

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2018-XXXX

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF AUBURN
RECOLOGY AUBURN PLACER
AUBURN LANDFILL
CLOSED CLASS III LANDFILLS
POST-CLOSURE MAINTENANCE, EVALUATION MONITORING,
AND CORRECTIVE ACTION
PLACER COUNTY

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

1. The City of Auburn and Recology Auburn Placer (**hereinafter jointly referred to as “Discharger”**) own and/or operate the Auburn Landfill, a closed, municipal solid waste (MSW) landfill located approximately three miles north of Auburn near Elders Corner, as shown in Attachment A: Location Map (incorporated by reference in Finding 3 below). The closed MSW landfill facility is regulated under authority provided in Water Code section 13000 et seq. and the California Code of Regulations, title 27 (“Title 27”),
2. The landfill was previously regulated under Waste Discharge Requirements (WDRs) Order R5-2004-0086. A review of the files by Central Valley Water Board staff indicated the need for an update and limited revision of the WDRs to address changes and issues that have occurred at the site since the WDRs were last revised in 2004. These changes and issues include the following:
 - a. Updated/revised site information and attachment maps;
 - b. The need for financial assurances;
 - c. Re-classification of a former hazardous waste disposal area;
 - d. The results of a leachate collection sump investigation;
 - e. The installation of offsite monitoring wells;
 - f. The need for additional onsite monitoring wells;
 - g. The need for a landfill final cover assessment;
 - h. The need to determine separation between wastes and groundwater; and
 - i. Monitoring data collected since 2004.

This revised WDR Order includes revised findings, regulatory references, and requirements to address the above issues and changes at the facility.

3. The following documents are attached to this Order and hereby incorporated into and made a part of this Order by reference:

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- a. Attachment A – Location Map
 - b. Attachment B – Area Map
 - c. Attachment C – Groundwater Monitoring Map
 - d. Attachment D – Facility Map
 - e. Information Sheet
 - f. April 2016 *Standard Provisions and Reporting Requirements for Industrial Facilities Regulated by Title 27 (Industrial SPRRs)*.
4. The facility is on a 51-acre site in the northwest ¼ of Section 28, T13N, R8E Mount Diablo Base and Meridian (MDB&M), corresponding to Assessor Parcel Numbers 052-010-022-000, 052-010-023-000, and 052-010-027-000. The geographic coordinates of the site are Latitude 38.953° north, Longitude -121.093 ° west. The site is located at 12375 Shale Ridge Road about one-half mile east of Highway 49. See Attachment B: Area Map.
 5. The facility includes two landfill units, referred to as Landfill 1 (LF-1) and Landfill 2 (LF-2). LF-1 operated from 1958 until September 1983, accepting primarily household refuse and nonhazardous industrial wastes from the City of Auburn and surrounding unincorporated areas. Prior to June 1979, the facility also accepted industrial wastes (subsequently classified as hazardous) that were discharged to LF-2 immediately northwest of LF-1. See Finding 16. Prior to landfilling, a portion of the site was used for gravel mining.
 6. Both LF-1 and LF-2 pre-date Title 27/Chapter 15 regulations and are unlined. The waste management units at the site, as classified under this order, are summarized below:

Unit	T27 Unit Class	Fill Area	Area (acres)	Containment System		Wastes
				Liner	Cover	
LF-1	III	Northern	7.5	Unlined ¹	Non-prescriptive Title 27 Cover	MSW
		Southern	17.5			
LF-2 ²	III ²	5 trenches	3.0	Unlined ¹	Non-Title 27 Earthen Cover	Industrial
Total:	2 units	3 fill areas	28.0			

1. Unit also constructed with pre-Chapter 15/Title 27 dendritic leachate collection and recovery system (LCRS) plumbed to sump at landfill toe. Dendritic LCRS does not meet Title 27 standards, however, because unit is unlined.
2. Former Class II-1 unit under former Subchapter 15 regulations authorized to accept limited Group 1 (e.g. hazardous) wastes..

7. The site includes the two closed landfill units, a transfer station, bin storage areas, facility offices, access roads, parking areas, and undeveloped space, as shown in

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Attachment D: Facility Map. The landfill facilities include precipitation and drainage controls, gas monitoring probes, groundwater monitoring wells, and a French drain plumbed to a toe sump for leachate collection. The onsite transfer station, operated by Recology Auburn Placer, is regulated under a solid waste facilities permit issued by the Local Enforcement Agency and the NPDES General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES NO. CAS000001, Order 2014-0057-DWQ) issued by the State Water Resources Control Board (SWRCB).

8. Title 27 contains regulatory standards for discharges of solid waste promulgated by the State Water Board and the California Department of Resources Recovery and Recycling (CalRecycle). In certain instances, this Order cites CalRecycle regulatory sections. Title 27, section 20012 allows the Central Valley Water Board to cite CalRecycle regulations from Title 27 where necessary to protect water quality, provided it does not duplicate or conflict with actions taken by the Local Enforcement Agency (LEA) in charge of implementing CalRecycle regulations.
9. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated MSW landfill regulations under the Resource Conservation and Recovery Act (RCRA), Subtitle D. These regulations are under 40 Code of Federal Regulations section 258, and are hereafter referred to as either "Subtitle D" in reference to the RCRA federal law that required the regulations or "40 C.F.R. section 258.XX". These regulations apply to all California Class II and Class III landfills that accept MSW on or after the effective date of Subtitle D (9 October 1993). The Auburn landfill is not subject to federal Subtitle D regulations because it ceased accepting wastes before 9 October 1991.
10. This Order implements the applicable regulations for discharges of solid waste to land through Prohibitions, Specifications, Provisions, and monitoring and reporting requirements. Prohibitions, Specifications, and Provisions are listed in Sections A through I of these WDRs below, and in the Industrial SPRRs dated April 2016 which are part of this Order. Monitoring and reporting requirements are included in the Monitoring and Reporting Program (MRP) R5-201X-XXXX and in the Industrial SPRRs. In general, requirements in regulation that are common to landfill units (as opposed to being site-specific) are considered to be "standard" and are therefore in the SPRRs. Any site-specific changes to a requirement in the SPRRs are included in the applicable section (Sections A through I) of these WDRs, and such requirement in the WDRs supersedes the requirement in the SPRRs.

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WASTES AND UNIT CLASSIFICATION

LF-1

11. LF-1 accepted household, commercial and industrial wastes defined as "nonhazardous" and "inert" under Title 27, sections 20220 and 20230, respectively.

LF-1 also accepted asbestos containing wastes defined as “hazardous” under Title 22, section 66261.24 and Title 27, section 20164. Previous WDRs authorized the disposal of asbestos containing wastes at the landfill per California Health and Safety Code (CHSC), section 25143.7.¹

12. LF-1 consists of two separate fill areas referred to as the Northern Fill Area (NFA) and the Southern Fill Area (SFA), as shown in Attachment C: Groundwater Monitoring Map. Most of the SFA (i.e. the western and central portions) was filled from 1958 through 1979. The NFA served as a borrow source for SFA during this period. The NFA and the remainder of the SFA were subsequently filled from 1979 to 1983.
13. Approximately 750,000 cubic yards (375,000 tons) of solid waste were discharged to LF-1. Waste disposal was by the cut and fill method. The base of fill ranges from about 1,420 feet MSL in the southwestern corner of the SFA to about 1,485 feet MSL in the NFA. Fill depths in the SFA ranged from about 5 feet (central portion) to 60 feet (northwestern portion). The maximum depth of waste in the NFA was about 44 feet in the crest area.²
14. LF-1 operated (e.g., accepted waste) prior to the effective date of Chapter 15 regulations (27 November 1984) and was not subsequently reconstructed or retrofitted with a base liner and Title 27-compliant LCRS.³ As such, LF-1 is an “existing”, CAI unit under Title 27. Section 20080(d).⁴
15. These WDRs maintain LF-1’s Class III classification under previous WDRs, but require that the Discharger evaluate its final cover and repair and/or improve it as necessary to ensure that it meets Title 27 performance standards. See Postclosure Specification E.1.

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1. California Health and Safety Code, section 25143.7 states: *“Waste containing asbestos may be disposed of at any landfill which has waste discharge requirements issued by the regional water quality control board which allow the disposal of such waste, provided that the wastes are handled and disposed of in accordance with the Toxic Substances Control Act (P.L. 94-469) and all applicable laws and regulations.”*
 2. See Figures 3 and 4, June 1987 Solid Waste Assessment Test (SWAT) report (*Solid Waste Quality for Auburn Disposal Site, Placer County*), prepared by Emcon Associates.
 3. Retrofitting the unit with a Chapter 15/Title 27-compliant base liner and LCRS to comply with Class III standards was considered infeasible given that the landfill had already been constructed and substantially developed. See Title 27, section 20080(e).
 4. Title 27, section 20080(d)(1) defines a “closed, abandoned, or inactive” (CAI) unit as that which ceased accepting wastes and was closed prior to the effective date of Chapter 15 regulations. Such units are not generally required to be retrofitted to meet Title 27 containment standards, unless necessary for corrective action. See Title 27, section 20080(g).

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LF-2

16. LF-2 accepted industrial wastes classified as “limited Group I wastes” under former Subchapter 15 regulations. Although subsequently classified as “hazardous”, such wastes were at the time allowed to be discharged to a Class II-I landfill under former Subchapter 15 regulations. These wastes consisted of solid, semi-solid, and liquid wastes from a local Formica plant, including sanding dust, melamine treatment wastes, cleanup liquid, and phenolic resins commonly used as binding agents in building materials (e.g., chip board, countertops, insulation, paint). Approximately 200,000 cubic yards of hazardous Formica plant wastes are estimated to have been discharged to LF-2.
17. In 1979, the Board adopted revised WDRs (Order 79-136) reclassifying the landfill (i.e., LF-1 and LF-2) as a Class II-2 facility (equivalent to a Class III landfill under Title 27 regulations) and prohibiting the further discharge of Group 1 wastes to the landfill.⁵ LF-2 subsequently ceased accepting (Group 1) wastes in 1979 and was closed in accordance with a 1979 Final Closure Plan. See Finding 64.
18. LF-2 is an existing. CAI unit under Title 27 regulations for the same reason as LF-1 described in Finding 14.⁴ These WDRs re-classify LF-2 as a separate, Class III landfill unit based on its equivalent Subchapter 15 classification under previous WDRs and its containment system (final cover) required under these WDRs. As with LF-1, the Discharger is required to evaluate the final cover over LF-1, however, and make any necessary repairs/improvements such that it complies with Title 27 performance standards. See Postclosure Specification E.3.

SITE DESCRIPTION

19. The site is on the southwest flank of a southwest-northeast trending knoll (i.e., low hill) in the western foothills of the Sierra Nevada Mountains. The topography in this area of the foothills generally consists of low hills separated by shallow ravines, which drain the hills in the area and mountainous terrain to the east. Ground surface elevations the area generally range from about 1,540 feet MSL (top of the knolls) to about 1,300 feet MSL (bottom of ravines). The maximum elevation of the site is about 1,520 feet MSL. Slopes in the area generally range from about 3 to 10 percent toward the ravines.
20. Land within 1000 feet of the site is used for agricultural, commercial, residential, industrial, and recreational purposes. These uses include the landfill and adjacent transfer station; the Auburn Airport immediately east of the site; a convalescent hospital and mobile home park to the west; a commercial mini-storage facility to the south; and

5. Previous (1974) WDRs classified both landfill units (i.e., LF-1 and LF-2) as a single, Class II-1 landfill under former Subchapter 15 regulations, although only LF-2 accepted limited Group I wastes.

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private residences to the north. A water conveyance system, the Combie-Ophir Canal, is also about 75 feet of the northwest perimeter of the site.

21. A March 2017 Department of Water Resources (DWR) well survey found an estimated 161 domestic supply wells, 3 industrial supply wells (bottled water), 1 agricultural irrigation well, and one public supply well within a one-mile radius of the site. See Information Sheet, Attachment 1.
22. The nearest weather stations are DWR's Auburn Station (No. A70 0373 00) about 5.5 miles south of the site and the National Oceanic and Atmospheric Administration (NOAA) Auburn Station (04-0383) about 3.5 miles south of the site. Based on the NOAA station, the site receives an average of 34.3 inches per year of precipitation.⁶ Based data from both stations, the 100-year, 24-hour precipitation event for this station is estimated to be about 6.1 inches.
23. The site is not within the 100-year floodplain.

GEOLOGY

24. The site geology generally consists of thin layer of surface alluvium underlain by sedimentary or metamorphic bedrock. The surface alluvium generally consists of Auburn-Argonaut-rock complex soils, as classified by the U.S Department of Agriculture Natural Resources Conservation Service soil survey for the area.⁷ Such soils occur on slopes ranging from 14 to 45 percent and consists of up to two feet of silt and/or clay loam alluvium interspersed with bedrock outcrops. An ancient stream bed channel consisting of partially-cemented sand and gravel also traversed the northeast portion of the site trending from northwest to southeast. All but the northwest portion of these channel deposits were excavated to the base of the landfill during landfill construction and replaced with waste.
25. Bedrock at the site generally consists of sheared shale and sandstone interrupted in areas by protrusions of pre-Cretaceous, metavolcanic greenstone or green schist. Such surface protrusions appear as large boulders in the central and northwest portions of the site. The permeability of the weathered/fractured bedrock is estimated to be about 1×10^{-4} cm/sec.
26. There are no active faults within a one-mile radius of the site.

6. As determined from Point Precipitation Frequency estimates for the Auburn Station (04-0383) on the NOAA's National Weather Service Hydrometeorological Design Studies Center Precipitation Frequency Data Server website.

7. See 1 May 2015 *U.S. Department of Agriculture, Natural Resources Conservation Service, Custom Soil Survey for Placer County, Western Part (CA620)*.

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UNSATURATED ZONE CONDITIONS

27. The thickness of the unsaturated zone (i.e., the difference between ground surface and groundwater elevation), excluding capillary fringe, ranges from about 50 feet in the northeast corner of the site to less the five feet in the southwest corner of the site including the landfill toe. Within the landfill footprint, the unsaturated zone is reduced by the thickness of the waste column, which varies in height depending on location. Outside of and below the landfill footprint, unsaturated zone material typically consists of bedrock outcrop (e.g., greenstone, schist, or unexcavated shale or sandstone with varying degrees of weathering). Remnants of the mined stream channel deposit also exist within the unsaturated zone north of and underlying the NFA.
28. The Discharger conducts landfill gas (LFG) monitoring in the unsaturated zone along the site perimeter per Local Enforcement Agency and CalRecycle requirements under Title 27 regulations. There are currently 24 soil gas probes at 10 locations along or near the perimeter of the landfill, all of which are monitored for LFG. Two locations (P-4A and P-06) have single-tiered probes; three locations (P-01A, P-03A, and P-07A) have double-tiered (shallow and deep) probes; and six locations (P-08 through P-013) have with triple-tiered (shallow, intermediate and deep) probes. Five of these soil gas monitoring probe locations (P-09 through P-13) are located in a site expansion area 75 to 150 feet east of the landfill. See Attachment D: Facility Map.
29. Monitoring of these perimeter probes over the past 10 years has indicated methane concentrations generally below 0.5% percent by volume and no exceedances of the 5 percent lower explosive limit (LEL) of solid waste regulations. During the most recent monitoring event conducted in the Fourth Quarter, 2016, methane concentrations were non-detect in all probes. These WDRs require that all gas monitoring probes at the site be monitored at least semiannually for field gases, and annually for VOCs, if warranted based on field gas monitoring. See MRP Section A.2.b.

LEACHATE MONITORING

30. A 1987 SWAT investigation (referenced in Finding Footnote 2) revealed the presence of volatile organic compounds (VOCs) and elevated concentrations of inorganic constituents in the leachate collection sump at the site. Since then the Discharger has been monitoring the sump for landfill constituents of concern. The results of sump monitoring conducted since 2005 are summarized below.

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Leachate Collection Sump Liquid Semiannual Monitoring Results			
Constituent	Maximum Concentration		
	2016	2011-2015	2005-2010
VOCs	µg/L	µg/L	µg/L
Acetone	nd	21	7.9
Benzene	1.1	0.9	2.4
Chlorobenzene	4.6	4.7	8.5
1,2-Dichlorobenzene	0.3	0.4	0.6
1,4-Dichlorobenzene	2.4	2.8	4.8
tert-Butyl alcohol (TBA)	27	33	48
General Minerals	mg/L	mg/L	mg/L
Alkalinity ¹	1,200	1,100	1,100
Chloride	130	170	180
Hardness	1,300	1,200	1,300
Total Dissolved Solids	1,400	1,400	1,200

1. Alkalinity as calcium carbonate.

Low to trace concentrations of Chloromethane (0.7 µg/L), Methyl tert-butyl Ether (MTBE), Naphthalene (2.9 µg/L), and Xylenes (0.6 µg/L) have also been intermittently (i.e., at least once) detected in the sump liquid.

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31. Up to about 9 million gallons of liquid are pumped annually from the sump, most of it during the wet season. During 2016, the volume of liquid pumped quarterly from the sump ranged from about 6.1 million gallons (First Quarter 2016) to 21,400 gallons (Third Quarter 2016). Given the groundwater separation issues at the SFA noted in Finding 54, and the fact that storm water infiltration into the closed landfill should be minimal, it appears likely that some percentage of this liquid is impacted groundwater that has risen up into the landfill waste column and entered leachate collection piping.

These WDRs require that the Discharger monitor the leachate collection sump semiannually for field and monitoring parameters and every 5 years for COCs.⁸ See MRP, Section D. These WDRs also require that Discharger consider the need for any additional leachate collection facilities necessary to comply with Title 27 standards in any revised or updated Engineering Feasibility Study (EFS) submitted under this Order under the Response to Release provisions of the Industrial SPRRs. See Evaluation Monitoring and Corrective Action Specification H.5.a.

SURFACE AND GROUNDWATER CONDITIONS

32. Surface drainage at the site is to an ephemeral tributary to Rock Creek about 3,000 feet southwest of the site. Rock Creek flows to the northwest into Dry Creek, a tributary to Coon Creek, which flows into the Sacramento River.
33. The beneficial uses of surface waters are domestic and municipal supply, agricultural irrigation, industrial supply, recreation, and ground water recharge.
34. Regional groundwater flow is generally to the west, southwest, or northwest depending on topography. Shallow bedrock fracture connectivity and orientation may also influence the overall direction of groundwater flow.
35. Background groundwater quality is average with total dissolved solids (TDS) of about 370 milligrams per liter (mg/L), alkalinity about 220 mg/L, and hardness about 270 mg/L.
36. The beneficial uses of the ground water are domestic, municipal, agricultural, and industrial supply.

GROUNDWATER MONITORING

37. There are currently 15 landfill monitoring wells for the facility, including 10 onsite wells (1, C, D, E, E-1, E-4, E-11, E-12, E-21, and LFW-2) and four offsite monitoring wells (A, B, R-1, R-2, and R-3). Six of these wells (D, LFW-2, E, R-1, R-2, and R-3) are

⁸. Sump liquid monitoring was not required under previous WDRs Order R5-2004-0086, but was voluntarily conducted by the Discharger to help evaluate the effectiveness of leachate controls.

directly down gradient of LF-1 or a portion of it, while one (A and E-12) are directly upgradient of LF-1 or a portion of it. The remaining wells are generally side gradient.

38. Shallow groundwater beneath the site ranges from about 1,475 feet MSL in the northeastern corner of the northern fill area (i.e. within sheared shale and sandstone) to about 1,425 feet MSL in the southwestern portion of the southern fill area (i.e. within weathered shale and sandstone or fractured greenstone bedrock). The corresponding depths to groundwater range from about 1.5 feet below ground surface (bgs) in the southwest corner of the site to about 50 feet bgs in the northeast corner of the site. Groundwater elevations vary seasonally about 1 to 5 feet depending on location. Shallow groundwater down gradient of the site may discharge to the ephemeral tributary to Rock Creek described in Finding 32.
39. Based on contour plots of groundwater elevation monitoring data from existing monitoring wells, groundwater is estimated to flow to the southwest at a gradient of approximately 0.03 ft/ft. Information on file (April 2006 EFS/CAP, Page 5) further indicates that shallow groundwater flow at the site may be influenced by topography and that in the northwest portion of the site groundwater may flow to the northwest. See Finding 40.
40. Title 27, section 20415(b) requires that the Discharger establish a groundwater monitoring system for each waste management unit, including background, detection and, in the event of a release, corrective action monitoring wells. Given that these WDRs classify LF-2 as a separate Class III landfill from LF-1 (see Finding 15), a separate groundwater monitoring system is required for LF-2. Background and Point of Compliance monitoring wells are also required as part of the Water Quality Protection Standard (WQPS) for the unit per Title 27, section 20390.

These WDRs therefore require that the Discharger submit a work plan and schedule for the installation of additional groundwater monitoring wells to bring the groundwater monitoring systems of the landfill units into compliance with Title 27 performance standards.⁹ At a minimum, one additional detection/corrective action monitoring well is needed along the downgradient perimeter of LF-1 (i.e., between wells LFW-2 and E) to contiguously monitor the SFA and NFA (this well could also be used monitoring groundwater separation), and additional detection monitoring wells are needed at appropriate locations along the perimeter of LF-2 to verify the direction of groundwater flow and to monitor the unit. Suggested locations for these wells are shown in Attachment C: Groundwater Monitoring Map. See Provision I.7.b; Monitoring Specification G.10; and Standard Monitoring Specifications 27 through 29, Industrial

9. Where the proximity of units to each other, physical constraints, or other related factors render installation of a monitoring well infeasible or impractical at a given location, the Discharger may propose a contiguous and/or engineered alternative monitoring system for the unit(s) per Title 27, sections 20405(b), 20415(e)(3) and 20380(e).

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SPRRs.

41. The original Site Conceptual Model for the site, including geologic cross-sections, was provided in the 1987 SWAT Report using data from monitoring wells existing at that time. These WDRs require that the Discharger submit an updated Site Conceptual Model after installation of the monitoring wells described above and completion of the EMP investigation described in Finding 54 below. See Evaluation Monitoring and Corrective Action Specification H.4; Title 27, sections 21750 (f) and (g); and Title 27, section 21760(a)(3).
42. Title 27 specifies the prescriptive requirements and performance standards applicable to monitoring data analysis and requires that such methods be implemented as follows:
 - a. As specified in the existing MRP under the WDRs; or
 - b. In accordance with a technical report (certified by an appropriately registered professional) documenting such methods, submitted to, and approved by, the Central Valley Water Board; or
 - c. In accordance with any water quality data analysis software deemed appropriate for such use by either the Central Valley Water Board or SWRCB.

See Title 27, section 20415, subparagraphs (e)(7) and (e)(10).
43. The Discharger submitted a Sampling and Analysis Plan that describes the sampling protocols and data analysis methods used for groundwater monitoring pursuant to Sections 20415(e)(4) and 20415 (e)(7) of Title 27. The data analysis methods are summarized as follows:

<u>COC Group</u>	<u>Data Analysis Method</u>	<u>Trigger</u> ^{1,2}	<u>Needed for Confirmation</u> ¹
VOCs & other organics	Nonstatistical	1 ≥ PQL or 2 ≥ MDL	Same COC(s) triggered in at least 1 of 2 retest samples
Inorganic COCs, < 10% in background	Nonstatistical	1 ≥ PQL	
Inorganic COCs, ≥ 10% in background	Statistical (Tolerance Interval)	1 > Concentration Limit	Not applicable
Trend analysis:		At least 4 historical	
Monitoring Parameters COCs	Mann-Kendall test Time series plots	detections >PQL for each COC ³	

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1. Notification and retest not required for tentatively indicated constituents previously confirmed as part of the release at a given monitoring point (these exceedances shall be assumed confirmed without retest).
 2. "1" and "2" in listed trigger criteria refer to number of monitoring parameters or COCs.
 3. Trigger for performing trend analysis not for a release.
44. Volatile organic compounds (VOCs) are often detected in a release from a MSW landfill and are often associated with releases of landfill gas rather than leachate. Since VOCs are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a landfill unit. Title 27, sections 20415(e)(8) and (9) allow the use of a non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a landfill unit in accordance with Title 27, sections 20415(b)(1)(B)(2 - 4).
45. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27, section 20080(a)(1). Water Code section 13360(a)(1) allows the Central Valley Water Board to specify requirements to protect groundwater or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a landfill unit, the SPRRs specify a non-statistical method for the evaluation of monitoring data for non-naturally occurring compounds.
- The MRP under these WDRs specifies the data analysis methods applicable to monitoring data for the site based on the Sampling and Analysis Plan referenced in Finding 43. For VOCs and other organic compounds (as well as for inorganic compounds not present in background) a non-statistical method is specified for detection monitoring consistent with Title 27, section 20080(a)(1).
46. For a naturally occurring constituent of concern (i.e., inorganic constituents present in background), Title 27 requires concentration limits for each constituent of concern be determined either by calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8) or by an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).
47. Title 27, section 20390 requires that the Central Valley Water Board establish a Water Quality Protection Standard (WQPS) in the WDRs for each unit, including Constituents of Concern (COCs), Concentration Limits, Point of Compliance, and Monitoring Points. A report describing the WQPS has not been previously submitted for the site and was not required under previous WDRs. These WDRs require that the Discharger submit a WQPS report for the site describing the WQPS elements for each unit (i.e., LF-1 and

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LF-2). The WQPS report is required to be submitted after the Discharger has completed a sufficient amount of background monitoring to develop proposed concentration limits, An updated Sample Collection and Analysis Plan consistent with the WQPS report is also required to be submitted. See Provisions I.9 and I.10 and MRP Section C.1.

GROUNDWATER IMPACTS AND CORRECTIVE ACTION

LF-1

48. A 1989 amended SWAT report confirmed the presence of VOCs and elevated concentrations of inorganic constituents in groundwater at the site.¹⁰ The concentrations of VOCs detected in groundwater since 2005 are summarized as follows:

Constituent	Maximum Concentration ¹			Well(s) ²	Location ²
	2005-2009	2010-2014	2015-2017		
VOCs	µg/L	µg/L	µg/L		
Benzene	0.3	2.6	ND	E-21, E-12, 1, E & R-2	Sidegradient (west) of LF-1 & LF-2
Bromoform	0.7	ND	ND	E-21	
Chloroethane	ND	0.3	ND	E-1	
Dibromochloromethane	0.2	ND	ND	E-21	
1,1-Dichloroethane	0.8	ND	0.3	E-1, E-4, E-21 & 1	
Di-isopropyl ether (DIPE)	0.5	0.5	0.4	1 & E-4	
Methyl-tert-butyl ether (MTBE)	11	9.5	3	E-21	Downgradient (SE) of LF-1 & LF-2
	0.2	0.2	0.1	E-21, LFW-2 & R-3	
Tert-Butyl Alcohol	11	9.5	ND	1, LFW-2, E. E-12. D. E-1, E-4, A, E-21, R-3, R-2	Sidegradient (west) of LF-1 & LF-2
Tetrachloroethene (PCE)	0.1	0.2	ND	E-21	
Toluene	ND	0.6	ND	E-12 & E-21	

1. Maximum VOC concentration detected during time period in any well.
 2. Monitoring wells in which VOC historically detected, beginning with well with maximum concentration.

10. See 21 September 1989 addendum to 1987 SWAT Report, prepared by Emcon Associates.

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Only one of the VOCs detected multiple times in the leachate collection sump liquid, Benzene, was also detected multiple times in the monitoring wells at the site indicated above. With the exception of MTBE historically detected in well E-21, concentrations of VOCs in wells at the site have generally declined to trace or non-detect levels. The Discharger has attributed the MTBE and BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes) detections to residual impacts of a former underground storage tank that was removed west of the facility.

49. Elevated concentrations of inorganic constituents detected in groundwater since 2005 are summarized as follows:

<u>Constituent</u>	<u>Historical Concentration (mg/L)¹</u> <u>2H16/Maximum/Average²</u>			
	<u>Upgradient</u>	<u>Downgradient</u>		<u>Sidegradient</u>
	<u>Offsite</u>	<u>Onsite</u>	<u>Offsite</u>	<u>Onsite</u>
<u>Well:</u>	<u>A</u>	<u>LFW-2³</u>	<u>R-3</u>	<u>1</u>
Alkalinity ⁴	220/220/204	1,100/1,100/694	760/760/684	570/600/500
Chloride	12/13/10	240/300/192	150/190/160	13/17/13
Hardness	270/280/233	1,700/1,700/1025	1,000/1,600/962	590/620/480
Total Dissolved Solids (TDS)	370/380/334	1,400/1,500/1006	980/1,100/973	630/690/563

1. Historical concentrations based on groundwater monitoring data collected from 2005 through 2016.
2. "2H16" denotes Second Half 2016 monitoring period.
3. Similar concentrations of inorganic constituents were detected in down gradient well D west of LFW-2.
4. Alkalinity as calcium carbonate.

The results indicated Second Half 2016 (2H16) concentrations at or close to historical maximums for most of the above inorganic constituents in down gradient wells. Both average and maximum concentrations of TDS historically detected in down gradient wells LFW-2, D, and in side gradient well R-3, exceeded drinking water standards. Including the federal and state secondary maximum contaminant level (MCL) for taste and odor (500 mg/L). Concentrations of chloride detected in the above down gradient wells (i.e., D, LFW-2 & R-3) also exceeded the federal and state secondary MCLs (250 mg/L) and/or state agricultural limit (106 mg/L).

50. Previous WDR Order 93-243 required that the Discharger submit an Engineering Feasibility Study (EFS), Corrective Action Program (CAP) and Article 5 monitoring program to address groundwater impacts at the landfill. In response, the Discharger submitted a 27 January 1994 *Amendment to Report of Waste Discharge* report containing a proposed EFS, CAP and Article 5 groundwater monitoring program for the site. The EFS considered the following conceptual alternatives for remediation of VOCs in groundwater at the site:

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- a. No action except continued groundwater monitoring of natural attenuation of VOCs;
- b. Construction of a prescriptive low permeability cover ($k < 1 \times 10^{-6}$ cm/sec) over the entire landfill as a source control measure to reduce infiltration and leachate production;
- c. Installation of a groundwater extraction and treatment system to remove VOCs from the groundwater;
- d. Installation of a low permeability slurry wall (about 2,600 feet long by 85 feet deep) along the down gradient perimeter of the landfill as a barrier to prevent further down gradient migration of impacted groundwater; and
- e. In Situ Remediation – Air and/or methane sparging and soil vapor extraction, or bioventing, to enhance biological degradation of VOCs in groundwater.

The EFS concluded that Options a and b were readily implementable options and proposed Option a based on a conclusion that groundwater monitoring data showed declining VOC concentrations due to natural attenuation. The EFS included a plan to re-consider the other options in the event the VOC release increased. The EFS/CAP did not consider corrective action measures for inorganic constituents in groundwater and neither the EFS/CAP nor the Article 5 report were approved by Regional Board staff. Consequently, the Discharger continued groundwater monitoring under with MRP No. 93-243.

51. WDR Order R5-2004-0086 (Provision G.6) subsequently required that the Discharger submit a revised EFS/CAP evaluate corrective action options and propose corrective action measures to address groundwater impacts from inorganic constituents from the landfill. In April 2006, the Discharger submitted the revised EFS/CAP, which discussed the following potential corrective action measures:¹¹
 - a. Source Control
 - 1) Capping the landfill with a lower permeability clay soil cover to reduce storm water infiltration and leachate formation;
 - 2) Retrofitting the landfill with a base liner and LCRS to help contain and collect leachate;
 - 3) Installation of additional leachate collection and extraction facilities (e.g., drains, pumps, sump); and/or
 - 4) Installation of a slurry wall along the downgradient perimeter of the landfill to prevent offsite migration of leachate and/or impacted groundwater.
 - b. Groundwater Extraction & Remediation

¹¹. See April 2006 *Engineering Feasibility Study and Correction Action Plan (EFS/CAP) for the Auburn Landfill*, prepared by Golder Associates.

- 1) The installation of groundwater extraction wells;
 - 2) Remediation using reverse osmosis to remove elevated concentrations of chloride from extracted groundwater; and
 - 3) Disposal of treated (or untreated) groundwater.
- c. Corrective Action Monitoring
- 1) Conduct ongoing groundwater monitoring to evaluate effectiveness of corrective action measures and changes/ attenuation of nature and extent of impacts;
 - 2) Improve groundwater monitoring program with recommended changes (e.g., sump monitoring, quarterly sampling to capture seasonal variations; trend analysis).

The report recommended that existing corrective action measures at the site such as final cover improvements (see Finding 70), leachate collection and disposal, and corrective action monitoring (with recommended improvements) be continued, as necessary.¹² The report concluded that the source control and groundwater extraction and remediation measures listed under a and b above were too costly, infeasible, and/or ineffective, with the possible exception of installing additional leachate collection facilities for source control.

52. In a 9 August 2006 letter providing comments on the EFS/CAP, Water Board staff expressed concerns that the leachate collection sump could be leaking and/or allowing groundwater to infiltrate into the sump. The letter stated that the EFS/CAP did not include an adequate evaluation of the design and condition of the leachate collection sump, requesting that the EFS/CAP be revised or amended to address this and other issues. The Discharger subsequently conducted a physical investigation of the sump in accordance with a December 2007 work plan reviewed by Water Board staff.¹³
53. The follow-up investigation included entering into the sump near the end of the dry season when the sump liquid level was expected to be low for a closer view of its interior (e.g., floor, walls, joints, pipe seals) to determine its design and assess whether the sump was watertight. The investigation also included an evaluation of the pump system and piping. The results of the investigation indicated that the sump was concrete-lined and that it was equipped with two automatic sump pumps. See Finding 61. Overall the sump was found to be in excellent condition and no significant deterioration of the walls, joints, seals or other portions of the sump was observed. While the pumps appeared to be adequate and in good condition, the report

12. Water balance calculations indicated that the amount of rainfall expected to percolate into the landfill during an average year (7.7 inches) was about equal to the volume of leachate extracted each year, suggesting that the leachate may be infiltrated precipitation.

13. See 3 December 2007 *Leachate Sump Interior Investigation Workplan*, prepared by Holdrege & Kull.

recommended that the discharge capacity of the conveyance pipes and sump pumps be increased to provide a suitable safety factor relative to the historical high leachate discharge rate recorded for the sump. The results of the investigation were documented in the 28 October 2008 report *Leachate Sump Investigation Report for Auburn Landfill*, prepared by Holdrege & Kull. The Discharger subsequently implemented the improvements to the sump recommended in the report.

54. Notwithstanding the amended EFS/CAP findings described above, groundwater elevation monitoring data for the site indicates that during the wet season, groundwater may be rising into the landfill waste column in the western and central portions of the SFA, causing excessive leachate formation. Groundwater monitoring reports for the Second Half 2015 and Second Half 2016, for example, indicated groundwater levels of about 1,445 feet MSL in the western and central portions of the SFA, about 10 to 15 feet above the estimated base of the SFA in these areas, as described in Finding 58 (e.g., 1,420 - 1,430 feet MSL). Such a scenario is consistent with the millions of gallons of liquid collected in the leachate collection sump and pumped to sewer each wet season.

These WDRs require that the Discharger submit an Evaluation Monitoring Program (EMP) work plan to determine the bottom of wastes at representative locations in the western and central portions of the SFA at LF-1 and former excavation pits at LF-2 (i.e., all areas where the depth of waste is unknown and groundwater separation may be an issue).¹⁴ These WDRs also specify a minimum scope of any revised or updated EFS/CAP submitted under this Order to address groundwater separation issues should they be confirmed at the site. See Provision I.7.e and Evaluation Monitoring and Corrective Action Specifications H.1 and H.5.

LF-2

55. Phenol is a petroleum derivative often occurring as a breakdown product of other aromatic compounds such as benzene. Phenol is formed from to chemical groups - phenyl (C₆H₅) and hydroxyl (OH). Phenolic compounds are formed when phenol combines with additional chemical groups such as halogens (e.g., pentachlorophenol) or additional hydroxyl groups. Phenolic compounds are generally highly water soluble and when dissolved in water will bio-degrade under appropriate conditions (e.g., aerobic, anaerobic, presence of suitable bacteria) depending on the compound.¹⁵
56. Information on file indicates that total recoverable phenols per EPA Test Method 420.1 were detected in excess of 900 µg/L in monitoring well 1 immediately west of LF-2

14. Title 27, section 20240(c) requires that existing landfill units be operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water.

15. See report *Phenols, Canadian Water Quality Guidelines for Protection of Aquatic Life*, Canadian Council of Ministers of the Environment at <http://cegg-rcqe.ccme.ca/en/index.html>.

(see Finding 0) on several occasions in the late 1970s.¹⁶ Elevated concentrations of chemical oxygen demand (COD) suspected to be from the melamine wastes were also detected in in this well. Low to trace concentrations of total phenols were also detected in other wells in the LF-2 area and in the sump at the landfill toe. In 1979, the Water Board adopted revised WDR Order 79-136 requiring LF-2 to stop accepting wastes and close. Subsequent WDRs Order 93-243 required that the Discharger continue monitoring groundwater for Total Phenols by EPA Method 420.1.¹⁷

57. In 2001, the Discharger discontinued testing for total recoverable phenols using EPA Method 420.1 and began analyzing for specific phenolic compounds by EPA Method 8270B. Previous WDRs Order R5-2004-0086 also incorporated this change. No phenolic compounds have been detected in groundwater since this change in laboratory test methods, possibly indicating that the previous detections were false-positives or that any phenols in groundwater have since attenuated to non-detect levels.

To assess whether phenolic compounds from LF-2 may be present in groundwater at the site, these WDRs require that the Discharger conduct semiannual monitoring of LF-2's monitoring wells, including any new wells, for total recoverable phenols (EPA Method 420.1 or 420.4) and every 2½ years for specific phenolic compounds using EPA Method 604 or EPA Method 8270 C or D. Five year COC monitoring, including various phenolic compounds, is also required. See MRP, Section

WASTE MANAGEMENT UNIT DESIGN AND CONSTRUCTION

LF-1

58. The western and central portions of the SFA were constructed in 1958, while the eastern portion of the SFA was constructed in 1979. The SFA was excavated to bedrock or close to bedrock in most areas prior to waste filling. Excavation depths ranged from about 5 feet in the central portion of the SFA to about 40 feet in the northern portion of the SFA. Based on cross-sections (i.e., a site conceptual model) provided in the 1987 SWAT report, the western and central portions of the base of the SFA were graded relatively flat (e.g., 1 percent slope), while the eastern portion of the SFA was graded up to five percent. Base elevations of the SFA ranged from about 1,420 feet MSL in the southwestern corner to about 1,472 feet MSL in the

16. See 12 March 1979 Central Valley Water Board staff report for proposed Cease and Desist Order Auburn Sanitary Landfill on agenda for March 1979 Board meeting.

17. This method is based on a reaction of sample distillate with alkaline ferricyanide and 4-aminoantipyrine. If phenols are present, a color change occurs (a red complex) in a shade proportional to the concentration of total phenols, which is then measured with a colorimeter. The color change is not the same for all phenols, however, and the method cannot detect individual phenol compounds. The MDL varies from 5 µg/L to 50 µg/L, depending on test protocol.

northeastern corner of the SFA.¹⁸ The resulting average was about 2.5 percent to the southwest.

59. The NFA was constructed in 1979 concurrent with the eastern portion of the SFA. Up to 35 feet of soil was excavated from the prior to filling. Base elevations ranged from about 1,472 feet MSL along the southeastern perimeter of the NFA to about 1,490 feet MSL in the northeastern corner of the NFA.⁹ After excavation to base grade, an additional three feet of underlying channel deposit gravel was excavated and replaced with compacted soil in preparation of the subgrade. The base was graded at slopes ranging up to five percent and the side slopes excavated to a maximum slope of 1.5H:1V.
60. Neither fill area was constructed with a liner. A dendritic leachate collection system consisting of French drains was installed at certain interior and perimeter locations of the landfill consistent with former Subchapter 15 regulations.¹⁹ The leachate interior drains were partially cut into the subgrade while the exterior drains ran along the intersection of the subgrade surface and excavation slopes. Each LCRS drain consisted of a minimum of one foot of pea gravel (4 to 6 square feet in cross sectional area) packed around a perforated four inch PVC pipe. Riser pipes were also installed at two locations to allow for monitoring flow in the drains.
61. The leachate collection system drains were plumbed to a collection sump installed at the toe of LF-1 in the southwest corner of the site sometime prior to 1979. The sump consists of a rectangular, concrete-walled vault (a septic tank) overlain by a cylindrical section consisting of rings of four-foot diameter, concrete storm drain pipe stacked on and fitted to each other. The rectangular vault is plumbed to the leachate collection system by two clay pipes that protrude through its walls. The sump includes two, 100 gallon per minute (gpm) pumps, one within the cylindrical section and the other underlying the first within the western chamber of the concrete vault. Each pump is operated separately by electrode switches that turn the pumps on and off when the leachate levels reach specified depths.

LF-2

LF-2 consisted of five unlined pits excavated to depths ranging from about 5 to 30 feet.²⁰ See Information Sheet, Attachment 2. The unit was originally sited as a Class

18. Previous (1974) WDRs, applicable to the western and central portions of the SFA, prohibited the discharge of wastes below 1,420 feet MSL. Subsequent (1979) WDRs (applicable to construction of the NFA and eastern portion of SFA, required that there be at least ten feet of separation between landfill wastes and seasonal high groundwater.

19. Design does not meet Title 27 standards for a dendritic LCRS for a Class III landfill due to the absence of an underlying liner.

20. Previous WDRs (Order Nos. 93-243 and R5-2004-0086) described the five unlined pits at LF-2 as “five

II-1 facility authorized to accept limited Group I (e.g., special or hazardous) wastes based on underlying natural geologic materials, which at the time were reported to be “highly impermeable”. In 1978, Water Board staff observed exposed wastes in contact with water in the one or more of the unlined pits at the unit. Phenolic wastes were also detected in groundwater in monitoring wells near the unit. At least one of the pits (Pit No. 5) was backfilled as an interim remedial measure, and in 1979 LF-2 was ordered to stop accepting wastes and close. LF-2 was ultimately closed in 1984 concurrent with LF-1.

LANDFILL CLOSURE

62. A landfill’s containment system includes its base liner, and, after closure, its final cover. Title 27, section 20950(a)(2)(A).1 states, in part:

“Closure — for landfills . . .and surface impoundments closed as landfills, the goal of closure, including but not limited to the installation of a final cover, is to minimize the infiltration of water into the waste, thereby minimizing the production of leachate and gas. For such Units, after closure, the final cover constitutes the Unit’s principal waste containment feature . . . “

Given that LF-1 and LF-2 were both constructed without a base liner on permeable (e.g., fractured or weathered) bedrock (e.g., shale, sandstone, greenstone), the final cover over these units constitutes their principle containment feature.

63. The Title 27 prescriptive final cover design for a pre-Subtitle D MSW landfill includes the following components, from top to bottom:²¹
- a. Erosion Resistant Layer -- at least one foot of vegetative cover soil with established vegetative cover;
 - b. Low Hydraulic Conductivity (LHC) Layer -- Minimum one foot of compacted clay soil with a permeability not exceeding the lesser of:
 - i. 1×10^{-6} cm/s and
 - ii. The permeability of underlying clay soil liner or natural geologic materials, as applicable;
 - c. Foundation Layer - at least two feet of materials (soil and/or waste) with appropriate engineering properties to support the overlying cover.

clay-lined ponds”. No information was found on file supporting this description.

21. For compositely lined MSW landfills (none of which are present at the Evans Road Landfill), a geomembrane barrier layer is also required in the final cover design to prevent a “bathtub effect”,

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See Title 27, section 21090. In lieu of the prescriptive final cover design, the Discharger may construct an engineered alternative design (EAD) provided that it meets the requisite demonstration under Title 27, section 20080(a).

64. LF-1 and LF-2 were closed in 1984 in accordance with a non-Title 27 prescriptive final cover in accordance with a November 1979 Final Closure Plan (FCP).²² Since then various repairs and improvements have been made to the final cover as part of postclosure maintenance to address erosion, settlement and drainage issues, which are ongoing issues at the site. The final cover components may be described as follows, from top to bottom:
- a. Erosion Resistant Layer – Less than one foot of vegetative cover soil overlain by vegetative cover (native grass);
 - b. Engineered Soil Layer – Two feet of compacted, low permeability soil; and
 - c. Foundation Layer – One foot of existing intermediate cover soil

The engineered soil layer consisted of sandy silt and sandy clay from onsite borrow sources, and clay from a borrow source immediately east of the landfill. Laboratory permeabilities of the cover soil ranged from 1×10^{-5} cm/sec to 1×10^{-8} cm/sec when compacted to 90% of maximum dry density.

65. The landfill cover decks were graded to minimum slopes of two percent and maximum side slopes of 3:1 horizontal-to-vertical (3H:1V). The upper (i.e., NFA) cover deck (about 1535 feet MSL in 1984) was graded about 5H:1V to the west and about 10H:1V to the south toward the lower deck. The lower deck in the southern disposal area (about 1494 feet MSL in 1983) was graded at a 2 percent slope to the western, southern and southeastern side slopes. The side slope grades ranged from 5H:1V to the west to about 3H:1V to the south and southeast except for an offsite area between the landfill (approximately 200 feet x 350 feet) and airport runway, which was graded at 50H:1V to provide an overrun for the airport runway.

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²². *Geotechnical Investigation and Operation and Closure Plan, Auburn Class II-2 Disposal Site*, prepared by Emcon Associates

66. Precipitation and drainage facilities installed as part of landfill closure included unlined drains along the northern, western, and eastern perimeter of the southern disposal area, and an interior drain constructed in the landfill cover in the northeastern portion of the southern disposal area, as shown in Attachment D: Facility Map.
- a. Northern perimeter ditch -- a “V”-shaped ditch about 1.5 feet deep and 3 feet wide) installed to divert run-on from north of the SFA, including the LF-2 (former Class II-1) disposal area. The northern perimeter drain flows joins the western perimeter drain;
 - b. Western perimeter ditch -- drains runoff from the western slopes of the southern disposal area and discharges into the City storm drain along Shale Ridge Road.
 - c. Eastern perimeter ditch -- a 10-foot wide, flat-bottom ditch about 1 foot high, drains the interior ditch in the northern portion of the NFA, the southeastern slopes of the NFA, and the eastern/southeastern slopes of the SFA. This drain also discharges to the City storm drain along Shale Ridge Road, at a point near the southeastern corner of the site.
 - d. The interior drain (also a 1.5 x 3 foot “V” ditch) drains the southern portion of the NFA and the northern portion of the SFA and flows to the eastern perimeter ditch.

LANDFILL POST-CLOSURE MAINTENANCE

67. Title 27, section 20950(a)(2) states, in part:

“ . . . the goal of post-closure maintenance . . . is to assure that the Unit continues to comply with the performance standard of [Title 27, section 20950(a)(2)(A). 1] until such time as the waste in the Unit no longer constitutes a potential threat to water quality . . . ”

68. An aerial site survey conducted in July 2003 indicated that the northern disposal area has settled significantly since closure in 1984. The survey showed a crest elevation of 1512 feet MSL, compared to 1535 MSL in 1984, and reduced crest slopes (i.e. 3 percent) compared to 1984 (10 to 20 percent). The measured cover elevations in the lower deck area were generally the same as in 1984, except for areas of differential settlement.
69. A 20 March 2003 site inspection conducted by Regional Board staff indicated that the landfill cover was not adequately shedding water. Numerous areas of thin vegetation were noted in the northern disposal area and ponding was noted in the hummocky areas of the cover the southern disposal area. In response to the inspection, the Discharger submitted and Regional Board staff approved a 30 June 2003 *Workplan for Drainage and Cover Improvements*. The work plan included an aerial site survey

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(noted above) and field inspection to identify specific areas of the cover and drainage facilities in need of repair. The Discharger submitted the results of this work in a 4 November 2003 report *Recommendations for Final Cover/Drainage Corrective Measures, City of Auburn Landfill* prepared by SCS Engineers. The report included recommendations for both interim and long term cover repairs, as follows:

- a. The recommended interim repairs included:
 - 1) Inspection of the cover surface for ponding immediately after storm events and removal of ponded water.
 - 2) Repair of minor erosion damage
 - 3) Filling in rodent burrows.
 - 4) Re-establishing vegetation over distressed/repared areas.
- b. Proposed long term repair measures included the following:
 - 1) Construction of a new soil-lined V-ditch along top deck to divert run-on.
 - 2) Placement and compaction of approximately 5,200 cubic yards of imported soil in areas of settlement on top and northeast decks.
 - 3) Re-grading the cover to a minimum slope of 2% to restore drainage.
 - 4) Surveying to verify cover grades.
 - 5) Re-establishing vegetation over repaired areas.

The report proposed completion of southern disposal area deck repairs by November 2004 and northern disposal area repairs by November 2005.

70. In fall 2004, Phase I final cover and drainage system improvements were completed in the top-deck area of SFA. The work included re-grading the 2.7-acre top-deck area and the placement, grading, and compaction of approximately 3,000 bank cubic yards of general fill soils. The top-deck area was re-graded to an average surface slope of 2 percent or more to prevent surface water ponding and to allow for proper surface storm water drainage. A 430-foot long drainage swale was installed along the northern boundary of the southern fill area to prevent surface water run-on from the north. After subsequent minor settlements were repaired, a native foothill grass seed mix was hydraulically applied. The Phase I repairs were documented in a November 2004 report. Similar (Phase II) final cover improvements were made into a 3.2-acre of the NFA in the fall 2005. The final cover repairs were documented in technical reports submitted in November 2004 and December 2005, respectively.
71. In December 2004, the Discharger submitted a postclosure maintenance plan (PCMP) in response to a Notice and Compliance Order issued by the Local Enforcement Agency.²³ The PCMP outlined landfill postclosure maintenance and monitoring activities generally consistent with previous WDRs Order R5-2004-0086

²³. See 16 December 2004 *Postclosure Maintenance and End-Use Plan, City of Auburn Landfill*, prepared by SCS Engineers.

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and the requirements of the LEA. The report also included a postclosure land use plan showing existing and potential land uses at the site. Existing uses included a 2-acre bin storage and toter repair area on the cover of LF-2; a 1.6-acre employee parking area immediately north of the SFA (not over the landfill footprint); and a 2.3-acre, fenced area on the east site of the landfill where the adjacent Auburn Airport runway was extended (by easement) onto the property. Potential postclosure land uses identified in the PCMP, subject to LEA and Water Board staff approval, included transfer station vehicle storage (north of the aforementioned employee parking area) and wood storage (northeast of the bin storage area).

72. In September 2009, a large brush fire (the “49er Fire”) occurred in the Highway 49 corridor area that spread to the landfill site. The fire completely burned off the landfill vegetative cover and melted surface leachate piping, which had to be replaced. Only slight damage occurred to the gas probes. The landfill cover was hydroseeded shortly thereafter and the vegetative cover re-established.
73. An aerial topographic survey of the site was last conducted in February 2013. A subsequent inspection by Water Board staff on 13 January 2016 found areas of subsidence and ponding on the SFA and NFA cover decks, which the Discharger repaired in the spring 2016. A drainage swale along the eastern side of the landfill was also re-graded to improve drainage and lined with rock to reduce erosion.
74. Notwithstanding final cover repairs and improvements implemented at the site in 2004 and 2005, these WDRs require that the Discharger to revisit the landfill cover designs at LF-1 and LF-2, and their present condition, to verify that they meet Title 27 performance standards for a closed, Class III landfill. Upon completion of this evaluation, the Discharger is required to submit a work plan for implementing any repairs or improvements necessary to bring the final covers over these units up to Title 27 standards. See Postclosure Specifications E.1 and E.2.

COST ESTIMATES AND FINANCIAL ASSURANCES

75. The Discharger is not required to demonstrate financial assurances for post-closure maintenance to CalRecycle for either landfill (i.e., LF-1 and LF-2) because both landfills ceased operations prior to January 1, 1988. See Title 27, section 22210(b). The Discharger is also not required to demonstrate financial assurances for corrective action for either landfill to CalRecycle because both landfills ceased operations prior to July 1, 1991. See Title 27, section 22220(b).
76. For those solid waste landfills for which postclosure and corrective action financial assurances are not required by CalRecycle under Title 27, Chapter 6, the Discharger is required to demonstrate financial assurances for postclosure maintenance and corrective action to the Central Valley Water Board pursuant to Title 27, sections

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22212(a) and 22222, respectively.

77. Previous WDRs did not include financial assurance requirements for the landfill facility and no postclosure maintenance and corrective action cost estimates and financial assurances have been previously provided for the landfill units. Consistent with Finding 76, these WDRs require that the Discharger shall submit an updated PCMP that includes itemized postclosure maintenance/monitoring activities and cost estimates for both landfill units. A report providing corrective action cost estimates for addressing a known or reasonably foreseeable release from the units is also required to be submitted. See Postclosure Specifications; Financial Assurance Specifications; and Provisions sections.
78. This Order requires that the Discharger provide and maintain financial assurances for postclosure maintenance and corrective action of closed units LF-1 and LF-2 in at least the amounts of the approved cost estimates for these units, as adjusted annually for inflation, to ensure that funds are available for required postclosure maintenance and corrective action of these units. The Discharger is required to establish an irrevocable fund (or to provide other means) as the financial assurance mechanism(s) for these units pursuant to the CalRecycle-promulgated sections of Title 27, Chapter 6, with the Central Valley Water Board named as beneficiary per Financial Assurance Specification F.2. The same funding mechanism may be used for both units.

CEQA AND OTHER REFERENCES

79. The action to revise WDRs for the landfill is exempt from the provisions of the California Environmental Quality Act (Pubic Resources Code §21000, et seq.), in accordance with California Code of Regulations, title 14, section 15301.
80. This Order implements:
 - a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*;
 - b. The prescriptive standards and performance goals of California Code of Regulations, title 27, section 20005 et seq., effective 18 July 1997, and subsequent revisions;
 - c. *The Porter-Cologne Water Quality Control Act*, Division 7, California Water Code; and
 - d. State Water Resources Control Board Resolution No. 68-16, *Statement of Policy With Respect to Maintaining High Quality of Waters in California*.
81. *The Statement of Policy with Respect to Maintaining High Quality of Waters in California*, SWRCB Order WQ 68-16 (hereinafter "Anti-Degradation Policy") was

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adopted by the State Water Board in October 1968. Anti-Degradation Policy limits the Board's discretion to authorize the degradation of "high-quality waters." This policy has been incorporated into the Board's Basin Plans. "High-quality waters" are defined as those waters where water quality is more than sufficient to support beneficial uses designated in the Board's Basin Plan. Whether or not a water is a high-quality water is established on a constituent-by-constituent basis, which means that an aquifer can be considered a high-quality water with respect to one constituent, but not for others. (SWRCB Order No. WQ 91-10.)

82. Anti-Degradation Policy applies when an activity discharges to high quality waters and will result in some degradation of such high quality waters. When it applies, the Policy requires that WDRs reflect best practicable treatment or control (BPTC) of wastes and that any degradation of high quality waters (a) will be consistent with the maximum benefit to the people of the State, and (b) will not result in an exceedance of water quality objectives. If the activity will not result in the degradation of high quality waters, Anti-Degradation Policy does not apply, and the Discharger need only demonstrate that it will use "best efforts" to control the discharge of waste.
83. Anti-Degradation Policy does not apply to the discharge of waste to the Evans Road Landfill. The requirements of this Order are designed to ensure that any such wastes remain contained at the facility and will not reach waters of the State. The requirements of this Order reflect the Discharger's best efforts to control such wastes.
84. Facilities under WDRs are classified for the purposes of determining the annual permit fee and WDR update cycle. These classifications are based on threat to water quality and complexity associated with the discharge. The Auburn Landfill was classified as a "2B" discharge under the previous WDR Order R5-2004-0086. These revised WDRs maintain the "2B" designation. The following fee criteria were used:

Threat to Water Quality:

Category "2" – "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."

Complexity:

Category "B" – "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."

The WDR review cycle for 2B discharges is 10 years from the date of adoption of the WDRs, or, if granted a continuance by the Executive Officer, from the continuance date. The WDR fee schedule may be found on the State Water Resource Control Board website at: <http://www.waterboards.ca.gov/>.

85. Water Code Section 13267(b) provides that: "In conducting an investigation specified in subdivision (a), the Central Valley Water Board may require that any person who

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has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Central Valley Water Board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.”

86. The technical reports required by this Order and the attached "Monitoring and Reporting Program R5-2018-XXXX" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.
87. Water Code section 13360(a)(1) allows the Central Valley Water Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.

PROCEDURAL REQUIREMENTS

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

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of the Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the State Water Resource Control Board website at: <http://www.waterboards.ca.gov/>, or will be provided upon request.

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IT IS HEREBY ORDERED that Order R5-2004-0086 is rescinded, except for purposes of enforcement, and the City of Auburn and Recology Auburn Placer, and their agents, successors and assignees, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. The discharge of new or additional waste, or the relocation of existing waste, to any unit at the site, is prohibited.
2. The discharge of 'hazardous waste' or 'designated waste' to any unit at the site (other than the limited Group I wastes and hazardous asbestos historically discharged at the site) is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in California Code of Regulations, Title 23, section 2510 et seq., and 'designated waste' is as defined in Title 27.
3. Internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.
4. The discharge of waste shall not cause a nuisance condition [Wat. Code, § 13050(m)].
5. The Discharger shall comply with all Standard Prohibitions listed in Section C of the Industrial SPRRs, as applicable to a closed, unlined, Class III landfill.

B. DISCHARGE SPECIFICATIONS

1. Wastes shall remain within their designated disposal area at all times.
2. The Discharger shall, in a timely manner, remove any wastes discharged at this facility in violation of this Order and dispose of them at an authorized facility. If the Discharger is unable to remove the waste, the Discharger shall submit a report to the Central Valley Water Board explaining how the discharge occurred, why the waste cannot be removed. If the waste is a hazardous waste, the Discharger shall immediately notify the Department of Toxic Substances Control.
3. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the unit [Title 27, § 20365(e)].
4. During wet weather conditions, the facility shall be operated and graded to minimize leachate generation. Seeps shall be monitored as outlined in the MRP until they have been successfully repaired (i.e., 0 gallons/24 hours).

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C. FACILITY SPECIFICATIONS

1. Both landfill units at the site (i.e., LF-1 and LF-2) shall be maintained to ensure that wastes, including leachate, are a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [Title 27, § 20240(c)], including the capillary fringe. Engineered alternatives to this Title 27 prescriptive requirement may be approved by the Executive Officer upon sufficient demonstration by the Discharger under Title 27, section 20080(b) and/or the Response to Release specifications in Section J of the Industrial SPRRs, as applicable.
2. The Discharger shall maintain a Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements in accordance with State Water Board Order No. 2014-0057-DWQ (Industrial General Permit) (or most recent general industrial storm water permit), or retain all storm water on-site.
3. Annually, prior to the anticipated rainy season but no later than 1 November, any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed and reported in compliance with MRP No. R5-2018-XXXX.
4. The Discharger shall comply with Standard Facility Specifications 2 through 9 listed in Section E of the Industrial SPRRs, as applicable to a closed, unlined Class III landfill.

D. DESIGN AND CONSTRUCTION SPECIFICATIONS

1. The Discharger shall maintain storm water conveyance systems for Class III units for a 100-year, 24-hour storm event. [Title 27, § 21750(e)(3)]. All landfill drainage conveyances shall be graded and lined, as necessary, to convey runoff and minimize percolation consistent with the performance standards of Title 27, section 20365.
2. The Discharger shall comply with all of the Storm Water Provisions listed in Section L of the Industrial SPRRs, as applicable to a closed, unlined Class III landfill.
3. Waste management units and their respective containment structures shall be designed, constructed and maintained to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping [Title 27, § 20365(a)].

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4. All Class III landfill units shall be designed to withstand the maximum probable earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion, or gas [Title 27, § 20370(a)].
5. Hydraulic conductivities for the final cover shall be relative to water [Title 27, section 20320(b)]. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities as long as a reasonable number of field hydraulic conductivity tests are also conducted [Title 27, section 20320(c)].
6. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [Title 27, § 20320(a)].
7. All containment structures shall be designed by, and construction shall be supervised by, a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge.
8. The Discharger shall not proceed with construction until the construction plans, specifications, and all applicable construction quality assurance plans have been approved.
9. The Discharger may propose changes to a containment system design prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed containment system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Central Valley Water Board in revised WDRs.
10. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a waste management unit's containment features or monitoring systems shall be approved by a California registered civil engineer or a certified engineering geologist [Title 27, § 21710(d)].

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E. POSTCLOSURE MAINTENANCE SPECIFICATIONS

1. By **15 June 2018**, the Discharger shall submit for approval a work plan for a field investigation to verify that the final covers installed over LF-1 and LF-2 meet Title 27 performance standards for a closed, Class III landfill. At a minimum, the Landfill Final Cover Investigation Work Plan shall include the following:
 - a. A summary of Title 27 prescriptive and performance standards applicable to the units;
 - b. Engineered drawings showing the final cover design(s) at LF-1 and LF-2, as built;
 - c. A list of tasks, including, but not necessarily limited to:
 - i. An investigation of the cover thickness(es) and soil type(s) at each unit;
 - ii. Plans for appropriate field and laboratory testing of the cover (e.g., moisture, compaction, hydraulic conductivity);
 - iii. Identification of any areas not meeting Title 27 performance standards; and
 - d. An implementation schedule consistent with the timeline for submission of the Landfill Final Cover Repair/Improvement Work Plan required in Postclosure Maintenance Specification E.2 below.

See Finding 74 and Provision I.8.b.

2. By **31 August 2018**, the Discharger shall, based on the Landfill Final Cover Investigation required above, submit for approval a Landfill Final Cover Repair/Improvement Work Plan proposing all repairs and/or improvements necessary to bring to the landfill final covers into compliance with Title 27 performance standards. At a minimum, this work plan shall include the following:
 - a. A summary of the results of the Landfill Final Cover Investigation;
 - b. Appropriate engineered drawings showing the locations of planned repairs and/or improvements, including cover grades and thickness;
 - c. A list of tasks describing the repairs/improvements to be performed at each unit (e.g., re-compaction of cover soil, placement of additional clay soil, increasing cover thickness).
 - d. A Construction Quality Assurance Plan for the work to be performed; and
 - e. An implementation schedule consistent with the due date for the certification report required under Postclosure Maintenance Specification E.3 below.

All final cover repairs and/or improvements, including re-compaction of existing cover soil and/or placement of additional clay soil, if necessary, shall be completed in accordance with the approved Landfill Final Cover Repair/Improvement Work Plan.

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3. By **15 October 2018**, the Discharger shall submit a certification report documenting the final cover repairs and/or improvements to LF-1 and LF-2 completed under approved Landfill Final Cover Repair/Improvement Work Plan required under Postclosure Specification E.3 above. See Provision I.8.d.
4. By **31 May 2019**, the Discharger shall submit an updated PCMP for LF-1 and LF-2, including, but not limited to, updated postclosure maintenance plans and cost estimates per Title 27, section 21769(c)(1)(A) reflecting the final cover repairs/improvements completed per Postclosure Specification E.3 above and the groundwater monitoring wells installed per Finding 40 and Provision I.7.d. See Finding 77, Financial Assurances Specification F.1, and Provision I.8.e.
5. The Discharger shall ensure that the vegetative/erosion resistant layer receives necessary seed, binder, and nutrients to establish the vegetation proposed in the final closure plan. The Discharger shall install necessary erosion and sedimentation controls to prevent erosion and sediment in runoff from the closed landfill during the period the vegetation is being established.
6. The completed final cover shall be periodically tested for damage or defects by monitoring surface emissions pursuant to California Code of Regulations, title 17, section 95471(c) and Title 27, section 21090(a)(4)(A). Defects will be repaired and tested for adequacy based on the closure CQA Plan.
7. The Discharger shall comply with Standard Postclosure Maintenance Specifications 1 through 12 listed in Section G of the Industrial SPRRs, and Design and Construction Specifications D.1 through D.10 herein, as applicable to a closed, unlined, Class III landfill.

F. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall update the PCMP for a unit any time there is a change that will increase the amount of the post-closure maintenance/monitoring cost estimate and/or as otherwise required under this Order (e.g., per Postclosure Specification E.4), Updated PCMPs shall meet the requirements of Title 27, section 21769(c), and include a lump sum estimate of the cost of carrying out all actions necessary to update the post-closure maintenance plan and to carry out the remainder of the first thirty years of post-closure maintenance and monitoring. Reports regarding financial assurance submitted under F.4.a below shall reflect the updated cost estimate. Updated PCMPs for the closed landfill units at the site shall be submitted to the Central Valley Water Board, the Local Enforcement Agency, and CalRecycle. See Postclosure Specification E.4.

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2. The Discharger shall demonstrate to the Central Valley Water Board that it has obtained and maintained required assurances of financial responsibility for LF-1 and LF-2 for both post-closure maintenance per Title 27, section 22212(a) and for corrective action to address all known or reasonably foreseeable releases from the landfill units per Title 27, section 22222.
3. The financial assurances mechanisms for postclosure maintenance and corrective action shall be among those listed in Title 27 Section 22228 for which the Discharger is eligible.
4. By **1 June 2020**, the Discharger shall, per Financial Assurance Specification F.2 above, submit a report showing that it has established the following:²⁴
 - a. An irrevocable postclosure maintenance funding mechanism, with the Central Valley Water Board named as beneficiary, to ensure funds are available for required postclosure maintenance of LF-1 and LF-2. The funding amounts shall be consistent with the updated PCMP submitted under Provision I.8.e, as annually adjusted for inflation; and
 - b. An irrevocable funding mechanism for corrective action, with the Central Valley Water Board named as beneficiary, to ensure funds are available for required corrective action of LF-1 and LF-2. The funding amounts shall be in accordance with the approved corrective action cost estimates for these units provided in the corrective action cost estimates report for these units submitted under Provision I.8.a, as annually adjusted for inflation.
5. By **1 June of each year**, the Discharger shall submit a report to the Central Valley Water Board that reports the balance of both the postclosure and corrective action funds or the amounts of the Guarantees and the adjustments to account for inflation in accordance with Title 27 Section 22236.

G. MONITORING SPECIFICATIONS

All Units

1. The Discharger shall, for each landfill unit, comply with the detection and corrective action monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone in accordance with these WDRs, MRP R5-2018-XXXX, and the applicable sections of the Industrial SPRRs.

24. For financial assurance mechanisms requiring funding, the Discharger shall either fully fund the mechanism by 1 June 2020 or may propose a payment schedule. If the Discharger proposes a payment schedule to fund the mechanism, it shall submit a report by 1 June 2021 showing that the mechanism is fully funded. For financial assurance mechanisms not requiring funding, such as a Guarantee, the Discharger shall submit a report showing the mechanism is in place by 1 June 2020.

2. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, MRP No. R5-2018-XXXX, and the applicable sections of the Industrial SPRRs incorporated by reference under this Order.
3. The Discharger shall conduct background monitoring for each classified unit at the site consistent with Section 20415, including, but not necessarily limited to, subsections 20415 (b), (e)(6), and (e)(10).²⁵ Background monitoring of units may be conducted contiguously if demonstrated per Monitoring Specification G.10. See also Standard Monitoring Specification G.26, Industrial SPRRs.
4. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in MRP R5-2018-XXXX and the applicable sections of the Industrial SPRRs incorporated by reference under this Order.
5. Concentration limits shall be developed using upgradient data absent a satisfactory demonstration to the contrary in an approved WQPS Report. The groundwater monitoring system may include Background Monitoring Points that are not hydraulically upgradient of the Unit if the discharger demonstrates to the satisfaction of the Central Valley Water Board that sampling at other Background Monitoring Points will provide samples that are representative of the background quality of ground water or are more representative than those provided by the upgradient Background Monitoring Points. See Title 27, section 20415(b)(2).
6. Initial Background Sampling –Consistent with Title 27, section 20415(e)(6), the discharger shall collect all groundwater monitoring data necessary for selecting the appropriate monitoring data analysis methods and for establishing background values for the landfill unit under Title 27. Upon installation of a new background monitoring well, quarterly sampling shall be conducted on that well for at least one year to establish background concentrations for inorganic constituents.
7. The concentrations of the constituents of concern in waters passing the Point of Compliance (defined pursuant to Title 27, section 20164 as a vertical surface located at the hydraulically downgradient limit of the landfill unit that extends

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²⁵. Background and downgradient wells for interwell detection monitoring shall be identified by tracing groundwater gradient flow streamlines (i.e., flow lines perpendicular to the gradient contours) through each unit, as applicable. Background wells shall be found by following the flow streams upgradient from the unit (or units, if contiguous). and down gradient wells shall be found by following the same flow streams down gradient from the unit(s).

through the uppermost aquifer underlying the unit) shall not exceed the concentration limits established pursuant to MRP R5-2018-XXXX.

8. Detection monitoring of each unit for naturally occurring inorganic constituents shall be conducted on an interwell basis (i.e., using hydraulically upgradient monitoring points as background) absent an approved demonstration of intrawell monitoring as an engineered alternative design under Title 27, section 20380(e). To the extent that such demonstration is based on a claim of spatial variability of the groundwater geochemistry, the report shall demonstrate that such variability is not the result of a release from a waste management unit at the site.
9. Detection monitoring data analysis methods, including those used for analysis of background data, shall be in accordance with Title 27, Section 20415(e)(7) through (e)(10) and the Industrial SPRRs, as applicable.
10. Where the proximity of units to each other, physical constraints, obstructions or other related factors (e.g., utility easement) render installation of a monitoring well infeasible or impractical at a prescriptive location (e.g., directly upgradient of unit, point of compliance well), the Discharger may propose a contiguous and/or engineered alternative monitoring system for the unit(s) per Title 27, sections 20405(b), 20415(e)(3) and 20380(e).
11. The Discharger shall adequately monitor soil pore gas for the presence of LFG in concentrations that may threaten water quality or otherwise warrant adjustments or improvements to the LFG extraction system, including the installation of additional gas extraction vents or monitoring wells.
12. Any proposal for concentration limits greater than background (CLGBs) shall be accompanied by the requisite demonstration under Section 20400(c) (i.e., that it is technologically or economically infeasible to achieve the background value for that constituent and that the constituent will not pose a substantial present or potential hazard to human health or the environment). Approval of CLGBs shall require approval of revised WDRs by the Central Valley Water Board.
13. For units in corrective action (i.e., LF-1), the data analysis methods shall also include trend analysis; an evaluation of the water chemistry; and preparation of contaminant contour plots to monitor the nature of the release and effectiveness of corrective action measures, as specified in the MRP.
14. For units in corrective action (i.e., LF-1), the Discharger shall install a sufficient number of groundwater monitoring wells at appropriate locations and depths in the uppermost aquifer, and in other aquifers or perched zones not already monitored,

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as necessary, to define the nature and extent of the release and evaluate the effectiveness of the corrective action program.

15. As permitted by Title 27, Section 20430(f), corrective action may be terminated when the Discharger demonstrates that the constituents of the release have been reduced to levels at or below their respective concentration limits throughout the entire zone affected by the release. The Discharger may make this demonstration by satisfying the minimum “proof period” specified in Title 27 (one year) or as otherwise demonstrated under Title 27, section 20380(e) and approved by Water Board staff. The “proof period” shall consist of at least six semiannual sampling events for each monitoring point that are approximately evenly distributed over a three-year period in which the concentration of the constituents of the release remain at or below their respective sampling limit.
16. The Discharger shall comply with all Standard Monitoring Specifications listed in Section I, and all Response to a Release specifications listed in Section J, of the Industrial SPRRs, as applicable to a closed, unlined, Class III landfill.

H. EVALUATION MONITORING AND CORRECTIVE ACTION SPECIFICATIONS

1. By **15 July 2018**, the Discharger shall submit an Evaluation Monitoring Program (EMP) workplan to determine the base elevation of landfill wastes, and the amount of separation between landfill wastes and groundwater, if any, at representative locations within the following areas of the landfill:
 - a. The western and central portions of the SFA in LF-1;
 - b. The leachate collection system along the perimeter of the SFA; and
 - c. The former excavation pits at LF-2.See Provision I.7.a.
2. The EMP required above shall characterize the amount of separation between wastes and groundwater using relevant benchmarks, such historical range, seasonal maximum and minimum, current separation; and separation based on the highest anticipated groundwater elevation at a given location. The EMP shall also determine the following:
 - a. The maximum depth of waste and thickness of the waste column in representative portions of the landfill;
 - b. Where groundwater is in contact with landfill wastes and the distance groundwater has risen into wastes (excluding capillary fringe); and
 - c. Whether leachate collection sump pumping is affecting the groundwater levels in the affected areas of the SFA.

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3. By **15 January 2019**, the Discharger shall submit an EMP Report documenting the results of the EMP investigation, including contour maps of relevant parameters (e.g., base of landfill waste, highest anticipated groundwater elevation, minimum anticipated groundwater separation, etc.). The EMP Report shall also provide recommendations and a schedule for further investigation and/or the development of an Engineering Feasibility Study/Corrective Action Plan (EFS/CAP), as warranted based on the results of the EMP investigation. See Provision I.7.c.
4. By **15 May 2019**, based the EMP Report submitted under Evaluation Monitoring and Corrective Action Specification H.3 above, and the Monitoring Well Installation Report submitted under Provision I.7.d below, the Discharger shall submit an updated Site Conceptual Model with hydrogeologic cross-sections showing monitoring wells, the unsaturated zone, fractured bedrock, co-related zones, the uppermost aquifer, the water table, the base of each unit, and other relevant information. See Finding 41 and Provision I.7.e.
5. Any revised or updated EFS/CAP submitted under this Order shall, among the corrective action measures necessary to return the unit into compliance with the Water Quality Protection Standard, consider all measures necessary to bring the landfill unit into compliance with Title 27 siting and waste containment standards for a Class III landfill. For an unlined landfill, such measures shall, at a minimum, include one or more of the following, as applicable:
 - a. Installation of containment features (e.g., slurry wall between NFA and SFA, separate leachate collection sump and conveyance lines for NFA) necessary to restore adequate separation between wastes and groundwater per Title 27, section 20260d;
 - b. Installation of a Title 27-compliant final cover, including grading and drainage facilities, per Title 27, section 21090 or Title 27, 20080(a), if not already proposed/completed per Postclosure Specification E.1;
 - c. Groundwater extraction and treatment and/or appropriate disposal; and
 - d. Clean closure (or partial clean closure) of areas where one or more of the above measures are not feasible or are ineffective to comply with Title 27 standards for a Class III landfill.

See Findings 50, 51, 54, 62, 63 and 85; and Section J, *Response to Release*, Industrial SPRRs.

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I. PROVISION

1. The Discharger shall maintain a copy of this Order at the facility, including the MRP R5-2018-XXXX, and the Industrial SPRRs dated April 2016, which are part of this Order, and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 not specifically referred to in this Order.
3. The Discharger shall comply with MRP R5-2018-XXXX, which is incorporated into and made part of this Order by reference.
4. The Discharger shall comply with the applicable portions of the Industrial SPRRs, as referenced in the specifications of this Order.
5. If there is any conflicting or contradictory language between the WDRs, the MRP, or the SPRRs, then language in the WDRs shall supersede either the MRP or the SPRRs, and language in the MRP shall supersede the SPRRs.
6. All reports required by this Order shall be submitted pursuant to Water Code section 13267, and shall be prepared by a California-registered Civil Engineer or Certified Engineering Geologist.
7. Pursuant to Section 13267 of the California Water Code, the City of Auburn/Recology Auburn Placer shall submit the following technical reports relevant to groundwater monitoring and corrective action at the site:

	Report	Due Date
a.	An Evaluation Monitoring Program (EMP) investigation work plan to determine the base of waste and minimum groundwater separation at representative locations within the SFA and LF-2. See Evaluation Monitoring and Corrective Action Specification H.1.	15 July 2018
b.	A work plan and schedule for the installation of additional groundwater monitoring wells, appropriately placed and screened, as follows: <ol style="list-style-type: none"> i. A sufficient number of wells along the downgradient perimeter of LF-1 to contiguously monitor the NFA and SFA; and ii. A sufficient number of wells along the perimeter of LF-2 to monitor the unit and verify the direction of 	15 August 2018

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	Report	Due Date
	groundwater flow. See Finding 40 and Industrial SPRRs, Standard Monitoring Specifications I.27 and I. 35.	
c.	An EMP Report providing the results of the EMP investigation required under I.7.a above per Evaluation Monitoring and Corrective Action Specification H.3.	15 January 2019
d.	A Monitoring Well Installation Report for the groundwater monitoring wells required under I.7.b above.	15 February 2019
e.	An updated Site Conceptual Model with detailed hydrogeologic cross-sections per Evaluation Monitoring and Corrective Action Specification H.4.	15 May 2019

The EMP and Monitoring Well Installation reports required in c and d above may be submitted as a single document.

8. Pursuant to Section 13267 of the California Water Code, the Discharger shall submit the following technical reports relevant to postclosure maintenance and financial assurances for LF-1 and LF-2:

	Report	Due Date
a.	A corrective action cost estimates report for LF-1 and LF-2 for approval in preparation for funding the demonstration required under Financial Assurances Specification F.4.b.	31 May 2018
b.	A Landfill Cover Investigation Workplan to verify that the final covers over LF-1 and LF-2 meet Title 27 performance standards for a closed Class III landfill. See Postclosure Specification E.1.	15 June 2018
c.	A Landfill Final Cover Repair/Improvement Work Plan (including report of results of the above landfill cover investigation work plan) for any repairs and/or improvements necessary to bring the final covers over LF-1 and LF-2 up to Title 27 standards. See Postclosure Specification E.2.	31 August 2018
d.	A certification report documenting all repairs and/or improvements implemented under the work plan required in I.8.c. See Postclosure Specification E.3.	15 October 2018

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	Report	Due Date
e.	An updated PCMP for LF-1 and LF-2, including, but not limited to, updated postclosure maintenance plans and cost estimates per Postclosure Specification E.4.	31 May 2019

9. By **31 January 2020**, the Discharger shall submit a revised Water Quality Protection Standard (WQPS) Report describing the WQPS for LF-1 and LF-2 and each water-bearing media monitored under this Order (i.e., groundwater and surface water). The revised WQPS report shall specify the Constituents of Concentration, Concentration Limits, Monitoring Points, Points of Compliance, and Compliance Periods, consistent with the requirements of this Order and Title 27 regulations. In addition, the WQPS shall evaluate whether monitoring wells are appropriately placed and screened, including in zone(s) with the highest hydraulic conductivity, to detect the earliest possible release from a unit to the uppermost aquifer.
10. By **31 January 2020**, the Discharger shall submit an updated Sample Collection and Analysis Plan containing proposed sampling and analysis methods and protocols for monitoring all units at the site consistent with the revised WQPS Report required under Provision I.9 above and Standard Monitoring Specification I.7 of the Industrial SPPRs.
11. The Discharger shall comply with all General Provisions listed in Sections K of the Industrial SPPRs applicable to a closed, Class III landfill.
12. The Central Valley Water Board has converted to a paperless office system. All project correspondence and reports required under this Order shall therefore be submitted electronically rather than in paper form, as follows:
 - a. All project correspondence previously submitted in paper form (e.g., letters, short reports) shall be converted to Portable Document Format (PDF) and emailed to the Central Valley Water Board at: centralvalleysacramento@waterboards.ca.gov. To ensure that the submittal is routed to the appropriate staff as quickly as possible, the following information shall be included in the body of the email:

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Attention:	Title 27 Compliance & Enforcement Unit
Discharger name:	City of Auburn and Recology Auburn Placer
Facility name:	Auburn Landfill
County:	Placer
CIWQS place ID:	206725

Unit staff and senior shall also be cc'd on the email.

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

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

Notification of the Geotracker upload shall be emailed to the Central Valley Water Board at: centralvalleysacramento@waterboards.ca.gov, as described above.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

PAMELA C. CREEDON, Executive Officer

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