CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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

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

Redding Office
364 Knollcrest Drive #205
Redding, CA 96002

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

MONITORING & REPORTING PROGRAM R5-2024-0002

ORDER INFORMATION

Order Type(s):	Monitoring & Reporting Program (MRP)
Status:	ADOPTED
Program:	Title 27 Discharges to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	Forward, Inc., an Arizona corporation & Republic Services, Inc., a Delaware corporation
Facility:	Forward Landfill
Address:	9999 South Austin Road, Manteca CA 95336
County:	San Joaquin County
Parcel Nos.:	181-150-07, 181-150-08, 181-150-09, 181-150-010, 201-060-01, 201-060-02, 201-060-03, 201-060-04, 201-060-05 and 201-070-01
WDID:	5B390306001
Prior Order(s):	R5-2017-0703, R5-2014-0006, R5-2008-0714, and R5-2003-0049

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 16 February 2024.

Date: 2024.03.08 17:37:09 -08'00'

PATRICK PULUPA,
Executive Officer

REGIONAL BOARD INFORMATION

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

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

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

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

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE INDEX

TABLE INDEX

GLOSSARY

ALR.....Action Leakage Rate

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

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

GLOSSARY

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

MRP .....Monitoring and Reporting Program

MSW .....Municipal Solid Waste

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 Forward, Inc., an Arizona corporation and subsidiary of Republic Services, Inc., a Delaware corporation (collectively, Discharger), which owns and operates the Forward Landfill (Facility) in San Joaquin County. Additional information regarding the Facility is set forth in the enumerated findings of Waste Discharge Requirements Order R5-2024-0002 (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), sections 21720 and 20380-20435, the findings and provisions of this Order are 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.

MONITORING & REPORTING PROGRAM

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

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. Groundwater, unsaturated zone and surface water[1] detection monitoring networks shall be revised (as needed) with the construction of each new landfill cell or module.

1. Groundwater

a. Required Network—The Facility's groundwater monitoring well network consists of the wells listed in **Table 1**.[2] As of the date of this Order, the network does not meet the requirements of Title 27. (Title 27, § 20415, subd. (b).) WDRs Order No. R5-2024-0002, requires the Discharger to conduct a review of the monitoring well network due to a potential data gap along the northeastern corner of the Facility. Installation of additional groundwater monitoring wells may be required to properly monitor groundwater flow direction and provide for the earliest detection of a release from the waste management unit in that area.

Table 1—Groundwater Monitoring Network

Well	Program	Point of Compliance (WQPS)	Zone	Status
MW-22, -23R, -24 AMW-2	Upgradient	No	Shallow	Operational
MW-1A, -13A, -14A, -15, -21, -25, -26 AMW-5R	Detection	Yes	Shallow	Operational

[1] I.e., to the extent that surface water detection monitoring is required under this Order.

[2] Non-background monitoring wells at the Point of Compliance constitute "Monitoring Points" for purposes of the Water Quality Protection Standard (WQPS).

Well	Program	Point of Compliance (WQPS)	Zone	Status
MW-1B, -2B, -3B, -13B, -14B	Piezometers	Yes	Shallow	Operational
CDCR-PZ-1, -2, -3	Piezometers	No	Shallow	Operational
MW-2A, -3A, -16, -17R, -19R AMW-1, -4, -12, -14, -18, -22S, -23S, -33S, -34S, -35S, -36S, -37S, -38S, -39S, -40S, -41S, -42S, -43S, -44, -45, -46, -50S, -51S, -52S, -54, -55, -57S, -58S, -59S	Corrective Action	No	Shallow	Operational
MW-10 AMW-7, -11, -13, -13B, -18B, -19, -19BR, -21S, -21, -22, -23M, -24R, -24SR, -25, -26R, -29S, -29, -30S, -30, -31S, -31, -32S, -32, -35, -40M, -41M, -42M, -43M, -47, -48, -49-, -50M, -51M, -52M, -56, -57M, -58M, -59M	Corrective Action	No	Intermediate	Operational
AMW-6, -23D, -28, -33, -34, -34M, -36, -37	Corrective Action	No	Deep	Operational
Residential Domestic Wells (See Attachment G) DW-9690, 7898-A, 8106-A	Corrective Action	No	Intermediate	Operational

See Glossary for definitions of terms and abbreviations in table.
Note:
1. The Residential Domestic Wells are listed here in corrective action as part of Cleanup and Abatement Order (CAO) R5-2017-0703. All sampling and reporting of the Domestic

Well Sampling Program must follow the guidelines as set forth from CAO. The requirement to sample these wells can only be changed with rescission of the CAO.

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, subds. (e)-(f).)

Table 2—Groundwater Detection Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Groundwater Elevation	ELEV	Ft. & 100th, M.S.L.	Quarterly	Quarterly
Temperature	TEMP	°F	Quarterly	Quarterly
Electrical Conductivity	SC	µmhos/cm	Quarterly	Quarterly
pH	PH	pH Units	Quarterly	Quarterly
Turbidity	TURB	NTUs	Quarterly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

Table 3—Groundwater Detection Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
TDS	TDS	mg/L	Quarterly	Quarterly
Chloride	CL	mg/L	Quarterly	Quarterly
Carbonate	CACO3	mg/L	Quarterly	Quarterly
Bicarbonate	BICACO3	mg/L	Quarterly	Quarterly
Nitrate - Nitrogen	NO3N	mg/L	Quarterly	Quarterly
Sulfate	SO4	mg/L	Quarterly	Quarterly

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Calcium	CA	mg/L	Quarterly	Quarterly
Magnesium	MG	mg/L	Quarterly	Quarterly
Potassium	K	mg/L	Quarterly	Quarterly
Sodium	NA	mg/L	Quarterly	Quarterly
Strontium	SR	mg/L	Quarterly	Quarterly
Short List VOCs (Attachment A)	(*various*)	µg/L	Quarterly	Quarterly
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	Quarterly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

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 2018 and shall be analyzed again in 2023. (Title 27, § 20420, subd. (g).) Testing to continue alternating between first and third quarters every 5 years.

Table 4—Groundwater Detection Monitoring, Five-Year COCs

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Freq.
Chemical Oxygen Demand	COD	mg/L	Every 5 Years
Total Organic Carbon	TOC	mg/L	Every 5 Years
Dissolved Inorganics (Attachment B)	(*various*)	µg/L	Every 5 Years
Extended List VOCs (Attachment C)	(*various*)	µg/L	Every 5 Years

Five-Year Constituent	GeoTracker Code	Units	Sampling & Reporting Freq.
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.

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**.[3] (Title 27, § 20415, subd. (b)(1).)

Table 5—Groundwater Detection Monitoring, Groundwater Conditions

Groundwater Condition	GeoTracker Code	Monitoring Freq.	Reporting Freq.
Gradient	(*none*)	Quarterly	Semiannually
Flow Rate	(*none*)	Quarterly	Semiannually

2. Unsaturated Zone

a. **Required Network**—The Facility's unsaturated zone monitoring network consists of the lysimeter (LYS) monitoring points specified in **Table 6**. As of the date of this Order, the network does not meet the requirements of Title 27. (Title 27, § 20415, subd. (d).) The Discharger shall work with CVRWQCB to bring the facility back to compliance.

[3] To the extent feasible, 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).)

Table 6—Unsaturated Zone Monitoring Network

Monitoring Point	Device Type	Program	Monitored Unit	Status
E-1, E-2, W-1, W-2	Suction Lysimeter	Detection	F-North	Operational
LY-Pond-N, LY-Pond-S	Suction Lysimeter	Detection	F-West	Under construction
LY-BG-1	Suction Lysimeter	Background	Forward Unit	Operational
LY-A, -E1A, -E1B, -E2A, -E2B, D93A, D93B FU-03, -04W-A, -04W-B, -04E-A, -04E-B, -05-A, -05-B, -06-A, -06-B	Suction Lysimeter	Detection	Forward Unit	Operational
D-01S, -01N, -02 FU-03, -04W, -04E, -05, -06	Pan Lysimeter	Detection	Forward Unit	Operational, FU-05 lysimeter offline

See Glossary for definitions of terms and abbreviations in table.

b. **Soil Pore Gas (SPG) Monitoring**—Soil Pore Gas (SPG) shall be monitored for Methane and Method TO-15 VOCs[4] in accordance with **Table 7**, provided that samples may be prescreened to

[4] Volatile Organic Compounds associated with USEPA Method TO-15.

determine if such analyses will be required.[5] (Title 27, § 20420, subds. (e)-(f).)

Table 7—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	Quarterly
Methane	CH4	%	Quarterly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

c. Quarterly Lysimeter Inspection—Pan lysimeters shall be inspected **quarterly** for the presence of liquid, which shall then be analyzed for the Monitoring Parameters in **Table 8** (*Physical Parameters*) and **Table 9** (*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.

Table 8—Unsaturated Zone Detection Monitoring (Lysimeters), Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Electrical Conductivity	SC	µmhos/cm	Quarterly	Quarterly
pH	PH	pH Units	Quarterly	Quarterly
Volume of Removed Liquid	(*none*)	Gallons	Monthly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

[5] 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 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.

Table 9—Unsaturated Zone Detection Monitoring (Lysimeters), Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
TDS	TDS	mg/L	Quarterly	Quarterly
Chloride	CL	mg/L	Quarterly	Quarterly
Carbonate	CACO3	mg/L	Quarterly	Quarterly
Bicarbonate	BICACO3	mg/L	Quarterly	Quarterly
Nitrate - Nitrogen	NO3N	mg/L	Quarterly	Quarterly
Sulfate	SO4	mg/L	Quarterly	Quarterly
Calcium	CA	mg/L	Quarterly	Quarterly
Magnesium	MG	mg/L	Quarterly	Quarterly
Potassium	K	mg/L	Quarterly	Quarterly
Sodium	NA	mg/L	Quarterly	Quarterly
Short List VOCs (Attachment A)	(*various*)	µg/L	Quarterly	Quarterly
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	Quarterly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

d. **Five-Year COCs**—Every five years, liquid from each pan lysimeter shall be analyzed for the Five-Year COCs listed below in **Table 10**. Five-Year COCs were last monitored in 2018 and shall be analyzed again in 2023. (Title 27, § 20420, subd. (g).) Testing to continue alternating between first and third quarters every 5 years.

Table 10—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)	(*various*)	µg/L	Every 5 Years
Extended List 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.

3. **Surface Water**—Runoff from the Facility is collected in one or more sedimentation basins, which periodically flow to North Fork Littlejohns Creek and South Fork Littlejohns Creek, which may be affected by a release. (See Title 27, § 20415, subd. (c)(1).)

a. **Required Network**—The Facility's surface water monitoring network consists of the monitoring points listed in **Table 11**. As of the date of this Order, the network meets the requirements of Title 27. (See § 20415, subd. (c).)

Table 11—Surface Water Detection Monitoring Network

Monitoring Point	Program or Function	Location / Notes
FSW-1	Downstream	South Fork Littlejohns Creek; Operational
FSW-2	Background (Upstream)	South Fork Littlejohns Creek; Operational
ASW-1	Background (Upstream)	North Fork Littlejohns Creek; Operational
ASW-2	Downstream	North Fork Littlejohns Creek; Operational

See Glossary for definitions of terms and abbreviations in table.

b. Sample Collection and Analysis—Monitoring points in Table 11 shall be checked weekly for the presence of surface water. At least once a quarter, samples shall be collected from each monitoring point and analyzed for the Monitoring Parameters in **Table 12** (*Physical Parameters*) and **Table 13** (*Constituent Parameters*), in accordance with the specified schedule. (Title 27, § 20420, subds. (e)-(f).)

Table 12—Surface Water Detection Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Electrical Conductivity	SC	µmhos/cm	Quarterly	Quarterly
pH	PH	Std. Units	Quarterly	Quarterly
Turbidity	TURB	NTUs	Quarterly	Quarterly
Temperature	TEMP	°F	Quarterly	Quarterly
Flow to Surface Waters at Time of Sampling	(none)	Yes/No	Quarterly	Quarterly
Creek Inspection	(none)	Dry/Wet	Weekly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

Table 13—Surface Water Detection Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
TSS	TSS	mg/L	Quarterly	Quarterly
TDS	TDS	mg/L	Quarterly	Quarterly
Chloride	CL	mg/L	Quarterly	Quarterly
Carbonate	CACO3	mg/L	Quarterly	Quarterly
Bicarbonate	BICACO3	mg/L	Quarterly	Quarterly
Nitrate as Nitrogen	NO3N	mg/L	Quarterly	Quarterly
Sulfate	SO4	mg/L	Quarterly	Quarterly
Calcium	CA	mg/L	Quarterly	Quarterly
Magnesium	MG	mg/L	Quarterly	Quarterly
Potassium	K	mg/L	Quarterly	Quarterly
Sodium	NA	mg/L	Quarterly	Quarterly
TPH – Oil and Grease		mg/L	Quarterly	Quarterly
Short List VOCs (Attachment A)	(*various*)	µg/L	Quarterly	Quarterly
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	Quarterly	Quarterly

See Glossary for definitions of terms and abbreviations in table.

c. **Five-Year COCs**—The Discharger shall analyze surface water samples for the Five-Year COCs listed in **Table 14** Five-Year COCs were last monitored in 2018, and shall be analyzed again in

2023. (Title 27, § 20420, subd. (g).) Testing to continue alternating between first and third quarters every 5 years.

Table 14—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
Extended List 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.

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. (*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** (*Unsaturated Zone*) and **Table 11** (*Surface Water*).

i. Sumps have to clearly identify which waste management unit it is receiving leachate from.

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 below 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 **Surface Water**, those in Table 12 and Table 13;

ii. For **Groundwater**, those in Table 2 and Table 3; and

iii. For the **Unsaturated Zone**, those in Table 7, Table 8 and Table 9.

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 2018 Annual Monitoring Report and are due again in 2023. For the purposes of this MRP, the Five-Year COCs are listed in:

i. **Attachment B** (*Dissolved Inorganics*);

ii. **Attachment C** (*Extended List 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 14** (*Surface Water*), **Table 4** (*Groundwater*) and **Table 10** (*Unsaturated Zone*)

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 20415, subdivision (e)(8).[6] (Title 27, § 20400, subds. (a), (b).)

The Discharger last proposed revised Concentration Limits using groundwater data collected during the 4Q 2021 event, however the proposal includes revised concentration limits for several wells known to be impacted with inorganic constituents. Therefore, this MRP requires the discharger to propose, in its annual update of Concentration Limits, a method for screening out data from analysis that is related to impacts from a release from the landfill. The approved methods use establishment of monitoring systems for groundwater, surface water, and the unsaturated or vadose zone, including background and compliance monitoring points for each medium; constituents of concern (COCs); monitoring parameters; and a monitoring protocol and compliance period. Groundwater limits were calculated using intra-well tolerance limits for the southern half of the Facility (Old Forward Landfill). Inter-well

[6] 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.

tolerance limits were determined for the northern half of the Facility (Old Austin Road Landfill). Surface water limits are based on inter-station tolerance limits. All tolerance limits are based on a Type I error rate of alpha – 0.01 and a coverage of 95%.

Concentration Limits shall be proposed and/or updated by the Discharger every two years, in the Annual Monitoring Report submitted per **Section E.2**. As of the date of this Order, Concentration Limits were last specified in Fourth Quarter 2021/ Annual Water Quality Monitoring Report submited on February 2022, and shall be updated again as part of the 2024 Annual Monitoring Report, and again every two years thereafter.

With the completion of WMU FU-19, the various landfill units are considered contiguous units for the purpose of groundwater monitoring. The Discharger shall update concentration limits based on inter-well tolerance limits. Revised concentration limits shall be developed and updated thereafter once additional Point of Compliance groundwater monitoring wells have been established per the 15 March 2023 *Revised Work Plan for Additional Groundwater Monitoring Well Installations at the Point of Compliance at Forward Landfill* report.

Several proposed notable Concentration Limits, as set forth in the 2021 Annual Report, are set forth below in **Table 15 and Table 17**.[7]

If the Discharger fails to submit periodically updated concentration limits, as provided in this MRP, the existing contractions limits shall remain operative, provided that, where appropriate, the Executive Officer may revert to lower concentrations where warranted based on existing monitoring data.

[7] The Concentration Limits set forth in **Table 15** is only a partial list of values that are provided for general informational purposes only. These limits shall be superseded once updated values are submitted.

Table 15—Groundwater Concentration Limits for Southern Half (Old Forward Landfill)

Well	Analysis	pH (std units)	Barium (mg/L)	Chloride (mg/L)	Nitrate as N (mg/L)	Sulfate (mg/L)	TDS (mg/L)
MW-1	Intrawell	6.28-8.27	0.720	174	7.4	68.2	1,044
MW-1B	Intrawell	6.28-8.27	0.720	174	7.4	68.2	1,044
MW-2A	Intrawell	5.63-7.35	0.453	176	5.8	87.2	1,313
MW-3	Intrawell	6.42-8.48	0.310	122	10	58	672
MW-10	Intrawell	6.46-8.43	0.430	54	19	85.82	780
MW-13	Intrawell	6.00-7.46	0.658	100	8.4	59.8	1,149
MW-14	Intrawell	6.03-7.85	0.30	170.9	7.2	84.3	1,200
MW-15	Intrawell	6.32-8.37	0.335	132	8.3	91	839
MW-16	Intrawell	6.02-7.91	0.514	46	1.6	25	694
MW-17R	Intrawell	6.63-8.03	0.231	63	37.9	124	1,130
MW-19R	Intrawell	7.41-8.35	0.343	90	10.8	60.6	731
MW-21	Intrawell	6.45-8.22	0.441	55.4	0.52	24	760
MW-22	Intrawell	6.68-8.54	0.280	78	18.6	120	735
MW-23R	Intrawell	5.82-9.03	0.098	88	32.3	310	1,100
MW-24	Intrawell	6.47-8.03	0.140	82.3	62	234.8	1,005
MW-25	Intrawell	NE	0.153	8.2	1.1	21.9	287
MW-26	Intrawell	NE	0.120	7.7	1.2	24.5	301

See Glossary for definitions of terms and abbreviations in table.

Table 15 continued—Groundwater Concentration Limits

Well	Analysis	Bicarbonate (mg/L)	Carbonate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
MW-1	Intrawell	654	PQL	150	79.2	17
MW-1B	Intrawell	654	PQL	150	79.2	17
MW-2A	Intrawell	998	PQL	200.8	110	10
MW-3	Intrawell	437	PQL	121.8	51.3	9
MW-10	Intrawell	490	PQL	130	62	10
MW-13	Intrawell	931.9	PQL	160	89.3	10
MW-14	Intrawell	1,037	PQL	190	98.5	10.7
MW-15	Intrawell	522	PQL	127	59.7	9.7
MW-16	Intrawell	656	PQL	125.5	58.1	8.9
MW-17R	Intrawell	607.7	PQL	180	78	26.5
MW-19R	Intrawell	396	PQL	109.6	48.1	10.6
MW-21	Intrawell	692	PQL	130	64.1	8.3
MW-22	Intrawell	390	PQL	114	51.1	7.2
MW-23R	Intrawell	410	PQL	140	58	5.2
MW-24	Intrawell	390	PQL	170	64.1	7.8
MW-25	Intrawell	235	PQL	52.5	18.8	2.6
MW-26	Intrawell	199	PQL	51.6	21.9	3.2

Table 15 continued—Groundwater Concentration Limits

Well	Analysis	Sodium (mg/L)	Strontium (mg/L)	VOCs (ppb)
MW-1	Intrawell	97.5	1.73	ND
MW-1B	Intrawell	97.5	1.73	ND
MW-2A	Intrawell	112.8	2.06	ND
MW-3	Intrawell	57.9	1.42	ND
MW-10	Intrawell	58.3	1.59	ND
MW-13	Intrawell	106.6	1.92	ND
MW-14	Intrawell	93.52	2.20	ND
MW-15	Intrawell	80.5	1.67	ND
MW-16	Intrawell	55.1	1.50	ND
MW-17R	Intrawell	99.28	1.80	ND
MW-19R	Intrawell	65	1.24	ND
MW-21	Intrawell	56.8	1.31	ND
MW-22	Intrawell	59.3	1.08	ND
MW-23R	Intrawell	90.1	1.16	ND
MW-24	Intrawell	102.6	1.42	ND
MW-25	Intrawell	15.7	0.56	ND
MW-26	Intrawell	16.7	0.52	ND

Table 16— Notable Surface Water Concentration Limits, 2021 Annual Report

Well	pH (std units)	Chloride (mg/L)	Nitrate as N (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Bicarbonate (mg/L)	VOC (ppb)
ASW-1	2.523 - 13.16	29.3	3.9	45	400	156.9	ND
FSW-2	5.075 - 10.72	45.01	18	94.56	615.6	258.9	ND

Table 16 continued— Notable Surface Water Concentration Limits, 2021 Annual Report

Well	Carbonate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	TSS (mg/L)	Oil and Grease (mg/L)
ASW-1	11	37	20.2	29.53	33.5	NC	PQL
FSW-2	39	60	30	8.122	37.26	NC	PQL

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).

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. **Groundwater Corrective Action**—In addition to parameters in Table 2 (*Field Parameters*) and Table 3 (*Monitoring Parameters*), corrective action monitoring wells for shall be sampled for additional constituents as specified in **Table 17**.

Table 17—Groundwater Corrective Action Monitoring, Additional Constituent Parameters

Well	Zone	Additional Constituents	Sampling Freq.
Sump WMU FU-04	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual
Sump WMU FU-06	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual
Sump associated with WMU FU-08 (Sump FU-19)	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual
Sump associated with WMU FU-13 (Sump FU-19 and FU-17)	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual
Sump associated with WMU FU-14 (Sump FU-19 and FU-23)	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual

See Glossary for definitions of terms and abbreviations in table.

2. **Unsaturated Zone Corrective Action**—In addition to parameters in Table 8 (*Field Parameters*) and Table 9 (*Monitoring Parameters*),

unsaturated zone corrective action monitoring points for shall be sampled for additional constituents as specified in **Table 18**.

Table 18—Unsaturated Zone Corrective Action Monitoring, Additional Parameters

Well	Zone	Additional Constituents	Sampling Freq.
FU-04	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual
FU-05	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual
FU-06	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual
FU-10	Shallow	pH and dissolved inorganics/metals (Attachment B, C, D, E, and F)	Semiannual

See Glossary for definitions of terms and abbreviations in table.

3. **Groundwater Extraction Well System**—The Facility's current network of groundwater extraction wells is summarized in **Table 19**. The hours of operation for this system shall be recorded and reported as part of the Semiannual Monitoring Report (SMR).

Table 19—Groundwater Corrective Action, Extraction Well Network

Well	Monitored Units
EW-1	Forward Unit
EW-2	Forward Unit
EW-3R	Forward Unit

Well	Monitored Units
EW-4	Forward Unit
EW-5	Forward Unit
CDCR-EW-1	California Department of Corrections and Rehabilitation

See Glossary for definitions of terms and abbreviations in table.

a. Additional groundwater extraction wells are to be installed following the ongoing compliance with Cleanup and Abatement Order (CAO) R5-2017-0703. Extraction wells installed as a result of the CAO's requirements will be tested for the five-year COC list and follow a specified sampling schedule following the initial results.

4. **Landfill Gas Corrective Action**—The Facility's landfill gas (LFG) corrective action system currently consists of the monitoring system seen in **Table 21.** 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** and sampling locations shall be clearly labeled in report (sampling port identification). Additionally, system performance shall be monitored in accordance with **Table 20**.

Table 20—Landfill Gas Corrective Action Monitoring, Control System Performance

Parameter	Units	Sampling Freq.	Reporting Freq.
Control System Runtime	Hours	N/A	Semiannual
Control System Downtime	%	N/A	Semiannual
Temperature into Plant	°F	Monthly	Semiannual
Flare Combustion Temperature	°F	Monthly	Semiannual
System Vacuum	psi	Monthly	Semiannual

Parameter	Units	Sampling Freq.	Reporting Freq.
Totalized Flow into Plant	ft^3	Monthly	Semiannual
Totalized Flow Rate into Plant	ft^3 / min	Monthly	Semiannual
VOCs per USEPA Method TO-15 in Influent	µg / cm	Monthly	Semiannual
Methane in Influent	%	Monthly	Semiannual

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 21**.

LFG samples shall be collected from the network in Table 21 and analyzed for the Monitoring Parameters specified in Table 22.

Table 21—Landfill Gas Corrective Action, Extraction Well Network

Monitoring Point	Monitoring Unit
A11-01, -02, -06, -09, -11, -13S, -13D, -19D A12-01, -02, -03, -04, -06D, -08S, -08D, -09D, -12S, -13S, -14, -17 A13-01, -02, -03, -04 A14-01, -03, -04D, -06, -08, -09, -11 A16-01, -03S, -03D, -04S, -06, -07, -08, -09S, -09D, -13 A17-01, -02, -03S, -05, -06S, -06D, -07, -09S, -09D, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20 AO37RS, AO37RD, AO56RS, AO56RD, AO59RS, AO61RS, AO61RD East Manifold Well 01, 03, 04, 08, 09 West Manifold Trench Well 5, 6, 7 F12-01, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13, -14, -15, -17 F13-01, FOFU0304-LCRS F15R-1, -2, -3 FOEW-22, -46, -51, -79, -80, -81, -82, -83, -84, -87, -93, A06 FOFU03-02, -09 FOFU04-06, -07, -14R, -15R, -21, -27R, HC	Forward Unit

Monitoring Point	Monitoring Unit
FOFU05-02, -08R, -09, -10R, -17, -LCRS FOFU06-03, -07, HC, -LCRS FORSVE01, 02, 03, 04, 05, 06, 07, 08, 09, 10 FU04ELCS, WLCS Top Deck Trench Top Deck Trench Top Deck Well 02, 03, 04, 07, 13 AREW-35, -39, -72 FOA1801S, 01D, 05S, 05D, 09S, 09D, 10S, 10D FO-A1806, 07, 08 FO-A1901, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 15, 17, 18, 19, 20, 21, 22, 23 FO-A2001, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11L, 11U, 12L, 12U, 13L, 13U, 14L, 14U, 15L, 15U, 16L, 16U, 18, 19, 20, 21, 22, 23, 24 WMU D-01N LCRS D-02 LCRS A21-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13, -14, -15, -16, -17	

Table 22—Landfill Gas Corrective Action, Extraction Well Network Monitoring Parameters

Monitoring Parameter	Units	Sampling Freq.	Reporting Freq.
Atmospheric Temperature	°F	Monthly	Monthly
Atmospheric Pressure	mm Hg	Monthly	Monthly
Methane	% by Vol.	Monthly	Monthly
Carbon Dioxide	% by Vol.	Monthly	Monthly
Oxygen	% by Vol.	Monthly	Monthly
Remainder Gas	% by Vol.	Monthly	Monthly
Gas Temperature at Each Well (Before Adjustment)	°F	Monthly	Monthly

Monitoring Parameter	Units	Sampling Freq.	Reporting Freq.
Gas Temperature at Each Well (After Adjustment)	°F	Monthly	Monthly
Initial Static Pressure in Wellhead	Inches H_2O	Monthly	Monthly
Adjusted Static Pressure in Wellhead	Inches H_2O	Monthly	Monthly

See Glossary for definitions of terms and abbreviations in table.

b. **Probe Network**—The Facility's network of LFG probes, installed to address a release to the unsaturated zone and/or groundwater, is set forth in **Table 23**. These probes shall be monitored in accordance with the Monitoring Parameters in Table 24.

Table 23—Perimeter Landfill Gas Corrective Action, Probe Network

LFG Probe	Zone
GP-1A, -2A, -3A, -4A, -5A, -6A, -7R, -8R, 9R, -10, -10R, -10RB, - 11, -11R, -12, -12R, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -28R	Multi-level, shallow and deep

Table 24—Landfill Gas Corrective Action, Probe Network Monitoring Parameters

Parameter	Units	Sampling Freq.	Reporting Freq.
Atmospheric Temperature	°F	Monthly	Monthly
Atmospheric Pressure	PSIG	Monthly	Monthly
Methane	% by Vol.	Monthly	Monthly
Carbon Dioxide	% by Vol.	Monthly	Monthly
Oxygen	% by Vol.	Monthly	Monthly

Parameter	Units	Sampling Freq.	Reporting Freq.
Remainder Gas	% by Vol.	Monthly	Monthly
Initial Static Pressure in Wellhead	Inches H_2O	Monthly	Monthly
Adjusted Static Pressure in Wellhead	Inches H_2O	Monthly	Monthly
Gas Temperature at Each Well (Before Adjustment)	°F	Monthly	Monthly
Gas Temperature at Each Well (After Adjustment)	°F	Monthly	Monthly
Volatile Organic Compounds per USEPA Method TO-15	$\mu g/cm^3$	Semiannually	Semiannually

See Glossary for definitions of terms and abbreviations in table.

D. Additional Facility Monitoring

1. Leachate Collection & Removal System (LCRS)—The Discharger shall operate and maintain leachate collection and removal system (LCRS) sumps (provided in **Table 25**), conduct annual testing of each LCRS, and conduct monitoring of any detected leachate seeps in accordance with Title 27 and the following provisions.

a. Annual LCRS Testing—All LCRSs shall be tested annually to demonstrate proper operation, with the results of each test being compared to the results of prior testing. The results of these tests shall be reported to the Central Valley Water Board in the Annual Monitoring Report per Section E.2. (See Title 27, § 20340, subd. (d).)

b. Sump Inspection—All WMU LCRS sumps shall have a flow meter installed on the discharge pipe in order for the leachate volume to be recorded in gallons/day and reported quarterly. All WMU LCRS sumps shall be visually inspected weekly to assure the pump alarms are still operating as designed. As provided in Table 26, the

total flow and flow rate for leachate in each sump shall be recorded after each inspection and reported quarterly per Section E.1.

Table 25—LCRS Sump Monitoring Network

Monitoring Point	Monitored Unit	Location / Notes
T1	Forward Unit	WMU A
T2	Forward Unit	WMU A
T3	Forward Unit	WMU A
D-87	Forward Unit	WMU D-87
D-88 A/B	Forward Unit	WMU D-88
D-89	Forward Unit	WMU D-89
D-93/94	Forward Unit	WMU D-93/94
D-01 N/S	Forward Unit	WMU D-01
D-02	Forward Unit	WMU D-02
FU-03	Forward Unit	WMU F-03
FU-04 E/W	Forward Unit	WMU F-04
FU-05	Forward Unit	WMU F-05
FU-06	Forward Unit	WMU F-06
FU-17	Forward Unit	WMU FU-17
FU-19 E/W	Forward Unit	WMU FU-19
FU-23	Forward Unit	WMU FU-23
F-North	Surface Impoundment	F-North
F-West	Surface Impoundment	F-West

Table 26—LCRS Sump Monitoring, Monthly Inspection Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Total Flow	(none)	Gallons	Continuously	Quarterly
Flow Rate	FLOW	Gallons/Day	Continuously	Quarterly

See Glossary for definitions of terms and abbreviations in table.

c. **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 26** and **Table 27**.[8] 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 27.

Table 27—LCRS Sump Monitoring, Parameters for Subsequent Monitoring

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Electrical Conductivity	SC	µmhos/cm	Quarterly	Quarterly
pH	PH	pH Units	Quarterly	Quarterly
pH of sumps associated with WMU FU-04, -06, -08, -13, and -14 (see Table 17 and Finding D.1.e)	PH	pH Units	Quarterly	Semiannually
TDS	TDS	mg/L	Quarterly	Semiannually

[8] The sampling and reporting schedules in Table 27 are applicable for subsequent monitoring only. When notifying Central Valley Water Board staff of the first detection of

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Chloride	CL	mg/L	Quarterly	Semiannually
Carbonate	CACO3	mg/L	Quarterly	Semiannually
Bicarbonate	BICACO3	mg/L	Quarterly	Semiannually
Nitrate (as Nitrogen)	NO3N	mg/L	Quarterly	Semiannually
Sulfate	SO4	mg/L	Quarterly	Semiannually
Calcium	CA	mg/L	Quarterly	Semiannually
Magnesium	MG	mg/L	Quarterly	Semiannually
Potassium	K	mg/L	Quarterly	Semiannually
Sodium	NA	mg/L	Quarterly	Semiannually
Short List VOCs (Attachment A)	(various)	µg/L	Quarterly	Semiannually
1,2,3-Trichloropropane per Method SRL-524M-TCP	TCPR123	µg/L	Quarterly	Semiannually

See Glossary for definitions of terms and abbreviations in table.

d. **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 28. Five-Year COCs were last monitored in 2018 and shall be analyzed again in 2023.

---

leachate, the Discharger shall indicate when laboratory results are expected to be available.

Table 28—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)	(*various*)	µg/L	Every 5 Years
Dissolved Inorganics for sumps associated with FU-04, -06, -08, -13, and -14 (Attachment B and Table 17). See Finding D.1.e.	(*various*)	µg/L	Every 5 Years
Extended List 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.

e. Hazardous Waste LCRS Sump, Pan Lysimeters, and Groundwater Sampling

Per 16 May 2017 Water Code Section 13267 Order, leachate samples from all leachate sumps associated with FU-04, -06, -08, -13, and -14 shall monitor pH and dissolved inorganics/metals (see Attachment B, C, D, E, and F of MRP R5-2024-0002) on a semi-annual basis. The results of the monitoring shall be included with the Quarterly Monitoring Report. See **Table 27** and **Table 28**.

i. Pan lysimeter sampling— Per 16 May 2017 Water Code Section 13267 Order, pan lysimeters samples from all pan lysimeters associated with Future Units 4, 6, 8, 10, 13, and 14 shall monitor pH and dissolved inorganics/metals (see Attachment B, C, D, E, and F of MRP R5-2024-0002) on a

semi-annual basis The pan lysimeters identified for additional monitoring are identified as FU-04, FU-05, FU-06, and FU-10. The results of the monitoring shall be included with the Quarterly Monitoring Report.

ii. Groundwater sampling— Per 16 May 2017 Water Code Section 13267 Order, groundwater samples collected from existing upgradient groundwater monitoring well AMW-2 and existing downgradient monitoring wells AMW-1, AMW-4 and AMW-7 shall sample and monitor dissolved inorganics (see Attachment B, C, D, E, and F of MRP R5-2024-0002). The results of the monitoring shall be included with the Quarterly Monitoring Report.

2. Leachate Seepage—Leachate that seeps to the surface from any landfill WMU shall, immediately upon detection, be sampled and analyzed for the Monitoring Parameters in **Table 29** (*Physical Parameters*) and **Table 30** (*Constituent Parameters*). See **Section E.3** for Reporting Requirements. 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 29—Leachate Seep Monitoring, Physical Parameters

Physical Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
Total Flow	(none)	Gallons	Upon Detection	See MRP, Section 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.

Table 30—Leachate Seep Monitoring, Constituent Parameters

Constituent Parameter	GeoTracker Code	Units	Sampling Freq.	Reporting Freq.
TDS	TDS	mg/L	Upon Detection	See MRP, Section E.3
Chloride	CL	mg/L	(*same*)	(*same*)
Carbonate	CACO3	mg/L	(*same*)	(*same*)
Bicarbonate	BICACO3	mg/L	(*same*)	(*same*)
Nitrate as N	NO3N	mg/L	(*same*)	(*same*)
Sulfate	SO4	mg/L	(*same*)	(*same*)
Calcium	CA	mg/L	(*same*)	(*same*)
Magnesium	MG	mg/L	(*same*)	(*same*)
Potassium	K	mg/L	(*same*)	(*same*)
Sodium	NA	mg/L	(*same*)	(*same*)
Short List VOCs (Attachment A)	(various)	µg/L	(*same*)	(*same*)
Dissolved Inorganics (Attachment B)	(*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.

3. Cannery Waste Land Application

a. Soil Sampling— The Discharger shall collect representative soil samples from the land application areas at the beginning and end of each cannery season (documentation of exact location and depth shall be recorded) and daily wet weight and weekly composite waste samples from each cannery waste source. The Cannery Wastewater Quality Protection Standard was last updated

with data collected in the third quarter 2021 Annual Water Quality Monitoring Report (see section E.9). The soil and composite waste samples shall be analyzed for biochemical oxygen demand (BOD), total dissolved solids, total nitrogen, total Kjeldahl Nitrogen (TKN), nitrate, nitrite, iron, and manganese. In addition, the weekly total mass of nitrogen applied per acre shall be calculated and reported in the Quarterly Reports. A crop type sufficient to uptake 100% of the nitrogen must be planted, grown and harvested, following the cropping methodologies of the latest Nutrient Management Plan. The annual total nitrogen load shall not exceed 300 pounds per acre, unless a site specific loading rate is established by a Nutrient Management Plan approved by the Executive Officer. An annual land application monitoring summary shall be reported in the Annual Report (see section E.2). In addition, the following monitoring shall be conducted:

i. Inspection— Land application areas shall be inspected prior to discharge of putrescible cannery solids and non-putrescible rinsate/wastewater, and observations from those inspections shall be summarized for inclusion in the quarterly monitoring reports. The following items shall be noted in daily pre-application inspections:

(A) Evidence of erosion;

(B) Berm condition;

(C) Condition of flow control structure/valve (if any);

(D) Proper use of valves (i.e., check that all affected valves are closed or open, as required);

(E) Soil saturation;

(F) Ponding;

(G) Potential runoff to off-site areas;

(H) Potential and actual discharge to surface water;

(I) Accumulation of organic solids;

(J) Soil clogging;

(K) Odor that have the potential to be objectionable at or beyond the property boundary; and

(L) Vectors (insect, rodents).

b. Observations— Temperature, wind direction and approximate speed, and other relevant field conditions shall also be observed and recorded. The notations shall also document any corrective actions taken based on documented observations. A brief summary of observations documented, and corrective actions taken during each month shall be submitted quarterly.

c. Groundwater Monitoring Network— The Discharger shall operate and maintain a groundwater detection monitoring system for the cannery waste land application area. The Discharger shall revise the groundwater detection monitoring system (after review and approval by Central Valley Water Board staff) as needed. The groundwater monitoring network shall consist of the following:

ii. Well AMW-44, AMW-45, AMW-46, and AMW-14 (Downgradient Wells)

d. Sampling— These wells are already part of the approved Groundwater Monitoring System, are sampled quarterly and analyzed for the parameters and constituents listed in Table 2 and Table 3. Total Kjeldahl Nitrogen (TKN), nitrate (NO3), nitrite (NO2), nitrogen (N), iron (Fe), and manganese (Mn) concentrations from these wells shall be reported separately and compared with the land application area Water Quality Protection Standard in the reported Quarterly Monitoring Reports (section E.1). If the Discharger decides to cease discharge of the cannery waste, the Discharger would need to notify Central Valley Water Board and continue sampling the groundwater monitoring system for the constituents listed above for 8 semiannual sampling events.

4. Regular Visual Inspection—The Discharger shall perform regular visual inspections at the Facility in accordance with **Table 31** (*Criteria*) and

Table 32 (*Schedule*). Results of these regular visual inspections shall be included in Semiannual Monitoring Reports per **Section E.1**.

Table 31—Criteria for Regular Visual Inspections

Category	Criteria
Within Unit	• 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	• 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	• 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 32—Regular Visual Inspection Schedule

Category	**Wet Season** (1 Oct. to 30 April)	**Dry Season** (1 May to 30 Sept.)
Active Units	Weekly	Weekly
Inactive or Closed Units	Monthly	Quarterly

5. **Annual Facility Inspections**—Prior to **30 September** of each year, the Discharger shall inspect the Facility 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.

6. **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.

7. **Five-Year Iso-Settlement Surveys (Closed Landfills)**—Every five years, the Discharger shall conduct an iso-settlement survey of each closed landfill unit and produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer. For each portion of the landfill, this map shall show the total lowering of the surface elevation of the final cover, relative to the baseline topographic map. (Title 27, § 21090, subd. (e)(1)-(2).)
See **Section E.6** for Reporting Requirements.

8. **Action Leakage Rate**— The Discharger shall record the leakage rate for each Class II surface impoundment LCRS and report the value in gallons per day. The results shall be included in the information in the quarterly reports and compared to the Action Leakage Rates found in the WDRs under Facility Specification C.9. If monitoring of the flow rate into the LCRS shows an exceedance of the Action Leakage Rate required by the WDRs, the Discharger shall follow the procedures in the WDRs under "C. Facility Specifications". Tabulated leakage rates shall be included in the quarterly monitoring reports.

E. Reporting Requirements

Table 33—Summary of Required Reports

Section	Report	End of Reporting Period	Deadline
§ E.1	*Quarterly Monitoring Reports (QMRs)*	31 March, 30 June, 30 September, 31 December	**1 May, 1 August, 1 November, 1 February**
§ E.2	*Annual Monitoring Reports (AMRs)*	31 December	**1 February**
§ E.3	*Leachate Seep Reporting*	Continuous	**Immediately upon Discovery of Seepage** (*CVWQCB staff and California Office of Emergency Services notification*)

Section	Report	End of Reporting Period	Deadline
			Within 7 Days (*written report*)
§ E.4	*Annual Facility Inspection Reports*	31 October	**15 November**
§ E.5	*Major Storm Reporting*	Continuous	**Immediately after Damage Discovery** (*CVWQCB staff notification*) **Within 14 Days of Completing Repairs** (*written report, photos*)
§ E.6	*Survey and Iso-Settlement Mapping*	Every Five Years	**Every Five Years** (*Next Due in 2023*)
§ E.7	*Financial Assurances Reports*	31 December	**1 June**
§ E.8	*Forward Landfill Water Quality Protection Standard Reports*	Every Two Years	**Every Two Years** (*Next Due in 2024*)
§ E.9	*Cannery Waste Water Quality Protection Standard Reports*	Every Two Years	**Every Two Years** (*Next Due in 2024*)
§ E.10	*Annual Corrective Action Evaluation Report*	30 June	**1 August**

1. **Quarterly Monitoring Reports (QMRs)**—The Discharger shall submit Quarterly Monitoring Reports (QMRs) on **1 May**, **1 August, 1 November, a**nd **1 February**. QMRs 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. In tabulated format, all monitoring data required to be reported on a quarterly basis, including Groundwater Conditions and Monitoring Parameters. (See Section A.1 for additional requirements.)

d. For each groundwater monitoring point referenced in the QMR:

   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.

e. Evaluation of concentrations for all Constituent Parameters and Five-Year COCs (when analyzed), comparison to current Concentration Limits, and results of any Retesting Procedures per Section B.4.h.

f. 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.

g. Evaluation as to effectiveness of existing leachate monitoring and control facilities, and runoff/run-on control facilities.

h. 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*).

i. Summaries of all Regular Visual Inspections conducted per **Section D.3** during the reporting period.

j. 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*).

k. Laboratory statements of results of all analyses evaluating compliance with the WDRs.

l. 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.

m. Results from the cannery waste land application area monitoring.

n. Results from the surface impoundment monitoring.

o. Results from the corrective action monitoring.

p. A description of the measures undertaken to implement the “Forward Landfill Odor Control Management Plan and “Odor Impact Minimization Plan.” Results from the corrective action monitoring.

q. Tabulated leakage rates (in values of gallons per day) into the LCRS or LCRS sump with comparison to the Action Leakage Rate, and a discussion of required response if ALR was exceeded.

2. **Annual Monitoring Reports (AMRs)**—On **1 February** of each year,[9] 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. (See **Section E.9.b** for additional requirements for monitoring reports.)

   b. Graphs of historical trends for all Monitoring Parameters and Five-Year COCs (if such analyses were performed) with respect to each monitoring point over the five prior calendar years.[10]

   c. 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.

   d. All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file.

   e. 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,

   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.

---

[9] 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.

[10] 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.

h. A summary of the 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. Annual updates to the Concentration Limits for all Monitoring Parameters and WQPS Monitoring Points, in accordance with **Section B.4.g** of this Order.

k. To assess the progress of ongoing Corrective Action at the Facility, the following: By 31 July each year, the discharger shall submit an Annual Corrective Action Evaluation Report that includes at least the following:

i. A comparison of the site-wide Total VOC (TVOC) mass from the past four quarters to the TVOC mass threshold limit;

ii. a screening of the site-wide TVOC mass from the previous four quarters;

iii. a comparison of the individual well TVOC concentrations from the previous four quarters to their respective threshold limits;

iv. a comparison of the groundwater monitoring results from over time for each COC, for each well;

v. quarterly groundwater potentiometric surface maps from the previous year, incorporating data from the DMP, CAP and EMP monitoring wells:

vi. a discussion of the landfill cover, including any performance issues from the previous year;

vii. a summary and discussion of the previous year's monitoring data from the entire gas monitoring system and extraction network and;

viii. a discussion of overall corrective action progress, including any proposed enhancements to the program.

3. Leachate Seep Reporting—Upon discovery of seepage from any disposal area within the Facility, the Discharger shall i**mmediately 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 29 (*Physical Parameters*) and Table 30 (*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. **Facility Inspection Report**—By **15 November**, the Discharger shall submit a report with results of the Annual Facility Inspection per **Section D.4**. 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.5**, 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 1 February 2023.

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 changes[11] 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 water[12] 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 § B.4.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)).

---

[11] 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.

[12] To the extent that surface water monitoring is included in the Detection Monitoring Program.

f. *The Water Quality Protection Standard shall be updated every two years beginning in 2023 for each monitoring well using new and historical monitoring data*.

9. Cannery Waste Water Quality Protection Standard Report

a. Any proposed changes to the Cannery Waste WQPS components (§ D.3), other than periodic update of the Concentration Limits, shall be submitted in a WQPS Report for review and approval. The report shall be submitted by a Qualified Professional and contain the following:

i. Potential Affected Waterbodies;

ii. Map of Monitoring Points;

iii. Groundwater Movement;

iv. Statistical Method for Concentration Limits;

v. Detailed calculation and data of total nitrogen loading;

vi. Shall not exceed 300 pounds per acre, unless a site specific loading rate is established by a Nutrient Management Plan approved by the Executive Officer;

vii. Retesting Procedures; and

viii. The Cannery Waste WQPS shall be updated every two years beginning in 2023 for each monitoring well using new and historical monitoring data.

10. Annual Corrective Action Evaluation Report

a. By 31 July each year, the Discharger shall submit an Annual Corrective Action Evaluation Report that includes at least the following:

i. A comparison of the site-wide Total VOC (TVOC) mass from the past four quarters to the TVOC mass threshold limit;

ii. A screening of the site-wide TVOC mass from the previous four quarters;

iii. A comparison of the individual well TVOC concentrations from the previous four quarters to their respective threshold limits;

iv. A comparison of the groundwater monitoring results from over time for each COC, for each well;

v. Quarterly groundwater potentiometric surface maps from the previous year, incorporating data from DMP, CAP and EMP monitoring wells;

vi. A discussion of the landfill cover, including any performance issues from the previous year;

vii. A summary and discussion of the previous year's monitoring data from the entire gas monitoring system and extraction network and;

viii. A discussion of overall corrective action progress, including any proposed enhancements to the program.

11. 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 agency, 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). 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:	L10008827999
Facility Name:	Forward Landfill
County:	San Joaquin County
CIWQS Place ID:	225098

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., QMRs [§ 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, Extended List (Five-Year COCs)
Attachment D—Semi-Volatile Organic Compounds (Five-Year COCs)
Attachment E—Chlorophenoxy Herbicides (Five-Year COCs)
Attachment F—OrganoPhosphorous Compounds (Five-Year COCs)
Attachment G—Residential Domestic Wells

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 $1,000 per violation, per day, depending on the violation, pursuant to Water Code section 13268. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

ADMINISTRATIVE REVIEW

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

ATTACHMENT A—VOLATILE ORGANIC COMPOUNDS, SHORT-LIST

USEPA Method 8260B

Constituent	GeoTracker Code
Acetone	ACE
Acrylonitrile	ACRAMD
Benzene	BZ
Bromochloromethane	BRCLME
Bromodichloromethane	BDCME
Bromoform (Tribromomethane)	TBME
Carbon disulfide	CDS
Carbon tetrachloride	CTCL
Chlorobenzene	CLBZ
Chloroethane (Ethyl chloride)	CLEA
Chloroform (Trichloromethane)	TCLME
Dibromochloromethane (Chlorodibromomethane)	DBCME
1,2 Dibromo 3 chloropropane (DBCP)	DBCP
1,2 Dibromoethane (Ethylene dibromide; EDB)	EDB
o Dichlorobenzene (1,2 Dichlorobenzene)	DCBZ12
m Dichlorobenzene (1,3 Dichlorobenzene)	DCBZ13
p Dichlorobenzene (1,4 Dichlorobenzene)	DCBZ14
trans l ,4 Dichloro 2 butene	DCBE14T
Dichlorodifluoromethane (CFC-12)	FC12
1,1 Dichloroethane (Ethylidene chloride)	DCA11
1,2 Dichloroethane (Ethylene dichloride)	DCA12
1,1 Dichloroethylene (1,1 Dichloroethene; Vinylidene chloride)	DCE11
cis 1,2 Dichloroethylene (cis 1,2 Dichloroethene)	DCE12C
trans 1,2 Dichloroethylene (trans 1,2 Dichloroethene)	DCE12T
1,2 Dichloropropane (Propylene dichloride)	DCPA12
cis 1,3 Dichloropropene	DCP13C
trans 1,3 Dichloropropene	DCP13T
Di-isopropylether (DIPE)	DIPE

Ethanol ..... ETHANOL
Ethyltertiary butyl ether ..... ETBE
Ethylbenzene ..... EBZ
2 Hexanone (Methyl butyl ketone) HXO2
Hexachlorobutadiene ..... HCBU
Methyl bromide (Bromomethene) ..... BRME
Methyl chloride (Chloromethane) ..... CLME
Methylene bromide (Dibromomethane) ..... DBMA
Methylene chloride (Dichloromethane) ..... DCMA
Methyl ethyl ketone (MEK: 2 Butanone) ..... MEK
Methyl iodide (Iodomethane) ..... IME
Methyl t-butyl ether ..... MTBE
4-Methyl 2 pentanone (Methyl isobutylketone) ..... MIBK
Naphthalene ..... NAPH
Styrene ..... STY
Tertiary amyl methyl ether ..... TAME
Tertiary butyl alcohol ..... TBA
1,1,1,2 Tetrachloroethane TC1112
1,1.2,2 Tetrachloroethane ..... PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene) ..... PCE
Toluene ..... BZME
1,2,4-Trichlorobenzene TCB124
1,1,1 Trichloroethane (Methylchloroform) TCA111
1,1,2 Trichloroethane TCA112
Trichloroethylene (Trichloroethene) ..... TCE
Trichlorofluoromethane (CFC 11) FC11
1,2,3 Trichloropropane TCPR123
Vinyl acetate ..... VA
Vinyl chloride VC
Xylenes ..... XYLENES

ATTACHMENT B—DISSOLVED INORGANICS (FIVE-YEAR COCS)

Constituent / Analytical Method..... GeoTracker Code

Aluminum, USEPA Method 6010 ..... AL

Antimony, USEPA Method 7041 ..... SB

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

Silver, USEPA Method 6010 ..... AG

Tin, USEPA Method 6010 ..... SN

Vanadium, USEPA Method 6010 V

Molybdenum, USEPA Method 6010 ……Mo

Zinc, USEPA Method 6010 ..... ZN

Iron, USEPA Method 6010 ..... FE

Manganese, USEPA Method 6010 ..... MN

Arsenic, USEPA Method 7062 ..... AS

Lead, USEPA Method 7421 ..... PB

Mercury, USEPA Method 7470A..... HG

Nickel, USEPA Method 7521 ..... NI

Selenium, USEPA Method 7742 ..... SE

Thallium, USEPA Method 7841 ..... TL

Cyanide, USEPA Method 9010C..... CN

Sulfide, USEPA Method 9030Bx ..... S

ATTACHMENT C—VOLATILE ORGANIC COMPOUNDS, EXTENDED LIST (FIVE-YEAR COCS)

USEPA Method 8260, Extended List

Constituent	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
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, l Dichloroethene; Vinylidene chloride)	DCE11

cis l ,2 Dichloroethylene (cis 1,2 Dichloroethene)..... DCE12C
trans l ,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 l ,3 Dichloropropene DCP13T
Di-isopropylether (DIPE) ..... DIPE
Ethanol..... ETHANOL
Ethyltertiary butyl ether..... ETBE
Ethylbenzene ..... EBZ
Ethyl methacrylate.....EMETHACRY
Hexachlorobutadiene ..... HCBU
2 Hexanone (Methyl butyl ketone).....HXO2
Isobutyl alcohol ..... ISOBTOH
Methacrylonitrile ..... METHACRN
Methyl bromide (Bromomethane)..... BRME
Methyl chloride (Chloromethane) ..... CLME
Methyl ethyl ketone (MEK; 2 Butanone)..... MEK
Methyl iodide (Iodomethane)..... IME
Methyl t-butyl ether..... MTBE
Methyl methacrylate .....MMTHACRY
4 Methyl 2 pentanone (Methyl isobutyl ketone) ..... MIBK
Methylene bromide (Dibromomethane)..... DBMA
Methylene chloride (Dichloromethane).....DCMA
Naphthalene..... NAPH
Propionitrile (Ethyl cyanide)..... PACN
Styrene..... STY
Tertiary amyl methyl ether..... TAME

Tertiary butyl alcohol ..... TBA
1,1,1,2 Tetrachloroethane TC1112
1,1,2,2 Tetrachloroethane ..... PCA
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE) ..... PCE
Toluene ..... BZME
1,2,4 Trichlorobenzene TCB124
1,1,1 Trichloroethane (Methylchloroform) TCA111
1,1,2 Trichloroethane TCA112
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 (FIVE-YEAR COCS)

USEPA Methods 8270C or 8270D
(Base, Neutral & Acid Extractables)

Constituent	GeoTracker Code
Acenaphthene	ACNP
Acenaphthylene	ACNPY
Acetophenone	ACPHN
2 Acetylaminofluorene (2 AAF)	ACAMFL2
Aldrin	ALDRIN
4 Aminobiphenyl	AMINOBPH4
Anthracene	ANTH
Benzo[a]anthracene (Benzanthracene)	BZAA
Benzo[b]fluoranthene	BZBF
Benzo[k]fluoranthene	BZKF
Benzo[g,h,i]perylene	BZGHIP
Benzo[a]pyrene	BZAP
Benzyl alcohol	BZLAL
Bis(2 ethylhexyl) phthalate	BIS2EHP
alpha BHC	BHCALPHA
beta BHC	BHCBETA
delta BHC	BHCDELTA
gamma BHC (Lindane)	BHCGAMMA
Bis(2 chloroethoxy) methane	BECEM
Bis(2 chloroethyl) ether (Dichloroethyl ether)	BIS2CEE
Bis(2 chloro 1 methyethyl) 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
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
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
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 Nitrosospyrrolidine ..... NNSPYRL
5 Nitro o toluidine TLDNONT5
Pentachlorobenzene ..... PECLBZ
Pentachloronitrobenzene (PCNB) PECLNO2BZ
Pentachlorophenol ..... PCP
Phenacetin ..... PHNACTN
Phenanthrene ..... PHAN
Phenol ..... PHENOL
p Phenylenediamine ANLNAM4
Polychlorinated biphenyls (PCBs; Aroclors) ..... PCBS
Pronamide ..... PRONAMD
Pyrene ..... PYR
Safrole ..... SAFROLE
1,2,4,5 Tetrachlorobenzene C4BZ1245
2,3,4,6 Tetrachlorophenol TCP2346
o Toluidine ..... TLDNO
Toxaphene ..... TOXAP

2,4,5 Trichlorophenol..... TCP245

0,0,0 Triethyl phosphorothioate.....TEPTH

sym Trinitrobenzene..... TNB135

ATTACHMENT E—CHLOROPHENOXY HERBICIDES (FIVE-YEAR COCS)

USEPA Method 8151A

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

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 G—RESIDENTIAL DOMESTIC WELLS

Location Name	Type	Monitoring Frequency
7210 Austin Road	Domestic	Quarterly
7898 Austin Road North	Domestic	Quarterly
7175 Newcastle Road	Domestic	Quarterly
7443 Newcastle Road	Domestic	Quarterly
7557 Newcastle Road	Domestic	Quarterly
7601 Newcastle Road	Domestic	Quarterly
7667 Newcastle Road	Domestic	Quarterly
7777 Newcastle Road North	Domestic	Quarterly
7777 Newcastle Road South	Domestic	Quarterly
7833 Newcastle Road	Domestic	Monthly
7983 Newcastle Road	Domestic	Quarterly
7995 Newcastle Road	Domestic	Quarterly
3902 Arch Road	Domestic	Semi-Annual
4310 Arch Road	Domestic	Semi-Annual
4832 Arch Road	Domestic	Semi-Annual
4920 CA-99	Domestic	Semi-Annual
5190 CA-99	Domestic	Semi-Annual
6595 S Jacktone Road	Domestic	Semi-Annual
6631 S Jacktone Road	Domestic	Semi-Annual
6701 S Jacktone Road	Domestic	Semi-Annual
6380 Kaiser Road	Domestic	Semi-Annual
6677 Kaiser Road	Domestic	Semi-Annual
6715 Kaiser Road	Domestic	Semi-Annual

ATTACHMENT G—RESIDENTIAL DOMESTIC WELLS

Location Name	Type	Monitoring Frequency
9852 E. Mariposa Road	Domestic	Semi-Annual
11040 E. Mariposa Road	Domestic	Semi-Annual
11362 E. Mariposa Road	Domestic	Semi-Annual
11534 E. Mariposa Road	Domestic	Semi-Annual
12022 E. Mariposa Road	Domestic	Semi-Annual
12226 E. Mariposa Road	Domestic	Semi-Annual
12440 E. Mariposa Road	Domestic	Semi-Annual
12726 E. Mariposa Road	Domestic	Semi-Annual
12754 E. Mariposa Road	Domestic	Semi-Annual
12886 E. Mariposa Road	Domestic	Semi-Annual
12954 E. Mariposa Road	Domestic	Semi-Annual
13019 E. Mariposa Road	Domestic	Semi-Annual
13225 E. Mariposa Road	Domestic	Semi-Annual
6258 Santa Ana Way	Domestic	Semi-Annual
6350 Santa Ana Way	Domestic	Semi-Annual
6365 Santa Ana Way	Domestic	Semi-Annual
6416 Santa Ana Way	Domestic	Semi-Annual
6450 Santa Ana Way	Domestic	Semi-Annual
6555 Santa Ana Way	Domestic	Semi-Annual
6562 Santa Ana Way	Domestic	Semi-Annual
6568 Santa Ana Way	Domestic	Semi-Annual
3314 Sunny Road	Domestic	Semi-Annual
3320 Sunny Road	Domestic	Semi-Annual
3440 Sunny Road	Domestic	Semi-Annual
3447 Sunny Road	Domestic	Semi-Annual

ATTACHMENT G—RESIDENTIAL DOMESTIC WELLS

Location Name	Type	Monitoring Frequency
3560 Sunny Road	Domestic	Semi-Annual
3647 Sunny Road	Domestic	Semi-Annual
3734 Sunny Road	Domestic	Semi-Annual
3792 Sunny Road	Domestic	Semi-Annual
3823 Sunny Road	Domestic	Semi-Annual
3904 Sunny Road	Domestic	Semi-Annual
3912 Sunny Road	Domestic	Semi-Annual
3935 Sunny Road	Domestic	Semi-Annual
3947 Sunny Road	Domestic	Semi-Annual
3948 Sunny Road	Domestic	Semi-Annual
4062 Sunny Road	Domestic	Semi-Annual