.2	Existing		LD-3.2	WPL-3.2 ²
		DM-3.3	Existing		LD-3.3	WPL-3.3 ²
	DM-4	DM-4.1	Existing	Detection & Corrective Action	LD-4.1	WPL-4.1 ^{2,3}
		DM-4.2	Existing			
		DM-4.3	Existing			
	DM-5	DM-5.1A	Existing	Detection & Corrective Action	None ¹	None ⁴
		DM-5.1B	Existing		None ¹	None ⁴
		DM-5.2	Existing		LD-5.2	WPL-5.2 ²
	DM-6	DM-6.1	Existing	Detection	LD-6.1	WPL-6.1 ^{2,3}
		DM-6.2	Existing			
	DM-7	DM-7.1	Existing	Detection & Corrective Action	LD-7.2	WPL-7 ^{2,3}
		DM-7.2	Existing			
	DM-8	DM-8.1	Existing	Detection	LD-8.1	None ⁴

Landfill Unit	Module			Program	Monitoring Points	
	Name	Phase	Status		Secondary Sump	Lysimeter
	DM-9	DM-9.1	Existing	Detection	LD-9.1	WPL-9 ²
WP-9.1	WP-9.1A	WP-9.1A	Existing	N/A	None ¹	None ⁴

Table Notes:

1. Module/phase not constructed with secondary LCRS sump.
2. Pan Lysimeter welded to bottom of secondary LCRS sump.
3. All module phases drained by single primary LCRS sump.
4. Module/phase not constructed with a welded pan lysimeter.

b. Monthly Sump Inspection

All LDS and WPL sumps shall be inspected monthly for the for the presence (i.e., depth of) liquid and semiannually for the presence of LFG. Any liquid or LFG confirmed to be present in a leak detection monitoring device (as described in Section D.2.c or D.2.d below), including an ongoing or intermittent (e.g., seasonal) leak, shall then be monitored at least semiannually for the monitoring parameters listed in Tables 22 and 23 (for a liquid release) and 18 (for a gas release) respectively, and reported semiannually per Section E.1. (More frequent monitoring may be required under an approved Evaluation Monitoring Program or Corrective Action Program).

c. Confirmation of a Liquid Leak

If liquid is detected in a leak detection monitoring device, the Discharger shall, within 24-hours, notify Central Valley Water Board staff by telephone or email and, within 7-days, sample and test the liquid for ALL field and monitoring parameters listed in Tables 22 and 23, including 5-year COCs. Weekly retest sampling shall be conducted thereafter, as necessary, to confirm the identity of the liquid using the sampling and analysis procedures (including sample analysis profiles) in the most recent updated Sample Collection and Analysis Plan submitted under this MRP.

Within 45 days of the initial detection, the Discharger shall identify the liquid (e.g., leachate, condensate, contact storm water) by comparing the sample results to the background sample analysis profiles as described in the Corrective Action Specifications and submit a written report of the findings to the Central Valley Water Board. Upon approval of this report (i.e., confirmation of the identity of the liquid), the Discharger shall then implement the appropriate

response measures under the Corrective Action Specifications and/or as otherwise directed by Central Valley Water Board staff.

d. Confirmation of a Gas Leak

In the event that LFG is detected at levels triggering VOC testing (i.e., methane at or above 1% by volume and/or total organic vapors at or above 1 ppmv), the Discharger shall, within 24-hours, notify Central Valley Water Board staff by telephone or email and, within 7-days, sample for the required LFG field and monitoring parameters listed in Table 18. Weekly retest sampling may be conducted thereafter, as necessary, to assess whether the gas leak is ongoing or intermittent. Confirmation and response procedures for a LFG leak shall be the same as those described above for a liquid leak (i.e., submit report of findings within 45 days, implement appropriate response measures upon approval).

Any liquid or LFG confirmed to be present in a leak detection monitoring device in accordance with the above procedures, shall also trigger the need to investigate whether a release has occurred and/or needs to be addressed consistent with Unsaturated Zone Monitoring section of this MRP and the applicable O&M plans.

4. Solid and Semi Solid Waste Monitoring

The Discharger shall monitor all wastes discharged to the landfill on a quarterly basis and report to the Board as follows:

Table 27—Solid & Semi-Solid Waste Monitoring Schedule

Parameters	Units	Monitoring Frequency	Reporting Frequency
Unit accepting waste	---	Quarterly	Semiannually
Type(s) of waste	---	Quarterly	Semiannually
Quantity of waste	cu yds. & tons ¹	Quarterly	Semiannually
Moisture content of waste	percent	Quarterly	Semiannually
Quantity of cover	cu yds. & tons ¹	Quarterly	Semiannually
Type(s) of cover	---	Quarterly	Semiannually
Elevation range of discharges	Feet & 10ths, NADV 88	Quarterly	Annually
Remaining capacity of unit	%	Quarterly	Annually

Note:

1. Tonnage may be estimated based on volume conversion provided volume conversion factor is reported.

5. Borrow Pit Dewatering

The Discharger performs dewatering activities at an area referred to as the "Borrow Pit" in order to harvest earthen material for landfill cover and base liner construction. The Discharger has installed a pump to dewater the borrow pit and to discharge the water. These activities are regulated by the Water Board under the General Order for Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water (Limited Threat General Order). The Discharger is required to comply with all the requirements of the Limited Threat General Order, including operation and maintenance requirements. In addition to the requirements of the Limited Threat General Permit, for each semiannual monitoring report required under this MRP, the Discharger shall monitor and report the following for the Borrow Pit:

- a. The monthly flows of groundwater extracted from the borrow pit shall be tabulated and reported in the semiannual monitoring reports.
- b. If groundwater wells between the borrow pit and nitrate impacted areas have confirmed detections of Nitrate-nitrogen, nitrite-nitrogen, total Kjeldahl nitrogen above concentration limits, then the Discharger shall monitor the borrow pit discharge for these nitrogen constituents.
- c. If groundwater wells between the borrow pit and the landfill units have confirmed detections of VOCs that are identified from the landfill, the Discharger shall monitor the borrow pit discharge for VOCs.

6. Standard Observations

The Discharger shall perform regular visual inspections of all landfill units, wastepiles, and all other waste handling or disposal operations in accordance with **Table 28** (Criteria) and **Table 29** (Schedule). Results of these regular visual inspections shall be included in Semiannual Monitoring Reports per **Section E.1**

Table 28—Criteria for Regular Visual Inspections

Category	Criteria
Within Unit	<ul style="list-style-type: none"> Evidence of ponded water at any point on unit outside of any contact storm water/leachate diversions structures on the active face of unit (record affected areas on map). Evidence of erosion and/or of day-lighted refuse.
Unit Perimeter	<ul style="list-style-type: none"> Evidence of leachate seep. Estimated size of affected area (record on map) and flow rate. Evidence of erosion and/or of day-lighted refuse.
Receiving Waters	<ul style="list-style-type: none"> Floating and suspended materials of waste origin—presence or absence, source and size of affected areas. Discoloration and turbidity—description of color, source and size of affected areas.

Table 29—Regular Visual Inspection Schedule

Category	Wet Season (1 Oct. to 30 April)	Dry Season (1 May to 30 Sept.)
Active Units	Weekly	Monthly

7. Annual Facility Inspections

Prior to **30 September** of each year, the Discharger shall inspect the Facility including all landfill units, waste piles, and borrow pits to assess repair and maintenance needs for drainage control systems, cover systems and groundwater monitoring wells; and preparedness for winter

conditions (e.g., erosion and sedimentation control). If repairs are made as result of the annual inspection, problem areas shall be photographed before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by 31 October. See **Section E.4** for Reporting Requirements. Any necessary construction, maintenance, or repairs shall be completed by 31 October in accordance with the Annual Winterization Plan submitted under the WDR Facility Specifications. Annual facility inspection reporting shall be submitted as required in Section E.4 of this MRP.

8. Major Storm Events

Within seven days of any storm event capable of causing damage or significant erosion (Major Storm Event), the Discharger shall inspect the Facility for damage to any precipitation, diversion and drainage facilities, and all landfill side slopes. Necessary repairs shall be completed within 30 days of the inspection. The Discharger shall take photos of any problem areas before and after repairs. See **Section E.5** for Reporting Requirements.

9. Alternative Daily Cover Material Acceptance Criteria

The Discharger shall use their established acceptance criteria for loads containing Non-hazardous contaminated sediment, dredge spoils, foundry sands, Construction & Demolition Material Recovery Facility (MRF) Fines, or C&D Fines intended to be used as ADA. A Soluble Threshold Limit Concentration (STLC) analysis shall be performed if required by the acceptance criteria prior to acceptance. STLC results shall be reviewed for compliance will applicable regulations and the WDRs by the Discharger prior to placing these materials in the landfill. STLC results shall be included in each semi-annual report. See Section E.1.k for Reporting Requirements.

10. Five-Year Iso-Settlement Surveys

Every five years, the Discharger shall conduct an iso-settlement survey as described in items D.10.a and D.10.b below. (Title 27, § 21090, subd. (e)(1) (2).) See **Section E.6** for Reporting Requirements. The most recent aerial topographic survey of the site was conducted in March 2020.

a. Active Units and Flood Control Berms

For active units, or portions thereof, the Discharger shall provide copies of topographic maps obtained from 5-year aerial topographic surveys conducted under Title 27, section 21570(f) (10). The most

recent topographic survey of the active landfill units (LFs-1 through 4) was conducted in March 2020. Topographic surveys of the active units and flood control berms under this Order shall be coordinated with surveys conducted on the closed units (i.e., by 31 March 2025 and every five years thereafter).

b. Closed Units

Title 27 requires that the Discharger conduct an initial final cover topographic survey upon completion of closure or partial closure and at least every five years thereafter. The purpose of the survey is to track differential settlement of the landfill's low hydraulic conductivity (LHC) layer of the cover. The Discharger is also required to produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's LHC (or engineered alternative cover, as applicable).

WDR Closure and Postclosure Specifications require that LF-1 be closed by 31 December 2024. The first postclosure topographic survey for LF-1 under this Order shall therefore be completed by **31 March 2025**. Subsequent topographic surveys for LF-1 shall be conducted by 31 March **every five years** thereafter.

E. Reporting Requirements

The results of all monitoring conducted under this Order shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made. All reports shall include the data and information required for that report in this Monitoring and Reporting Program and as required in WDRs Order R5-2022-00XX and the Landfill and Industrial SPRRs, particularly the monitoring and response to release provisions (i.e., WDR Section J and SPRR Sections I and J). In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. **Table 30** summarizes required reports.

The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Field and laboratory sheets shall be reported in each monitoring report.

All monitoring reports, technical reports, and analytical data required under this MRP and described herein shall be submitted in electronic form in accordance with WDR Reporting Requirement K.2.

Table 30—Summary of Required Reports

Section	Report	Deadline
§ E.1	<i>Semiannual Monitoring Reports (SMRs)</i>	1 August (1 January to 30 June) 1 February (1 July to 31 December)
§ E.2	<i>Annual Monitoring Reports (AMRs)</i>	1 February
§ E.3	<i>Leachate Seep Reporting</i>	Immediately upon Discovery of Seepage (staff notification) Within 7 Days (written report)
§ E.4	<i>Annual Facility Inspection Reports</i>	15 November
§ E.5	<i>Major Storm Reporting</i>	Immediately after Damage Discovery (staff notification) Within 14 Days of Completing Repairs (written report, photos)
§ E.6	<i>Survey and Iso-Settlement Mapping</i>	Every Five Years (Next Due in 2025)
§ E.7	<i>Financial Assurances Reports</i>	1 June
§ E.8	<i>Water Quality Protection Standard Reports</i>	Proposed Revisions (excluding Concentration Limits)

1. Semiannual Monitoring Reports (SMRs)

The Discharger shall submit Semiannual Monitoring Reports (SMRs) on 1 August (1 Jan. to 30 June) and 1 February (1 July to 31 Dec.). SMRs shall contain the following materials and information:

- a. A statement affirming that all sampling activities referenced in the report were conducted in accordance with the approved SCAP (see § A.4).
- b. Map(s)/aerial photograph(s) depicting locations of all observation stations, monitoring points referenced in the report.
- c. Tabulated monitoring data for the monitoring period for all classified units/modules, both compost facility ponds, all monitoring points, all field and monitoring parameters, all 5-year COCs, as applicable, and all monitored media (e.g., groundwater, unsaturated zone, leachate, gas, and surface water). Concentrations below the laboratory reporting limit shall not be reported as “ND” unless the reporting limit is also given in the table. Otherwise they shall be reported “<” the reporting limit (e.g., <0.10). Units shall be as required in the applicable tables of this MRP unless specific justification is given to report in other units. Refer to the SPRRs Section I “Standard Monitoring Specifications” for requirements regarding MDLs and PQLs. (See Section E.9.b for additional requirements.)
- d. For each monitoring event being reported, groundwater elevation contour and flow stream maps showing groundwater elevations and the directions of groundwater flow in the uppermost aquifer and in any additional zones of saturation based upon quarterly groundwater elevation monitoring prior to sampling. Corresponding estimates of groundwater gradients and flow velocity shall also be provided.
- e. For each disposal module and waste pile, groundwater elevation and calculated separation of waste to groundwater for each monitoring event being reported. Separation shall be calculated by subtracting the groundwater elevation in an appropriately installed and located groundwater elevation monitoring device (designated in Attachment B of the WDRs) from the compliance elevation for that unit (also designated in Attachment B of the WDRs). A compliance evaluation of the achieved separation shall also be included. If the required separation has not been achieved the Discharger must also include an explanation, describe any corrective actions taken, and propose additional corrective actions as needed.
- f. For each groundwater monitoring point referenced in the SMR:
 - i. The times each water level measurement was taken;

- ii. The type of pump or other device used to purge and elevate pump intake level relative to screening interval;
 - iii. The purging methods used to stabilize water in the well bore before sampling (including pumping rate);
 - iv. The equipment and methods used for monitoring pH, temperature and electrical conductivity (EC) during purging activity, and the results of such monitoring;
 - v. Methods for disposing of purged water; and
 - vi. The type of device used for sampling, if different than the one used for purging.
- g. An evaluation of the concentration of each monitoring parameter (or 5-year COC when five year COC sampling is conducted) as compared to the current concentration limits, and the results of any required verification testing for constituents exceeding a concentration limit per Section B.4.h. Report any actions taken under SPRRs Section J: Response to a Release for verified exceedances of a concentration limit for wells/constituents not already in corrective action monitoring.
- h. In the event of a verified exceedance of Concentration Limit(s), any actions taken per Section J of the SPRRs (*Response to Release*) for wells and/or constituents not already specifically addressed in Corrective Action Monitoring under this MRP.
- i. Evaluation as to effectiveness of existing leachate monitoring and control facilities, and runoff/run-on control facilities. Analysis should include calculations of leachate generation per acre for each sump and an evaluation of these values compared to published normal leakage rates of Class II units.
- j. Identification of any gas or liquid detected in a leak detection monitoring device or pan lysimeter based on the fluid sample analysis profiles provided in the Sample Collection and Analysis Plan consistent with the corrective action specifications of this Order.
- k. The results of solid and semi-solid waste monitoring required under Section D.4.
- l. An evaluation of the effectiveness of run-off/run-on control facilities.

- m. For lined landfill units, a summary of any instances where leachate on the landfill liner system exceeded a depth of 30 cm (excluding the leachate sump), and information about the required notification and corrective action in Section E.13 of the SPRRs (Standard Facility Specifications).
- n. Summaries of all Regular Visual Inspections conducted per Section D.3 during the reporting period.
- o. For closed landfills, summaries of inspections, leak searches and final cover repairs conducted in accordance with an approved Post-Closure Maintenance Plan per Standard Provisions G.26-29 (Standard Closure and Post-Closure Maintenance Specifications).
- p. Laboratory reports for results of all analyses performed to evaluate compliance with the WDRs and confirmation that the laboratory has uploaded the EDF data to Geotracker.
- q. Results of Borrow Pit Dewatering activities as required by Section D.5.
- r. Landfill Gas Corrective Action monitoring data required to be collected and reported by Section C.4. All shutdowns of the landfill gas extraction system, regardless of the type of restart, shall be summarized and tabulated. The summary shall include the start/stop dates, and the cause of the shutdown. In addition, the LFG plant run-time per month and percent down-time per month shall be reported and tabulated.
- s. For any Corrective Action systems at the Facility, tabulated summaries of:
 - i. Operating hours;
 - ii. Monthly runtimes and downtimes; and
 - iii. Shutdowns, including start/stop dates and causes.
 - iv. A discussion as to the effectiveness of corrective action per Title 27, section 20430(h).

2. Annual Monitoring Reports (AMRs)

On **1 February** of each year,⁷ the Discharger shall submit an Annual Monitoring Report (AMR) containing following materials and information:

- a. In tabulated format, all monitoring data for which annual reporting is required under this MRP. All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous 10 calendar years⁸. If a 5-year COC event was performed, than these parameters shall also be graphically presented for the entire history of COC monitoring⁸. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. Constituent monitoring data of incompatible scales/ranges shall not be plotted on the same graph. The graphs shall plot each datum, rather than plotting mean values. Graphical analysis of monitoring data may be used to provide significant evidence of a release. (See Section E.9.b for additional requirements for monitoring reports.)
- b. An evaluation of Monitoring Parameters with regard to the cation/anion balance, and graphical presentation of same in a Stiff diagram, Piper graph or Schoeller plot.
- c. All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a Microsoft Excel format file. See Title 27, section 20420(h).

⁷ The Annual Monitoring Report may be combined with the Semiannual Monitoring Report for 1 July through 31 December of the same year, provided that the combination is clearly indicated in the title.

⁸ Each graph shall contain individual data points (not mean values) and be appropriately scaled to accurately depict statistically significant trends or variations in water quality.

- d. For each groundwater well, quarterly hydrographs showing the elevation of groundwater with respect to the top and bottom of the screened interval, and the elevation of the pump intake.
- e. For the purpose of identifying fluid detected in a pan lysimeter or leak detection sump, updated sample analysis profiles (based on current and historical monitoring data) for each fluid (e.g., leachate; contact storm water, LFG) that could potentially be detected in a pan lysimeter or leak detection sump at the site.
- f. A comprehensive discussion of the Facility's compliance record, and the result of any corrective actions taken or planned which may be needed to attain full compliance with the WDRs.
- g. For landfill units, a map showing the areas and elevations of each unit where filling was completed during the previous calendar year; comparison to final closure design contours; and projected years in which each discrete module are expected to be filled.
- h. A summary of all monitoring results, indicating any changes made or observed since the previous AMR.
- i. A discussion on the results of Annual LCRS Testing conducted in accordance with Section D.1.a.
- j. When required per Section B.4.g of this Order, periodic updates to the Concentration Limits for all Monitoring Parameters and WQPS Monitoring Points.
- k. A comprehensive discussion of the Corrective Action Program(s), including corrective action measures implemented at each unit, as applicable.
- l. Precipitation data, pan evaporation data, temperature data, and wind data collected from the onsite weather station.

3. Leachate Seep Reporting

Upon discovery of seepage from any disposal area within the Facility, the Discharger shall **immediately notify** the Central Valley Water Board via telephone or email; and **within seven days**, submit a written report with the following information:

- a. Map(s) depicting the location(s) of seepage;
- b. Estimated flow rate(s);

- c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
- d. Verification that samples have been submitted for analyses of the Monitoring Parameters in **Table** (*Physical Parameters*) and **Table** (*Constituent Parameters*), and an estimated date that the results will be submitted to the Central Valley Water Board; and
- e. Corrective measures underway or proposed, and corresponding time schedule.

4. Annual Facility Inspection Report

By **15 November**, the Discharger shall submit a report with results of the Annual Facility Inspection per **Section D.5**. The report shall discuss any repair measures implemented, any preparations for winter, and include photographs of any problem areas and repairs.

- 5. Major Storm Event Reports** Immediately following each post-storm inspection described in **Section D.6**, the Discharger shall notify Central Valley Water Board staff of any damage or significant erosion (upon discovery). Subsequent repairs shall be reported to the Central Valley Water Board (together with before and after photos of the repaired areas) **within 14 days** of completion.

- 6. Survey and Iso-Settlement Map (Closed Landfill Units)** The Discharger shall submit all iso settlement maps prepared in accordance with **Section D.6**. (Title 27, § 21090, subd. (e).) The next maps are due on 2026.

7. Financial Assurances Report

By **1 June** of each year, the Discharger shall submit a copy of the annual financial assurances report due to the California Department of Resources Recycling and Recovery (CalRecycle) that updates the financial assurances for closure, post-closure maintenance, and corrective action. (See WDRs Order.)

8. Water Quality Protection Standard Report

Any proposed changes⁹ to the Water Quality Protection Standard (WQPS) components (§ B.4), other than periodic update of the Concentration Limits (§ B.4.g), shall be submitted in a WQPS Report for review and approval. The report shall be certified by a “Qualified Professional” (§ B), and contain the following:

- a. *Potentially Affected Waterbodies*—An identification of all distinct bodies of surface water and groundwater potentially affected by a WMU release (including, but not limited to, the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the Facility);
- b. *Map of Monitoring Points*—A map of all groundwater, surface water¹⁰ and unsaturated zone monitoring points (including all background/upgradient and Point of Compliance monitoring points);
- c. *Groundwater Movement*—An evaluation of perennial direction(s) of groundwater movement within the uppermost zone(s);
- d. *Statistical Method for Concentration Limits*—A proposed statistical method for calculating Concentration Limits for Monitoring Parameters and Five-Year COCs (see § f) detected in at least 10 percent of the background data (naturally-occurring constituents) using a statistical procedure from subdivisions (e)(8)(A)-(D) or (e)(8)(E) of Title 27, section 20415; and
- e. *Retesting Procedure*—A retesting procedure to confirm or deny measurably significant evidence of a release (Title 27, §§ 20415(e)(8)(E), 20420(j)(1)-(3)).

⁹ If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to onsite waste management activities, the Discharger may request modification of the WQPS.

¹⁰ To the extent that surface water monitoring is included in the Detection Monitoring Program.

9. General Reporting Provisions

a. Transmittal Letters

Each report submitted under this MRP shall be accompanied by a Transmittal Letter providing a brief overview of the enclosed report, as well as the following:

- i. Any violations found since the last report was submitted, a description of all actions undertaken to correct the violation (referencing any previously submitted time schedules for compliance), and whether the violations were corrected; and
- ii. A statement from the submitting party, or its authorized agent, signed under penalty of perjury, certifying that, to the best of the signer's knowledge, the contents of the enclosed report are true, accurate and complete.

b. Monitoring Data and Reports

i. Electronic Submission via GeoTracker

All reports with monitoring data (e.g., SMRs and AMRs) shall be submitted electronically via the State Water Board's [Geotracker Database](https://geotracker.waterboards.ca.gov) (<https://geotracker.waterboards.ca.gov>). After uploading a report, the Discharger shall notify Central Valley Water Board staff via email at CentralVallySacramento@WaterBoards.ca.gov. The following information shall be included in the body of the email:

Attention:	Title 27 Compliance & Enforcement Unit
Report Title:	[Title of Report]
GeoTracker Upload ID:	[5A480300001]
Facility Name:	[Recology Hay Road Landfill]
County:	Solano County
CIWQS Place ID:	[CW-244435]

ii. Data Presentation and Formatting

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible.

Additionally, data shall be summarized in a manner that clearly illustrates compliance/noncompliance with WDRs.

iii. Non-Detections / Reporting Limits

Unless the reporting limits (RL) are specified in the same table, non-detections and sub-RL concentrations shall be reported as “< [limit]” (e.g., “< 5 µg/L”).

iv. Units

Absent specific justification, all monitoring data shall be reported in the units specified herein.

c. Compliance with SPRRs

All reports submitted under this MRP shall comply with applicable provisions of the SPRRs, including those in Section I (*Standard Monitoring Specifications*) and Section J (*Response to Release*).

d. Additional Requirements for Monitoring Reports

Every monitoring report submitted under this MRP (e.g., SMRs [§ E.1], AMRs [§ E.2]) shall include a discussion of relevant field and laboratory tests, and the results of all monitoring conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

F. Record Retention Requirements

The Discharger shall maintain permanent records of all monitoring information, including without limitation: calibration and maintenance records; original strip chart recordings of continuous monitoring instrumentation; copies of all reports required by this MRP; and records of all data used to complete the application for WDRs. Such records shall be legible, and show the following for each sample:

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

4. A complete list of procedures used (including method of preserving the sample, and the identity and volumes of reagents used);
5. A calculation of results; and
6. The results of all analyses, as well as the MDL and PQL for each analysis (all peaks shall be reported).

LIST OF ATTACHMENTS

Attachment A—Volatile Organic Compounds, Short List
Attachment B—Dissolved Inorganics (Five-Year COCs)
Attachment C—Volatile Organic Compounds
Attachment D—Semi-Volatile Organic Compounds
Attachment E—Chlorophenoxy Herbicides (Five-Year COCs)
Attachment F—Organophosphorous Compounds (Five Year COCs)

ENFORCEMENT

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

ADMINISTRATIVE REVIEW

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

Attachment A— Constituents of Concern, Approved USEPA Analytical Methods

Constituent of Concern	USEPA Test Method
General Minerals (mg/L)	
pH	150.3
Bicarbonate Alkalinity	2320B
Calcium (dissolved)	200.7/600
Carbonate	2320B
Chloride	300
Magnesium (dissolved)	200.7/600
Phosphate	300
Potassium (dissolved)	200.7/600
Sodium (dissolved)	200.7/600
Sulfide	300
Nitrogen Compounds (mg/L)	
Ammonia Nitrogen	4500-NH ₃
Nitrate as N	300
Nitrite as N	300
Nitrogen (Nitrate + Nitrite)	353.2
Other Parameters	
Phosphorus, mg/L	365.3
Total Alkalinity, mg/L	2320B
Total Dissolved Solids, mg/L	2540C
Specific Conductance (EC), umhos/cm	2510
Total Organic Carbon, mg/L	415.1
Dissolved Inorganics (µg/L)	

RECOLOGY

RECOLOGY HAY ROAD LANDFILL AND JEPSON PRAIRIE ORGANICS

SOLANO COUNTY

**ATTACHMENT A— CONSTITUENTS OF CONCERN, APPROVED USEAP ANALYTICAL METHODS,
AND GROUNDWATER CONCENTRATION LIMITS**

Aluminum	6010
Antimony	7041
Arsenic	7062
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium (total)	6010
Cobalt	6010
Copper	6010
Iron	6010
Lead	7421
Manganese	6010
Mercury	7470A
Nickel	7521
Selenium	7742
Sulfate	9030B
Silver	6010
Thallium	7841
Tin	6010
Vanadium	6010
Zinc	6010
Volatile Organic Compounds (µg/L)	8260B
Semi-Volatile Organic Compounds (µg/L):	8270
Chlorophenoxy Herbicides (µg/L)	8151A
Organophosphorus Compounds	8141B

Attachment B—Dissolved Inorganics (Five-Year COCs)

Dissolved Inorganics List

Constituent	Analytical Method	Geotracker Code
Aluminum	USEPA Method 6010	AL
Antimony	USEPA Method 7041	SB
Arsenic	USEPA Method 7062	AS
Barium	USEPA Method 6010	BA
Beryllium	USEPA Method 6010	BE
Cadmium	USEPA Method 7131A	CD
Chromium	USEPA Method 6010	CR
Cobalt	USEPA Method 6010	CO
Copper	USEPA Method 6010	CU
Cyanide	USEPA Method 9010C	CN
Iron	USEPA Method 6010	FE
Lead	USEPA Method 7421	PB
Manganese	USEPA Method 6010	MN
Mercury	USEPA Method 7470A	HG
Nickel	USEPA Method 7521	NI
Selenium	USEPA Method 7742	SE
Silver	USEPA Method 6010	AG
Sulfide	USEPA Method 9030B	S
Thallium	USEPA Method 7841	TL
Tin	USEPA Method 6010	SN

Constituent	Analytical Method	Geotracker Code
Vanadium	USEPA Method 6010	V
Zinc	USEPA Method 6010	ZN

Attachment C—Volatile Organic Compounds

USEPA Method 8260, Extended List

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

ATTACHMENT C—VOLATILE ORGANIC COMPOUNDS

Volatile Organic Compound	Geotracker Code
m Dichlorobenzene(1,3 Dichlorobenzene)	DCBZ13
p Dichlorobenzene (1,4 Dichlorobenzene)	DCBZ14
trans 1,4 Dichloro 2 butene	DCBE14T
Dichlorodifluoromethane (CFC 12)	FC12
1,1 Dichloroethane (Ethylidene chloride)	DCA11
1,2 Dichloroethane (Ethylene dichloride)	DCA12
1,1 Dichloroethylene (1, I Dichloroethene; Vinylidene chloride)	DCE11
cis 1,2 Dichloroethylene (cis 1,2 Dichloroethene)	DCE12C
trans 1,2 Dichloroethylene (trans 1,2 Dichloroethene)	DCE12T
1,2 Dichloropropane (Propylene dichloride)	DCPA12
1,3 Dichloropropane (Trimethylene dichloride)	DCPA13
2,2 Dichloropropane (Isopropylidene chloride)	DCPA22
1,1 Dichloropropene	DCP11
cis 1,3 Dichloropropene	DCP13C
trans 1,3 Dichloropropene	DCP13T
Di-isopropylether (DIPE)	DIPE
Ethanol	ETHANOL
Ethyltertiary butyl ether	ETBE
Ethylbenzene	EBZ
Ethyl methacrylate	EMETHACRY
Hexachlorobutadiene	HCBU
2 Hexanone (Methyl butyl ketone)	HXO2

ATTACHMENT C—VOLATILE ORGANIC COMPOUNDS

Volatile Organic Compound	Geotracker Code
Isobutyl alcohol	ISOBTOH
Methacrylonitrile	METHACRN
Methyl bromide (Bromomethane)	BRME
Methyl chloride (Chloromethane)	CLME
Methyl ethyl ketone (MEK; 2 Butanone)	MEK
Methyl iodide (Iodomethane)	IME
Methyl t-butyl ether	MTBE
Methyl methacrylate	MMTHACRY
4 Methyl 2 pentanone (Methyl isobutyl ketone)	MIBK
Methylene bromide (Dibromomethane)	DBMA
Methylene chloride (Dichloromethane)	DCMA
Naphthalene	NAPH
Propionitrile (Ethyl cyanide)	PACN
Styrene	STY
Tertiary amyl methyl ether	TAME
Tertiary butyl alcohol	TBA
1,1,1,2 Tetrachloroethane	TC1112
1,1,2,2 Tetrachloroethane	PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)	PCE
Toluene	BZME
1,2,4 Trichlorobenzene	TCB124

ATTACHMENT C—VOLATILE ORGANIC COMPOUNDS

Volatile Organic Compound	Geotracker Code
1,1,1 Trichloroethane (Methylchloroform)	TCA111
1,1,2 Trichloroethane	TCA112
Trichloroethylene (Trichloroethene; TCE)	TCE
Trichlorofluoromethane (CFC 11)	FC11
1,2,3 Trichloropropane	TCPR123
Vinyl acetate	VA
Vinyl chloride (Chloroethene)	VC
Xylene (total)	XYLENES

Attachment D—Semi-Volatile Organic Compounds

USEPA Methods 8270C or 8270D Base, Neutral & Acids Extractables List

Constituent	Geotracker Code
Acenaphthene	ACNP
Acenaphthylene	ACNPY
Acetophenone	ACPHN
2 Acetylaminofluorene (2 AAF)	ACAMFL2
Aldrin	ALDRIN
4 Aminobiphenyl	AMINOBP4
Anthracene	ANTH
Benzo[a]anthracene (Benzanthracene)	BZAA
Benzo[b]fluoranthene	BZBF
Benzo[k]fluoranthene	BZKF
Benzo[g,h,i]perylene	BZGHIP
Benzo[a]pyrene	BZAP
Benzyl alcohol	BZLAL
Bis(2 ethylhexyl) phthalate	BIS2EHP
alpha BHC	BHCALPHA
beta BHC	BHCBETA
delta BHC	BHCDELTA
gamma BHC (Lindane)	BHCGAMMA
Bis(2 chloroethoxy) methane	BECEM

ATTACHMENT D— SEMI-VOLATILE ORGANIC COMPOUNDS

Constituent	Geotracker Code
Bis(2 chloroethyl) ether (Dichloroethyl ether)	BIS2CEE
Bis(2 chloro 1 methylethyl) ether (Bis(2 chloroisopropyl) ether; DCIP)	BIS2CIE
4 Bromophenyl phenyl ether	BPPE4
Butyl benzyl phthalate (Benzyl butyl phthalate)	BBP
Chlordane	CHLORDANE
p Chloroaniline	CLANIL4
Chlorobenzilate	CLBZLATE
p Chloro m cresol (4 Chloro 3 methylphenol)	C4M3PH
2 Chloronaphthalene	CNPH2
2 Chlorophenol	CLPH2
4 Chlorophenyl phenyl ether	CPPE4
Chrysene	CHRYSENE
o Cresol (2 methylphenol)	MEPH2
m Cresol (3 methylphenol)	MEPH3
p Cresol (4 methylphenol)	MEPH4
4,4' DDD	DDD44
4,4' DDE	DDE44
4,4' DDT	DDT44
Diallate	DIALLATE
Dibenz[a,h]anthracene	DBAHA
Dibenzofuran	DBF

ATTACHMENT D— SEMI-VOLATILE ORGANIC COMPOUNDS

Constituent	Geotracker Code
Di n butyl phthalate	DNBP
3,3' Dichlorobenzidine	DBZD33
2,4 Dichlorophenol	DCP24
2,6 Dichlorophenol	DCP26
Dieldrin	DIELDRIN
Diethyl phthalate	DEPH
p (Dimethylamino) azobenzene	PDMAABZ
7,12 Dimethylbenz[a]anthracene	DMBZA712
3,3' Dimethylbenzidine	DMBZD33
2,4 Dimehtylphenol (m Xylenol)	DMP24
Dimethyl phthalate	DMPH
m Dinitrobenzene	DNB13
4,6 Dinitro o cresol (4,6 Dinitro 2 methylphenol)	DN46M
2,4 Dinitrophenol	DNP24
2,4 Dinitrotoluene	DNT24
2,6 Dinitrotoluene	DNT26
Di n octyl phthalate	DNOP
Diphenylamine	DPA
Endosulfan I	ENDOSULFANA
Endosulfan II	ENDOSULFANB
Endosulfan sulfate	ENDOSULFANS
Endrin	ENDRIN

ATTACHMENT D— SEMI-VOLATILE ORGANIC COMPOUNDS

Constituent	Geotracker Code
Endrin aldehyde	ENDRINALD
Ethyl methanesulfonate	EMSULFN
Famphur	FAMPHUR
Fluoranthene	FLA
Fluorene	FL
Heptachlor	HEPTACHLOR
Heptachlor epoxide	HEPT-EPOX
Hexachlorobenzene	HCLBZ
Hexachlorocyclopentadiene	HCCP
Hexachloroethane	HCLEA
Hexachloropropene	HCPR
Indeno(1,2,3 c,d) pyrene	INP123
Isodrin	ISODRIN
Isophorone	ISOP
Isosafrole	ISOSAFR
Kepone	KEP
Methapyrilene	MTPYRLN
Methoxychlor	MTXYCL
3 Methylcholanthrene	MECHLAN3
Methyl methanesulfonate	MMSULFN
2 Methylnaphthalene	MTNPH2
1,4 Naphthoquinone	NAPHQ14

ATTACHMENT D— SEMI-VOLATILE ORGANIC COMPOUNDS

Constituent	Geotracker Code
1 Naphthylamine	AMINONAPH1
2 Naphthylamine	AMINONAPH2
o Nitroaniline (2 Nitroaniline)	NO2ANIL2
m Nitroaniline (3 Nitroaniline)	NO2ANIL3
p Nitroaniline (4 Nitroaniline)	NO2ANIL4
Nitrobenzene	NO2BZ
o Nitrophenol (2 Nitrophenol)	NTPH2
p Nitrophenol (4 Nitrophenol)	NTPH4
N Nitrosodi n butylamine (Di n butylNitrosamine)	NNSBU
N Nitrosodiethylamine (Diethylnitrosamine)	NNSE
N Nitrosodimethylamine (Dimethylnitrosamine)	NNSM
N Nitrosodiphenylamine (Diphenylnitrosamine)	NNSPH
N Nitrosodipropylamine (N Nitroso N dipropylamine; Di n propylNitrosamine)	NNSPR
N Nitrosomethylethylamine (Methylethylnitrosamine)	NNSME
N Nitrosopiperidine	NNSPPRD
N Nitrosopyrrolidine	NNSPYRL
5 Nitro o toluidine	TLDNONT5
Pentachlorobenzene	PECLBZ
Pentachloronitrobenzene (PCNB)	PECLNO2BZ
Pentachlorophenol	PCP
Phenacetin	PHNACTN

ATTACHMENT D— SEMI-VOLATILE ORGANIC COMPOUNDS

Constituent	Geotracker Code
Phenanthrene	PHAN
Phenol	PHENOL
p Phenylenediamine	ANLNAM4
Polychlorinated biphenyls (PCBs; Aroclors)	PCBS
Pronamide	PRONAMD
Pyrene	PYR
Safrole	SAFROLE
1,2,4,5 Tetrachlorobenzene	C4BZ1245
2,3,4,6 Tetrachlorophenol	TCP2346
o Toluidine	TLDNO
Toxaphene	TOXAP
2,4,5 Trichlorophenol	TCP245
0,0,0 Triethyl phosphorothioate	TEPTH
sym Trinitrobenzene	TNB135

Attachment E—Chlorophenoxy Herbicides (Five-Year COCs)

USPEA Method 8151A List

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

**Attachment F—Organophosphorous Compounds
(Five Year COCs)**

USEPA Method 8141B List

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