

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2011-_____

WASTE DISCHARGE REQUIREMENTS
FOR
AMADOR COUNTY
FOR
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
OF BUENA VISTA LANDFILL
AMADOR COUNTY

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

1. The County of Amador (hereafter Discharger) owns and operates a former municipal solid waste landfill about three miles south of Lone and one-half mile north of Buena Vista, in Section 7, T5N, R10E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order. The Facility is 262-acres and comprised of Assessor's Parcels Nos. 12-04-040 through 12-04-046 of which 145 acres are on the east side of Buena Vista Road where the closed landfill units are located. The remaining 117 undeveloped acres are on the west side of the road and are not part of the landfill, as shown in Attachment B. The facility was previously regulated by Waste Discharge Requirements (WDRs) Order No. R5-2003-0078 in conformance with California Code of Regulations (CCR) Title 27.
2. These WDRs have been prepared to prescribe post-closure maintenance requirements for the Phases I, II and III Waste Management Units (WMUs) and continued operation of the Class II Surface Impoundment. In addition, these WDRs require the Discharger to continue the corrective action program to remove volatile organic compounds from the vadose zone as well as from the groundwater beneath WMU I.
3. On 16 December 2010, the Discharger submitted an amended Report of Waste Discharge (RWD) as part of the Joint Technical Document (JTD) for the landfill. The information in the RWD/JTD was used to write these WDRs. The RWD contains the applicable information required by CCR Title 27, Chapter 4, Subchapter 3, Article 4 (Title 27).
4. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated federal municipal solid waste regulations under the Resource Conservation and Recovery Act (RCRA), Subtitle D (Title 40, Code of Federal Regulations, Part 258), hereafter referred to as "Subtitle D". These regulations apply to all California Class II and Class III landfills which accept municipal solid waste.
5. The WMUs at the Buena Vista Landfill are described in the following table:

TABLE I
Waste Management Unit Description

Unit	Title 27 Class	Volume	Description of Liner Components	Status
Phase I	Class III	680,000 cu yards	Unlined and no LCRS. The final cover consists of a two-foot foundation layer, overlain by a one-foot 1×10^{-6} cm/sec low hydraulic conductivity layer, and covered by a 6-inch vegetative cover.	Filled and closed. Final cap constructed in 1995
Phase II	Class II	600,000 cu yards	<p>The liner consists of a two-foot thick layer of compacted clay, overlain by a 1-foot thick gravel blanket LCRS with inclusive perforated piping. The LCRS drains to the west-southwest. The eastern edge of the Phase II WMU consists of a near vertical cut slope. This slope is lined with a scrim-reinforced, spray-on 100-mil thick liner. The backslope along the eastern end of the unit is lined with an 80-mil thick high-density polyethylene liner (HDPE) overlain by a geonet, a 10-ounce per square foot geotextile fabric, and a two-foot thick operations layer.</p> <p>The final cover for Phases II/III consists of a minimum 2-feet thick foundation soil layer, 40-mil LLDPE geomembrane, geocomposite drainage layer (side slopes only) and a minimum 2-feet thick vegetative soil layer.</p>	Filled and closed, Final cap constructed in 2009
Phase III	Class II	500,000 cu yards	<p>The liner consists of one-foot of compacted clay, with a permeability of 2.0×10^{-8} cm/sec. Overlain by a 60-mil HDPE geomembrane, a 16 ounce per square yard nonwoven geotextile, and a 1-foot thick gravel drainage layer.</p> <p>The Phase III final cover is described above.</p>	Filled and closed, Final cap constructed in 2009
Surface Impoundment	Class II	1.3 mil. Gallons (measured at 30 inches of freeboard)	The base of the surface impoundment consists of a 2 ft. low permeability soil layer ($K_s 1 \times 10^{-6}$ cm/sec) overlain by the leachate collection and recovery system which is covered by a 45-mil Hypalon 3-Ply, geotextile.	Operating

6. Amador County owns, and ACES Waste Services, Inc. operates, the Western Amador Recycling Facility (WARF) located on the landfill property. The WARF is a solid waste transfer station and recycling facility that operates under a separate Solid Waste Facility Permit. Leachate generated from the WARF is discharged to the Class II Surface Impoundment.

SITE DESCRIPTION

7. This site is situated at the base of the Sierra Nevada Foothills along the eastern margin of the San Joaquin Valley with elevations ranging from 370 to 440 feet above mean sea level (MSL).
8. The hydraulic conductivity of the shallow native soils underlying the site displayed values ranging from 2×10^{-8} and 1.9×10^{-3} cm/sec based on the Clay Borrow Area Evaluation Study that used ASTM Standard D2434 "Permeability of Granular Soils" for the laboratory method.
9. There are no known Holocene faults within 1,000 feet of the facility. The closest fault is the Bear Mountains Fault Zone that is considered part of the Foothills Fault System. The maximum credible peak horizontal acceleration for Buena Vista landfill is 0.43 g generated from a magnitude 6.5 earthquake along the Foothill Fault System.
10. Land within 1,000 feet east of the facility is used for firework manufacturing and testing. The land 1000 feet north and to the west has been mined for clay. Open vegetated space extends along the southern boundary for 1000 feet.
11. The facility receives an average of 21.6 inches of precipitation per year and the mean pan evaporation is 60 inches per year as measured at the Camp Pardee Station (approximately five miles southeast of the site).
12. The 100-year, 24-hour precipitation event is approximately 3.94 inches, and the 1,000-year, 24-hour storm event is 5.97 inches as calculated from the California Department of Water Resources Bulletin No. 195 - Camp Pardee Station.
13. The waste management facility is not within a 100-year floodplain, as determined from the Federal Flood Insurance Map, Community Panel No. 39 and 44.
14. There are no municipal, domestic, industrial, or agricultural groundwater supply wells within 2,400 feet of the Facility Waste Management Units. There are nine groundwater supply wells within one mile of the site.

WASTE CLASSIFICATION AND UNIT CLASSIFICATION

15. The Phase I unit was classified as a Class III WMU, and the Phase II and III units were classified as Class II WMUs in accordance with Title 27.
16. The Class II surface impoundment accepts designated liquid waste. The following liquids are currently approved for discharge to the impoundment: 1. Leachate generated onsite, including liquids collected in Phase II and III WMU LCRS, the surface impoundment LCRS and leachate from the Western Amador Recycling Facility; 2. Landfill Gas Condensate; 3. Extracted groundwater from the groundwater extraction trench and other onsite corrective actions; and 4. Contact water from the WARF. No liquids generated offsite will be discharged into the impoundment.

SURFACE WATER AND GROUNDWATER CONDITIONS

17. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
18. Surface water drainage flows to two unnamed ephemeral streams. The majority of surface water drainage is diverted to a pond near the southern property boundary. This pond (hereafter runoff holding pond) is unlined and has a total capacity of approximately nine acre-feet (2.93 million gallons). Overflow from the pond drains to Jackson Creek, approximately 3,500 feet south of the property boundary. Jackson Creek is tributary to Dry Creek, thence to the Cosumnes and Mokelumne Rivers in the Herald Hydrologic Area (531.11) of the San Joaquin River Basin.
19. The landfill is on the eastern margin of the northern San Joaquin Valley. The beneficial uses of these surface waters are domestic, municipal, agricultural, and industrial supply, ground water recharge, recreation, aesthetic enjoyment, fresh water replenishment and habitat, spawning, wildlife habitat and the preservation and enhancement of fish, wildlife, and other aquatic resources.
20. The first encountered groundwater is about 24 to 34 feet below the native ground surface. Groundwater elevations range from 383 feet MSL to 335 feet MSL. The groundwater is semi-confined with local perched zones. Groundwater elevations fluctuate seasonally as much as 4 feet.
21. Monitoring data indicate background groundwater quality (as measured at MW-14) has an electrical conductivity (EC) ranging between 59.2 and 76.1 micromhos/cm, with total dissolved solids (TDS) ranging between 80 and 140 mg/l.
22. The direction of groundwater flow is toward the west-southwest. However, a groundwater mound exists beneath the eastern margin of the Phase I WMU. The average

groundwater gradient is approximately 0.031 feet per foot. The average groundwater velocity is 0.76 feet per year.

23. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.

GROUNDWATER AND UNSATURATED ZONE MONITORING

24. The following sixteen groundwater-monitoring wells were installed at various times during the development and expansion of the facility. Table 2 provides the geographic coordinates and elevations of the system wells.

TABLE 2
 GEOGRAPHICAL POSITION OF GROUNDWATER MONITORING WELLS

Well ID	Northing	Easting	Top of Casing Elevation*	Top of Screen Elevation*
L-1	N1875165.752	E6873210.032	371.04	341.04
MW1	N1874839.5826	E6874353.3671	423.45	373.45
MW3A	N1875206.4453	E6873132.7367	368.72	349.22
MW3B	N1875218.8535	E6873125.1782	368.97	320.97
MW4A	N1874762.5430	E6873323.1109	377.82	343.82
MW5	N1874336.7608	E6873403.3796	364.38	309.38
MW5S	N1874338.3991	E6873367.7695	365.24	350.24
MW7	N1875148.6379	E6872837.4148	362.70	307.7
MW9	N1875928.1461	E6873534.6547	377.78	322.78
MW10	N1875378.4391	E6873099.3295	373.15	358.15
MW11	N1875523.0318	E6873995.0133	390.11	366.11
MW13	N1874855.1969	E6873997.4618	397.13	364.13
MW14	N1874871.7253	E6874674.2937	430.61	365.61
MW15	N1874239.2513	E6873967.0133	407.67	352.67
MW16	N1874597.6988	E6873342.3824	378.21	338.21
MW20	N1875195.2391	E6874536.5195	434.21	404.21
MW21	N1874362.3691	E6874602.0195	424.36	386.36

* Elevations expressed as feet above mean sea level.

25. The detection monitoring system wells that were installed for the closed Phase I WMU include the following: MW1, MW11, and MW13. Due to the proximity to the waste, and depth of completion, the groundwater extraction trench serves as the point of compliance along the western extent of the WMU.

26. Phase II and Phase III WMUs share a common detection monitoring system. The monitoring wells that meet the intent of a Monitoring Point along the Point of Compliance include monitoring well MW4, MW16, and MW5S.
27. Monitoring well MW21 has been installed adjacent to the Class II Surface Impoundment as a detection monitoring point as required by §20415(b) of Title 27. Additional wells may be required depending on the physical and chemical data collected during the subsequent monitoring events.
28. The Discharger's detection monitoring program for groundwater satisfies the requirements contained in Title 27.
29. Volatile organic compounds (VOCs) have been detected in groundwater. These detections demonstrate that this landfill has had a release. VOCs are the primary waste constituents detected in groundwater. 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 Unit.
30. Title 27 Sections 20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with Title 27 Section 20415(b)(1)(B)2.-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
31. The Regional Water Board may specify a non-statistical data analysis method pursuant to Title 27 Section 20080(a)(1). Section 13360(a)(1) of the California Water Code allows the Regional Water Board to specify requirements to protect underground 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.
32. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.
33. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one non-naturally

occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

34. The unsaturated zone monitoring system consists of six suction lysimeters installed under the Phase I, II and III WMUs (VZ-1, -4, -5, -9, -10 and -12) and two lysimeters installed under the Class II impoundment (PZ-1 and -2). The lysimeters shall be tested semi-annually to determine if liquid exists, and if liquid can be recovered and sampled.
35. The number and location of gas monitoring points may change as efforts to control landfill gas evolve.
36. The Discharger's current unsaturated zone monitoring system satisfies the Title 27 requirements.

GROUNDWATER DEGRADATION AND CORRECTIVE ACTION

37. The following volatile organic compounds were detected in the extraction trench sump (L-1), groundwater wells downgradient of Phase I Unit (MW-10, -3A, & -3B) and groundwater wells sidegradient to Phase I Unit (MW-1, -11, -13, & -15) in the most recent monitoring event (Fourth Quarter 2010):

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Constituent	L-1	MW-1	MW-10	MW-11	MW-13	MW-15	MW-3A	MW-3B
1,1-Dichloroethane	0.36	0.28		5.4	0.55			0.12
1,2-Dichloropropane				1.8				
1,2-Dichloropropane				0.27				
1,4-Dichlorobenzene	1.5	0.79		0.28	0.12			
Acetone								
Benzene	0.36	1.2		2.1			0.1	
Chloromethane								
cis-1,2-Dichloroethylene	0.63	0.22		0.78	0.36			0.15
Dichlorodifluoromethane	0.14	19	0.17	18	6.7	0.32	0.72	2.2
Diisopropyl ether				0.68				
Ethylbenzene				0.53				
Methyl tert-butyl ether							0.18	
Methylene chloride		4.1		17	2.7			
Tetrachloroethylene		0.22		1.4	0.48	0.14		0.14
Toluene				0.38				
Trichloroethylene		0.14		1.6	0.3			
Trichlorofluoromethane		0.85		0.43	0.28			
Vinyl chloride				1.2				0.45
Xylene (total)		0.5		0.83				

All concentrations in ug/L

38. Based on the Fourth Quarter 2010 groundwater monitoring report, the VOC plume is directly adjacent to and below Phase I waste cell.

39. To control and reduce the release of VOCs impacts to groundwater, three corrective action measures have been implemented: (a) Leachate and landfill gas extraction from twenty-four dual leachate and landfill gas extraction wells; (b) landfill covers on the three solid waste cells; and (c) a groundwater extraction trench down-gradient from the Phase I waste cell. The groundwater VOC plume is being captured by the groundwater extraction trench.

40. Previous studies have demonstrated that groundwater rises into the bottom of the Phase I Landfill Unit. This WDRs requires that the current corrective action program be evaluated to determine if additional remedial actions are necessary to prevent groundwater from contacting waste.

Groundwater Extraction Trench

41. In March 1987, pursuant to AB 2535, the Discharger submitted its Solid Waste Assessment Test (SWAT) report for the site that indicated that leachate from the closed Phase I WMU had impacted groundwater. In November 1992, the Discharger installed a groundwater extraction trench, downgradient of the Phase I Unit (West of the Unit) and in 2002 the sump was deepened to improve performance. The trench is approximately 350 feet long and was constructed to collect contaminated water from the uppermost water bearing zone. The trench is keyed into low permeable sediments, is two-feet wide with a depth ranging from 17 to 34 feet bgs. A sump was installed approximately 110-feet from the south end of the trench. The trench is filled with $\frac{3}{4}$ -inch washed gravel to a depth of 10-feet bgs. A geotextile layer overlays the gravel. From the geotextile layer to the ground surface, native soil was used for backfill.
42. The extraction trench removes contaminated groundwater down-gradient of the Phase I waste cell and acts as a hydraulic barrier to offsite migration. In 2009 the extraction trench removed over 310,470 gallons of contaminated groundwater. Operation of the extraction trench has created a cone of depression (groundwater sink), drawing groundwater toward the trench. The groundwater monitoring data indicate that the Groundwater Extraction Trench is successful at controlling offsite migration of VOC contaminated water from the Phase I Unit. Figures 9-8, 9-9 and 9-10 in the "*Second Semi-Annual 2010, 2010 Annual Monitoring Report*" demonstrate decreasing VOC concentrations over time at downgradient wells MW-10, -3A and -3B respectively.

Landfill Gas and Leachate Extraction System

43. The Discharger's January 1995 Closure Plan recommends that an active landfill gas extraction system be installed in response to the release of volatile organic vapors documented in the March 1987 SWAT report. In the 5 March 2002 amended report of waste discharge, the Discharger presented the design for a landfill gas extraction system as a corrective action measure associated with the detected release of volatile organic vapors in MW1, MW10 and MW11.
44. Eight dual leachate/landfill gas extraction wells and three gas extraction wells were placed into service on 1 August 2003 within the Phase I Unit. An additional thirteen gas extraction wells were installed in the fall of 2005 at the Phase II/III Units. Extracted gas reports to a flare station for disposal, while leachate and gas condensate reports to the Class II Surface Impoundment. Additional leachate/landfill gas extraction wells may be

required in the future as part of the ongoing efforts to control landfill gas. The WDRs requires a report to evaluate the lateral and vertical extent of the gas migration and proposals of additional actions as necessary.

Status of Corrective Actions

45. VOC concentration trends are stable or downward in the extraction trench (L-1) and in monitoring wells downgradient of the extraction trench (MW-10, -3A and -3B). VOC concentration trends are generally upward in monitoring wells side gradient to the Phase I WMU (MW-1, -11 and -13). Those lysimeters that produce sufficient water for analysis (VZ-4, -5, and -10) have elevated VOC concentrations and gas monitoring points often contain methane.
46. The groundwater monitoring data indicates that the extraction trench is successful at controlling offsite migration of impacted groundwater from the Phase I Unit. Total VOC concentrations in monitoring wells downgradient of the extraction trench, MW-3A, -3B and -10 are 1.0 ug/L, 3.06 ug/L and 0.17 ug/L respectively; and total VOCs in monitoring wells MW-11 and -13 directly upgradient of the trench are 52.68 ug/L and 11.49 ug/L respectively.
47. However, efforts to control landfill gas have not been entirely successful. Total VOC concentrations in sidegradient groundwater monitoring wells MW-1, -11 and -13 (27.13 ug/L, 52.66 ug/L and 11.49 ug/L respectively); and total VOC concentrations in soil pore water at VZ-4, -5 and -10 (77.07 ug/L, 123.19 ug/L and 144.47 ug/L respectively) suggest that escaping landfill gas is not completely controlled and impacts groundwater. Efforts to control landfill gas are ongoing.
48. On 11 January 2011, the Discharger notified Water Board staff that after a series of rain storms, a pickup truck got stuck on the saturated Phase II/III WMUs soil cover. Successive efforts to recover the truck caused extensive tire ruts in the cover's vegetative layer to a depth of two feet. The ruts may have damaged the integrity of the HDPE low permeable layer. Actions that damage the cover, including driving on the cover when it is saturated, are a violation of WDRs Order R5-2003-0078 (the Order in force at the time of this violation). The truck will be removed; the low permeable layer tested and repaired if necessary; and vegetation layer repaired when the cover surface is sufficiently dry to allow repairs without further damage to the cover. The WDRs require revision to the Post-Closure Maintenance Plan for this facility to help prevent future damages to the cover as describe above.

CLOSURE, POST-CLOSURE MAINTENANCE, AND FINANCIAL ASSURANCE

49. Active waste disposal at Phases II and III was completed in 2004. However, the

Discharger's attempt to close the units in 2006 failed because construction quality assurance requirements were not followed. Time Schedule Order No. R5-2006-0901 was adopted by the Executive Officer on 2 May 2006 requiring completion by specified dates of several tasks necessary for final closure of Landfill Phases II and III.

50. A Corrective Closure Plan was submitted in February 2009, corrective closure construction was completed in October 2009 and the Construction Quality Assurance Report was submitted in February 2010. The solid waste containment units at Buena Vista Landfill, Phases I, II and III have been closed in compliance with WDRs Order No. R5-2003-0078 and Time Schedule Order No. R5-2006-0901.
51. The RWD/JTD submitted by the Discharger contains a post-closure maintenance plan for the landfill. The post closure maintenance plan includes information required by Title 27 CCR Section 21769(b) and a lump sum estimate of the cost of carrying out all actions necessary for post-closure maintenance and to carry out the first thirty years of post-closure maintenance. The total post-closure maintenance cost estimate is \$6,503,501. The Regional Water Board hereby approves this cost estimate. This Order requires that the Discharger maintain financial assurance with the California Department of Resources Recycling and Recovery (CalRecycle) in at least the amount of this cost estimate.
52. The Discharger has also submitted a cost estimate for corrective action for all known or reasonably foreseeable releases as required by Title 27 Section 22221. The amount of the approved cost estimate is \$576,205. This Order requires that the Discharger maintain financial assurance with the CalRecycle in at least the amount of this cost estimate.

CEQA AND OTHER CONSIDERATIONS

53. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14 CCR, Section 15301.
54. 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 Chapters 1 through 7, Subdivision 1, Division 2, Title 27, effective 18 July 1997, and subsequent revisions;
 - c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and

- d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993, and revised on 21 July 2005.

55. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or 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 having discharged or 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 regional 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."
56. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. ____" 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.

PROCEDURAL REQUIREMENTS

57. 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.
58. The Regional Water 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.
59. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
60. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.waterboards.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, Waste Discharge Requirements Order No. R5-2003-0078 is rescinded, and that Amador County, its agents, successors, and assigns, 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. PROHIBITIONS

1. The discharge of any solid waste is prohibited.
2. The discharge of any liquid 'hazardous waste' is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23, California Code of Regulations, Section 2510 et seq.
3. The discharge of liquid designated wastes outside of the Class II Surface Impoundment or portions of the Surface Impoundment specifically designed for their containment is prohibited.
4. The discharge of waste to a closed Unit is prohibited.
5. The discharge of waste constituents to the unsaturated zone or to groundwater is prohibited.
6. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
7. The discharge of waste within 50 feet of surface waters is prohibited.
8. The discharge of waste to a closed Unit is prohibited.
9. The discharge of wastes is prohibited, which have the potential to reduce or impair the integrity of the containment structures or which, if commingled with other wastes in the unit that could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
 - a. Require a higher level of containment other than provided by the unit,
 - b. Are "restricted hazardous wastes", or
 - c. Impair the integrity of containment structures is prohibited.

B. DISCHARGE SPECIFICATIONS

1. Wastes shall only be discharged into, and shall be confined to, the WMUs specifically designed for their containment.
2. All wells within 500 feet of the unit shall have sanitary seals or shall be properly abandoned. A record of the sealing and/or abandonment of such wells shall be sent to the Board and to the State Department of Water Resources.

C. FACILITY SPECIFICATIONS

1. The Discharger shall maintain the structural integrity and effectiveness of all containment structures and maintain the final covers as necessary to correct the effects of erosion, grass fires, settlement or other adverse factors.
2. The Discharger shall not operate equipment that likely will damage the landfill cover under existing conditions. For example, vehicles shall not be driven on the cover during muddy conditions since this may create ruts or other depressions that collect and hold storm water and violate post closure maintenance requirements.
3. The Discharger shall maintain and operate the leachate collection and removal systems (LCRS) for the Phase II and III WMUs.
4. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order. If the Discharger is unable to remove and relocate the waste, the Discharger shall submit a report to the Regional Water Board explaining how the discharge occurred, why the waste cannot be removed, and any updates to the waste acceptance program necessary to prevent re-occurrence.
5. The Discharger shall immediately notify the Regional Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
6. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and construction.
7. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
8. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance

conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.

9. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
10. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ or subsequent order, or retain all storm water on-site.

Corrective Action

11. The Discharger shall maintain and operate the Corrective Action systems including the Phase I, II, and III WMUs covers, the groundwater extraction trench and the landfill gas/leachate collection system as long as necessary to control and remediate VOC releases and comply with applicable regulations.
12. The Discharger shall maintain and operate the groundwater extraction trench to capture and remove impacted groundwater from the Phase I WMU; and to act as a hydraulic barrier.
13. The Discharger shall maintain and operate the dual leachate/landfill gas extraction system to control landfill gas and leachate and prevent VOC impacts to groundwater.
14. The Discharger shall maintain the Phase I, II and III landfill caps to protect the integrity of the caps and to prevent storm water from infiltrating into the WMUs.

Class II Surface Impoundment

15. Only the nonhazardous liquid wastes described in Finding 16 shall be discharged to the Class II Surface Impoundment.
16. For the Class II surface Impoundment and related containment structures shall be maintained to prevent, to the greatest extent possible, inundation, erosion, slope failure, washout, and overtopping under 1,000-year, 24-hour precipitation conditions, and shall be designed to contain the 100-year wet season precipitation without using the required 2 feet of freeboard.
17. Waste shall not be placed in the surface impoundment that would affect the physical and chemical properties of the liner to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the surface impoundments.

18. Waste shall not be placed in the surface impoundment that would affect the physical and chemical properties of the LCRS to ensure the required transmission of leachate over the life of the WMUs and the post-closure maintenance period.
19. LCRSs shall be maintained to collect twice the anticipated daily volume of leachate generated by each surface impoundment and to prevent the buildup of hydraulic head on the underlying liner at any time. The depth of the fluid in any LCRS sump shall be kept at the minimum needed for safe pump operation.
20. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overfilling.
21. The surface impoundment shall be maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the impoundments and by wave action at the water line.
22. Leachate removed from a surface impoundment's primary LCRS shall be discharged to the impoundment from which it originated.
23. All collected leachate from Phase II and III WMUs shall be discharged directly to the Class II Surface Impoundment or it can only be returned to the Unit(s) from which it came.
24. Any collected landfill gas condensate shall only be discharged directly to the Class II Surface Impoundment.
25. The Discharger shall maintain the liquid level in the Class II surface impoundment such that from 15 October to 15 April there is no less than 30-inches of freeboard, and from 15 April to 15 October the Class II surface impoundment may maintain no less than 24-inches of freeboard.
26. Leachate generation by a surface impoundment to the primary LCRS shall not exceed design requirements. If leachate generation exceeds this value, then the Discharger shall immediately cease the discharge of waste, excluding leachate, to the impoundment and shall notify the Board in writing within seven days. Notification shall include a timetable for remedial action to repair the upper liner to the impoundment or other action necessary to reduce leachate production.
27. If leachate is detected in the vadose zone monitoring system of the Class II surface impoundment indicating a leak in the containment structures the Discharger shall:
 - a. Immediately cease discharge of waste, excluding leachate and extracted groundwater to the surface impoundment until the leaks can be found and repaired;

- b. Report to the RWQCB that the containment structures have failed within 72 hours;
 - c. Submit written notification of the release to the RWQCB within seven days, the notification should include a time schedule to repair the containment structures; and
 - d. Discharge of wastes to the surface impoundment will not resume until the RWQCB has determined that repairs to the liners are complete and there is no further threat to water quality.
28. Leachate generation by a waste containment unit LCRS shall not exceed 85% of the design capacity of (a) the LCRS, or (b) the sump pump. If leachate generation exceeds this value and/or if the depth of the fluid in an LCRS exceeds the minimum needed for safe pump operation, then the Discharger shall immediately cease the discharge of waste, excluding leachate, to the waste management unit and shall notify the Board in writing within **seven days**. Notification shall include a timetable for a remedial action to repair the containment structures or other action necessary to reduce leachate production.
29. Sediment or solids that accumulate in the Class II surface impoundment shall be removed when necessary to maintain the designed storage capacity. Sludge and solids removal shall be accomplished in a manner that ensures the continued integrity of the liner and leachate collection system in accordance with the facility's operations plan. Prior to disposal of these solids, sufficient samples shall be taken for their characterization and classification pursuant to Title 27. Central Valley Water Board staff shall be notified at least 30 days prior to removal of sediment and solids from the Class II surface impoundment.
30. Following sediment/solids removal from the Class II surface impoundment, the liner system shall be inspected for damage within 30 days and any damage shall be repaired within 60 days prior to the discharge of additional wastewater. A report shall be submitted to the Central Valley Water Board within 30 days of completion of the liner inspection or repair.

D. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. ____.
2. The Discharger shall provide Regional Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum 48 hour notification prior to the

collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.

3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. _____, and the Standard Provisions and Reporting Requirements, dated April 2000 (attached).
4. The Water Quality Protection Standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8260 and 8270). The repeated detection of one or more non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells is evidence of a release from the Unit.
5. Intrawell concentration limits for selected inorganic constituents are listed in section B.3. of Monitoring and Reporting Program No._____. The concentration limit for any organic constituents is non-detect.
6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No._____ and Title 27 CCR Section 20415(e).
7. The Discharger shall maintain and follow the approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
 - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. Sample preservation information and shipment procedures;
 - c. Sample analytical methods and procedures;
 - d. Sample quality assurance/quality control (QA/QC) procedures; and
 - e. Chain of Custody control.
8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and

Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.

9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval prior to use.
10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
11. **"Trace" results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the

results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

15. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
16. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".
17. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval.
18. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval. Upon receiving written approval, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient

sample shall be reported and flagged for easy reference by Regional Water Board staff.

19. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:
- a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if **either**:
 - 1) The data contains two or more analytes that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or
 - 2) The data contains one or more analyte that equals or exceeds its PQL.
 - b. **Discrete Retest** [Title 27 CCR Section 20415(e)(8)(E)]:
 - 1) In the event that the Discharger concludes (pursuant to paragraph 20.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Regional Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.
 - 2) For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:
 - a) **Immediately** notify the Regional Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and
 - b) Comply with ¶20, below if any constituent or constituents were verified to be present.
 - 3) Any analyte that is confirmed per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

20. If the Discharger determines that there is measurably significant evidence of a release from the Unit at any monitoring point, the Discharger shall **immediately** implement the requirements of **XI. Response To A Release, C. Release Has Been Verified**, contained in the Standard Provisions and Reporting Requirements.

E. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility 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 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. ____, which is incorporated into and made part of this Order.
4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (Title 27 CCR Section 20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.
5. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Regional Water Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
6. All reports and transmittal letters shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if;

- 1) The authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - 3) The written authorization is submitted to the Regional Water Board.
- e. Any person signing a document under this Section shall make the following certification:
- “I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”
7. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
 8. An annual water balance shall be developed to maintain and prevent, to the greatest extent possible, inundation, erosion, slope failure, washout, and overtopping under 1,000-year, 24-hour precipitation conditions (See Finding 12), and shall be designed to contain the 100-year wet season precipitation (See Finding 12) without using the required 30-inches of freeboard from 15 October to 15 April or 24-inches of freeboard from 15 April to 15 October.
 9. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
 10. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger’s violations of the Order.

11. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Water Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.5. and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Water Board.
12. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in the amount of the approved cost estimate in Finding 51, adjusted for inflation annually. All reports to CalRecycle regarding financial assurances for closure shall be copied to the Central Valley Water Board by **1 June** of each year.
13. The Discharger shall obtain and maintain assurances of financial responsibility for post-closure maintenance costs in the amount of the approved cost estimates in Finding 50, adjusted for inflation annually. All reports to CalRecycle regarding financial assurances for post-closure maintenance shall be copied to the Central Valley Water Board by **1 June** of each year.
14. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:
 - a. By **1 September 2011** submit a revised O&M Plan that establishes cover maintenance protocols for the rainy season, such as what type of equipment will be allowed on the cover and how sampling and maintenance will be done.
 - b. By **1 January 2012** submit a supplemental plan to meet the standards in Title 27 Section 20430 to remediate the release from the landfill unit and to meet the water quality protections standards established for this facility at the point of compliance. This plan shall have a date when the Corrective Action measures will complete the remediation and meet the water quality protections standards. The plan at a minimum shall:
 - 1) Evaluate how to prevent leachate from the landfill from entering groundwater and determine if the current Phase 1 Unit corrective action program is preventing groundwater from entering waste. If either or both conditions are

occurring, propose additional corrective action measures to protect and improve groundwater quality.

- 2) Evaluate whether soil gas is contained within the landfill units and not contributing to groundwater degradation. If soil gas is causing groundwater impacts, provide the necessary steps to mitigate existing gas impacts and prevent future gas impacts to groundwater (See finding 47).
- 3) Provide a date when Corrective Action Program measures will bring the concentrations of all COCs to levels below their respective concentration limit throughout the entire zone affected by the release and the landfill returns to a Detection Monitoring Program.

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

RDA: 06/28/2011