

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-0123

WASTE DISCHARGE REQUIREMENTS
FOR
H.M. HOLLOWAY, INC
H.M. HOLLOWAY SURFACE MINE LANDFILL PROJECT
KERN COUNTY

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

1. H.M. Holloway, Incorporated (hereafter Discharger), a California corporation, owns and operates an open-pit gypsum mine located on Holloway Road in Lost Hills. The mine property covers 3,200 acres in portions of Sections 11, 14, 23, 24, and 25, of T26S, R20E, and a portion of Section 30, of T26S, R21E, MDB&M as shown on Attachment A, which is incorporated herein and made part of this order.
2. A 301.36-acre portion of the mine property is designated as the waste management facility (facility). The facility contains four depleted mine pit areas, covering 172.34 acres, that have been designated for waste disposal, as shown on Attachment B, which is incorporated herein and made part of this Order. The facility also includes 129.02 acres of non-disposal area. The facility is comprised of Assessor's Parcel Numbers 057-240-17, 057-240-19, 057-220-16, and 057-240-29.
3. The four depleted mine pit areas designated as waste management units (Units) are Pit E (45.82 acres), Pit F (19.95 acres), Pit G (70.85 acres), and Pit F and G connection area (36.06 acres). The average depth of the Units is 50 feet below ground surface. The depleted gypsum mine pits are being reclaimed in accordance with the Surface Mine and Reclamation Act by discharging up to 2,000 tons per day of industrial waste consisting of fly ash, lime cake, sulfur, treated automobile shredder waste (predominately nonmetallic, solid material including plastic, broken glass, rubber, foam, soil, and fabric), concrete and cement construction rubble, asphalt products (e.g., roofing shingles, reclaimed road surface materials, etc.), shredded automobile tires, shredded plastic, and occasional intermittent thin layers of dewatered bentonite based water-well drilling mud.
4. On 25 April 1997 the Central Valley Water Board adopted Waste Discharge Requirements Order 97-078, in which the facility was designated as an unclassified waste disposal site for the discharge of specific industrial wastes pursuant to Title 23, California Code of Regulations, Section 2510 et seq. (Chapter 15).

5. This Order revises the existing Waste Discharge Requirements to classify the depleted mine pits, based on current and proposed waste streams, as Class III landfills pursuant to Title 27, California Code of Regulations, Section 20005 et seq. (hereafter Title 27). This Order also revises the list of wastes allowed for discharge to include spent sandblast media, and dewatered Class A and Class B municipal biosolids; and to exclude sulfur, shredded plastic, concrete and cement construction rubble, asphalt products, shredded automobile tires, and drilling mud.

SITE DESCRIPTION

6. The facility is along the western edge of the San Joaquin Valley, adjacent to the Lost Hills Oil field in an area with minimal human or livestock habitation, or residential, commercial or agricultural development.
7. The Units are underlain by a thick sequence (maximum depth of investigation 60 feet) of consolidated soils dominated by silts and low-to-medium plasticity clays. Between 15 and 50% montmorillinite clay was identified by X-ray diffraction in soil samples collected from the upper 25 feet of soil beneath Pit E.
8. The measured hydraulic conductivity of the native soils underlying the Units ranges between 1×10^{-6} and 1×10^{-10} centimeters per second.
9. The facility is not located within a fault hazard zone. The San Andreas Fault Zone is approximately 22 miles to the west. The maximum probable earthquake is a magnitude 8.25 on the Richter scale. Peak horizontal ground acceleration would be 0.234g.
10. Land within 1,000 feet of the facility is used for natural grazing, petroleum production, and solid waste disposal.
11. The average annual precipitation is 5.95 inches as measured by the Kern County Water Agency at Lost Hills. The annual average reference evapotranspiration from a grass surface is 67.59 inches per year as measured at Station Wasco 7E by the State of California Department of Water Resources.
12. The 100-year, 24-hour precipitation event is estimated to be 2.5 inches, based on the *Kern County Hydrology Manual, 1992*.
13. No portion of the facility is within a 100-year flood zone. A six- to seven-foot high continuous earthen berm has been constructed around the perimeter of each Unit to prevent surface water entry.
14. There are no municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the facility. Groundwater monitoring wells are located within one mile to the south. Petroleum production wells exist approximately one-half mile to

the east. No surface springs or other sources of groundwater supply have been observed.

SURFACE AND GROUND WATER CONDITIONS

15. The *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition, revised January 2004 (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
16. Surface drainage is toward an unnamed creek in the Lost Hills in the Antelope Plain Hydrologic Area (558.60) of the Tulare Lake Basin. Surface waters in the Antelope Plain Hydrologic Area are designated as Valley Floor Waters in the Basin Plan.
17. The Units are on the floor of the southern San Joaquin Valley. The designated beneficial uses of the Valley Floor Waters, as specified in the Basin Plan, are agricultural supply; industrial service and process supply; water contact and non-contact water recreation; warm freshwater and wildlife habitat; preservation of rare, threatened, and endangered species; and groundwater recharge.
18. The facility is in the Kern County Basin Hydrologic Unit, Detailed Analysis Unit (DAU) 259. The designated beneficial uses of the groundwater, as specified in the Basin Plan for DAU 259, are municipal and domestic water supply, agricultural supply, and industrial service supply.
19. Groundwater occurs in thin, laterally discontinuous and vertically stratified sand lenses found at depths ranging between 60 and 120 feet below the ground surface, or between 20 and 38 feet below the base of the Units. Groundwater elevations range from 323 feet mean sea level (MSL) to 348 feet MSL. The groundwater is unconfined.
20. Monitoring data indicate background groundwater quality has an electrical conductivity (EC) ranging between 5,300 and 10,500 micromhos/cm, and concentrations of total dissolved solids (TDS) ranging from 4,900 to 7,460 milligrams per liter (mg/l) with an average concentration of 6,015 mg/l. Therefore, the first encountered groundwater exceeds the recommended secondary maximum contaminant level (MCL) of TDS for drinking water which is 500 mg/l.
21. The first encountered groundwater exceeds the primary MCLs for drinking water for selenium and nitrate (as nitrate) of 50 micrograms per liter ($\mu\text{g/l}$) and 45 mg/l respectively. Selenium ranged from 57 to 219 $\mu\text{g/l}$ and nitrate ranged from 14 to 598 mg/l. Secondary drinking water standards were also exceeded for manganese (50 $\mu\text{g/l}$), chloride (250 mg/l), and sulfate (250 mg/l).

22. First encountered groundwater also exceeds several agricultural water quality limits, including those for chloride, molybdenum, selenium, EC, and TDS.
23. Due to the nature of the occurrence of the groundwater in discreet sandy-lenses (see Finding No. 19), there is no discernable direction of groundwater flow, groundwater gradient, or groundwater velocity.
24. Waste constituents have not been detected above background concentrations in groundwater since monitoring began in 1995.

WASTE CLASSIFICATION AND UNIT CLASSIFICATION

25. The Discharger disposes of nonhazardous solid wastes (see Finding Nos. 3 and 5) as defined in Section 20164 of Title 27.
26. Auto shredder waste typically contains concentrations of heavy metals and polychlorinated biphenyls (PCBs) in excess of total and soluble threshold limit values established for classification as hazardous waste in accordance with Title 22, California Code of Regulations, Section 66001 et seq. (Title 22). However, auto shredder waste characterized as hazardous, and whose generators have received approval from the Department of Toxic Substances Control in accordance with 66260.200(f) of Title 22, can be managed as a nonhazardous waste.
27. Waste determined by the Department of Toxic Substances Control for management as nonhazardous waste in accordance with 66260.200(f) of Title 22, is classified as 'designated' waste in accordance with Section 13173(a) of the California Water Code.
28. Section 20200(a)(1) of Title 27 allows the discharge of 'designated' waste to waste management units other than Class II units, provided that the discharger establishes to the satisfaction of the regional water board, that the waste presents a lower risk of water quality degradation than indicated by its classification.
29. During separation of metallic materials from automobile shredder waste, the non-metallic portion undergoes a treatment process that stabilizes any heavy metals that are still present and results in a less reactive waste.
30. Treated auto shredder waste accepted for disposal has consistently contained concentrations of soluble PCBs, soluble metals, and volatile organic compounds that, based upon the site characteristics (see Finding Nos. 7, 8, 11, 20, 21, and 22), present a lower risk of water quality degradation at this site than indicated by its classification as a 'designated' waste.
31. The site characteristics where the Units are located (see Finding No. 8) meet the siting criteria for a new Class III landfill contained in Section 20260(a) and (b)(1) of

Title 27. As such, the site is suitable for operating new Units or lateral expansions of existing Units for the discharge and containment of the wastes described in Finding No. 15, without the construction of additional waste containment features contained in Section 20260(b)(2) of Title 27 and State Water Resources Control Board Resolution No. 93-62.

DETECTION MONITORING PROGRAM

32. The groundwater detection monitoring system, initiated in the second quarter of 1995, consists of 12 monitoring wells. Three wells monitor Pit E, three wells monitor Pit F, four wells monitor Pit G, and two wells monitor the Pits F and G connection area.
33. The Discharger's detection monitoring program for groundwater satisfies the requirements contained in Title 27.
34. The Discharger was not required by Chapter 15 to conduct unsaturated zone monitoring since the Units were unclassified.
35. Pit G, when built for waste disposal, will include a leachate collection and removal system. The vadose zone will be monitored by the inclusion of a pan lysimeter beneath the leachate collection sump of the leachate collection and removal system. The Discharger adequately demonstrated that it is impractical to retrofit Pits E and F to monitor the unsaturated zone.
36. The Discharger's proposed detection monitoring program for the unsaturated zone will satisfy the requirements contained in Title 27.
37. There is no surface water at or adjacent to the facility for the Discharger to monitor.
38. Volatile organic compounds (VOCs) are often detected in a release from a landfill. 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.
39. Because the Units were previously unclassified, a water quality protection standard (WQPS) has not been established pursuant to Title 27. This Order requires the Discharger to submit a WQPS report that reflects recent and historical monitoring data and monitoring points. (see Detection Monitoring Specification E.4).
40. 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.

41. The Central Valley 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 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.
42. 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.
43. 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.

DESIGN OF WASTE MANAGEMENT UNIT

44. Section 20080(b) of Title 27 allows the Central Valley Water Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Section 20080(c)(1) or (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome or will cost substantially more than an alternative which will meet the criteria contained in Section 20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative liner system is consistent with the performance goal in accordance with Sections 20240, 20260, and 20310 of Title 27, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Section 20080(b)(2) of Title 27.
45. Section 13360(a)(1) of the California Water Code 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.

46. The Discharger proposes to construct a waste containment system which will be designed, constructed, and operated to prevent degradation of waters of the state during disposal operations, closure, and the post-closure maintenance period in accordance with the criteria set forth in Title 27 for a Class III waste management unit.
47. The waste containment system consists of, from the bottom up:
 - a. Naturally occurring geologic materials prepared and conditioned to prevent the migration of waste constituents to groundwater and to convey leachate to the leachate collection sump.
 - b. A leachate collection and removal system drainage layer consisting of either appropriate selected geologic materials or a geonet/geocushion.
 - c. An operations layer designed to protect the leachate collection and removal system.
48. The leachate collection and removal system will be constructed to convey leachate from Pit G to a sump on the west side of the Unit. The leachate collection pump will detect the level of leachate in the sump and remove leachate to an aboveground storage tank when the leachate reaches a designated level to ensure adequate freeboard is maintained in the sump at all times. The minimum capacity of leachate collection and removal system will meet or exceed twice the maximum anticipated daily volume of leachate.
49. The Discharger demonstrated that site characteristics alone, without a liner, meet the performance goal contained in Section 20310 of Title 27. The demonstration utilized a mathematical model to predict fate and transport of waste constituents discharged to the Units. Results of the model and past performance of the existing Units demonstrate that the proposed Unit design will ensure no impairment of beneficial uses of surface water or groundwater beneath or adjacent to the landfill in accordance with Section 20260(b)(1) of Title 27.
50. The unsaturated zone will be monitored by the construction of a pan lysimeter installed beneath the leachate collection pumps of the leachate collection and removal system. If leachate is produced, it will collect in the leachate collection sumps until a sufficient depth of leachate is attained to operate the collection pumps efficiently. Therefore, the most likely location that leachate could penetrate the surrounding geologic materials is beneath the collection sumps.

CEQA AND OTHER CONSIDERATIONS

51. The County of Kern, Board of Supervisors, certified the final environmental impact report for the project described in Finding No. 2 on 1 April 2008. The County of Kern filed a Notice of Determination on 14 April 2008 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). The Central Valley Water Board considered the environmental impact report and incorporated mitigation measures from the environmental impact report into these waste discharge requirements designed to prevent potentially significant impacts to design facilities and to water quality.
52. This order implements:
- a. *The Water Quality Control Plan for the Tulare Lake Basin*, Second Edition, revised January 2004;
 - b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions.
53. 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."
54. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2010-0123" 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.
55. This order requires full containment of wastes and does not permit degradation of surface water or groundwater. Further antidegradation analysis is therefore not needed. The discharge is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16.

PROCEDURAL REQUIREMENTS

56. The Central Valley 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.
57. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
58. Any person affected by this action of the Central Valley 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/laws_regulations/index.shtml and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 97-078 is rescinded, and that H.M. Holloway, Inc., 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 'hazardous waste' at this facility is prohibited. The discharge of 'designated waste', except for treated auto shredder waste, at this facility is prohibited. For the purposes of this Order the terms 'hazardous waste' is as defined in Title 23, California Code of Regulations, Section 2510 et seq., and 'designated waste' is as defined in Section 20210 of Title 27.
2. The discharge of wastes outside of a Unit or portions of a Unit specifically designed for their containment is prohibited.
3. The discharge of waste to a closed Unit is prohibited.
4. The discharge of solid waste, liquid waste, leachate, or waste constituents to surface waters, surface water drainage courses, or groundwater is prohibited.

B. DISCHARGE SPECIFICATIONS

1. Wastes shall only be discharged into, and shall be confined to, a Unit specifically designed for their containment.
2. The discharge shall remain within the designated disposal areas at all times.
3. Wastes discharged to a Unit shall be limited to the following: ash, lime cake, treated automobile shredder waste (predominately nonmetallic, solid material including plastic, broken glass, rubber, foam, soil, and fabric), dewatered Class A and Class B municipal biosolids, and spent sandblast media.
4. Dewatered Class A and Class B municipal biosolids shall only be discharged to a Unit which contains a leachate collection and removal system.

C. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
2. The Discharger shall immediately notify the Central Valley 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 precipitation and drainage control structures.
3. If monitoring reveals substantial or progressive increases of leachate generation above the design leachate flow volume of a Unit or portion of a Unit, such that the depth of fluid on any portion of the leachate collection and removal system (excluding the leachate removal pump sump) exceeds 30 cm, the Discharger shall immediately notify the Central Valley Water Board in writing within seven days. The notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.
4. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and construction.
5. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

6. 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.
7. The Units shall be designed, constructed and operated to prevent inundation or washout due to flooding events with a 100-year return period.
8. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
9. 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 retain all storm water on-site, until closure of the landfill is complete and approved.
10. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.

D. CONSTRUCTION SPECIFICATIONS

1. The Discharger shall submit for Executive Officer review and approval either prior to, or concurrent with, submission of the Construction Quality Assurance Plan as per Construction Specification D.2.a., below, a Design Report for each expansion cell of the proposed Unit that includes detailed plans, specifications, and descriptions for the liner components and leachate collection and removal system components. The Design Report shall incorporate design rationale, with supporting calculations, for all components of the proposed containment system, and shall describe design details that allow for annual integrity testing of the leachate collection and removal system to demonstrate whether the leachate collection and removal system was designed and is operating to function without clogging, pursuant to Section 20340(d) of Title 27.
2. The Discharger shall submit for Executive Officer review and approval **at least 90 days** prior to construction, design plans and specifications for a Unit that includes the following:

- a. A Construction Quality Assurance Plan meeting the requirements of Section 20324 of Title 27; and
 - b. A geotechnical evaluation of the area soils, evaluating their use as the base of the waste containment system; and
 - c. An unsaturated zone monitoring system, which is demonstrated to remain effective throughout the active life, closure, and post-closure maintenance periods of the Unit in accordance with Section 20415(d) of Title 27.
3. The waste containment system of a Unit shall be constructed in accordance with the following design, in ascending order, that has been demonstrated by the Discharger to meet the performance standards of Title 27:
- a. A subgrade prepared in an appropriate manner using accepted engineering and construction methods that provides a surface that is smooth and free from rocks, sticks, and other debris that could damage or otherwise limit the performance of the leachate collection and removal system.
 - b. A leachate collection and removal system (if biosolids will be discharged to the Unit).
 - c. A nonwoven cushion geotextile of appropriate weight.
 - d. An operations layer of appropriate material to allow drainage of leachate to and through the leachate collection and removal system and provide a working surface protective of the leachate collection and removal system.
4. The Discharger may propose changes to the waste 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 waste containment system results in the protection of water quality equal to or greater than the design prescribed by this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation and approval by the Central Valley Water Board.
5. The leachate collection and removal system shall be designed and operated so that there is no buildup of hydraulic head on the base or sideslopes of the waste containment system.

6. Materials used to construct a leachate collection and removal system shall have appropriate physical and chemical properties to ensure the required transmission of leachate over the life of the Unit and the post-closure maintenance period.
7. Construction shall proceed only after all applicable construction quality assurance plans have been approved by Executive Officer.
8. Following the completion of construction of any portion of a Unit, and prior to discharge to the newly constructed Unit, the final documentation required in Section 20324(d)(1)(C) of Title 27 shall be submitted to the Executive Officer for review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.
9. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during the construction of a waste containment system.
10. Precipitation and drainage control systems shall be designed, constructed and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
11. Closure shall not proceed in the absence of closure waste discharge requirements.

E. MONITORING SPECIFICATIONS

1. The Discharger shall comply with Monitoring and Reporting Program No. R5-2010-0123, which is incorporated into and made part of this Order.
2. The Discharger shall provide Central Valley Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices. At the beginning of each sampling period, in accordance with Section B. Reporting of Monitoring and Reporting Program No. R5-2010-0123, a schedule shall be submitted listing anticipated sampling dates for that reporting period.
3. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and the unsaturated zone in

accordance with Monitoring and Reporting Program No. R5-2010-0123, which is incorporated into and made part of this Order.

4. The Discharger shall establish and comply with the Water Quality Protection Standard (as defined in Section 20390 of Title 27), which is specified in Monitoring and Reporting Program No. R5-2010-0123 and the Standard Provisions and Reporting Requirements, dated April 2000. By **30 April 2011**, the Discharger shall submit a Water Quality Protection Standard that meets the requirements of Section 20390 of Title 27.
5. The Water Quality Protection Standard for 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., USEPA methods 8260 and 8270). The presence of non-naturally occurring compounds in samples from detection monitoring wells is evidence of a release from the Unit unless the Discharger can demonstrate that the Unit is not the cause pursuant to Section 20420(k)(7) of Title 27.
6. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2010-0123.
7. 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. R5-2010-0123 and Section 20415(e) of Title 27.
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 the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.
9. **By 30 April 2011**, the Discharger shall submit an updated Sample Collection and Analysis Plan. 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.

10. If methods other than USEPA-approved methods or Standard Methods are used, a detailed description of the methodology shall be submitted for review and approval by the Executive Officer prior to use.
11. The **methods of analysis and the detection limits** used shall 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 MDL shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
12. **"Trace" results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
13. **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.
14. 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.
15. The Quality Assurance/Quality Control (**QA/QC**) **data** shall be reported, along with the sample results to which they apply, including the method, equipment, and 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.

16. **Unknown chromatographic peaks** shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
17. The statistical method shall account for data below the PQL with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Section 20415(e)(7) of Title 27 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 this Order for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Section 20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, 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."
18. The Discharger may propose an alternate statistical method [to the methods listed under Section 20415(e)(8)(A-D) of Title 27] in accordance with Section 20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, 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). The analytical results involving detection of these analytes in

any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.

19. The Discharger shall use the following nonstatistical method specified in Detection Monitoring Specification E.20 for all constituents which are not amenable to the statistical tests above (i.e., less than 10% of the data from background samples that equal or exceed their respective MDL). This includes all constituents in the Monitoring Parameters and for all Constituents of Concern (COC) found in groundwater and unsaturated zone (in soil-pore liquid or gas). Each constituent at a monitoring point shall be determined to meet this criterion based on either:
 - a. The results from a single sample for that constituent, taken during that reporting period from that monitoring point; or
 - b. If more than one sample has been taken during a reporting period from a monitoring point, the results from the sample which contains the largest number of qualifying constituents shall be used.

Background for water 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 27 Section 20415(e)(8)(A-D)] in accordance with Section 20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer.

20. The nonstatistical method shall be implemented as follows:
 - a. For every compliance well, regardless of the monitoring program, the Discharger shall use this data analysis method, jointly, for all monitoring parameters and COCs that are detected in less than 10% of background samples. Any COC that triggers a discrete retest per this method shall be added to the monitoring parameter list.

Triggers — From the monitoring parameters and COC list identify each constituent in the current sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary indication [or, for a retest, provide a measurably significant indication] of a change in the nature or extent of the release, at that well, if either:

- 1) The data contains two or more qualifying monitoring parameters and/or COCs that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or

- 2) The data contains one qualifying monitoring parameter and/or COC that equals or exceeds its PQL.
- b. Discrete Retest [Title 27, 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, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the indicating compliance well.
 - 2) For any given compliance well retest sample, the Discharger shall include, in the retest analysis, only the laboratory analytical results for those constituents indicated in that well's original test. As soon as the retest data are available, the Discharger shall apply the same test [under 20.a.], to separately analyze each of the two suites of retest data at that compliance well.
 - 3) If either (or both) of the retest samples meets either (or both) of the triggers under 20.a., then the Discharger shall conclude that there is a measurably significant increase at that well for the constituent(s) indicated in the validating retest sample(s).
21. If the Executive Officer determines, after reviewing the submitted report, that the detected constituent(s) most likely originated from the Unit(s), the Discharger shall immediately implement the requirements of Section XI. Response To A Release, C. Release Has Been Verified, contained in the Standard Provisions and Reporting Requirements.

F. PROVISIONS

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Central Valley Water Board office by telephone as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within two weeks. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. The Discharger shall maintain a copy of this Order at the facility until completion of closure and make it available at all times to facility

maintenance personnel, who shall be familiar with its contents, and to regulatory agency personnel.

3. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in 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 (27 Section 20005 et seq. and 40 CFR 258 et seq.)*, dated April 2000, which is hereby incorporated into this Order.
5. 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 Central Valley Water Board.
 - e. Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all

attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

- f. Section §6700 - §6799 and §7800 - §7887 of the California Code of Regulations (Business and Professions Code), requires that all technical reports (including self-monitoring reports where analytical work and evaluations are required) be prepared by a registered professional or subordinate employee under his or her direction. If the report is prepared by the subordinate employee then the registered professional is required to sign the report indicating his or her responsibility for the report. Self monitoring reports include an interpretation of analytical data and therefore require the signature of an appropriately registered professional in accordance with the §6700 - §6799 and/or §7800 - §7887 of the California Code of Regulations, Business & Professional Code. Technical reports submitted by the Discharger without the signature of an appropriately registered professional will be incomplete and shall be rejected.
6. 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.
7. 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 closure and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
8. If the Discharger or the Central Valley Water Board determines that the corrective action program is not adequate (i.e. does not satisfy the provisions of Section 20430 of Title 27), the Discharger shall, within 90 days of making the determination, or of receiving written notification from the Central Valley Water Board of such determination, submit an amended report of waste discharge (RWD) to make appropriate changes to the program. The amended RWD shall include the following:
 - a. A discussion as to why existing corrective action measures have been ineffective or insufficient.

- b. A revised evaluation monitoring plan if necessary to further assess the nature and extent of the release.
 - c. A discussion of corrective action needs and options.
 - d. Proposed additional corrective action measures, as necessary, for:
 - 1) Source control;
 - 2) Groundwater cleanup; and/or
 - 3) Landfill gas control.
 - e. A plan to monitor the progress of corrective action measures consistent with Monitoring and Reporting Program No. R5-2010-0123.
 - f. Cost estimates for implementing additional corrective action, including monitoring.
 - g. An implementation schedule.
9. The fact that it would be 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 violation of the Order.
10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley Water Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.6 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 Central Valley Water Board.
11. The Discharger shall establish and maintain an approved cost estimate for initiating and completing corrective action for all known or foreseeable releases from the landfill.

12. The Discharger shall conduct an annual review of the financial assurance for initiating and completing corrective action, and submit a report for Executive Officer review and approval by 30 June of each year. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Central Valley Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.
13. The Discharger shall conduct an annual review of the financial assurance for closure and post-closure maintenance, and submit a report for Executive Officer review and approval by 30 June of each year. The assurances of financial responsibility shall provide that funds for closure and post-closure maintenance shall be available to the Central Valley Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.
14. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
A. Construction Plans	
Submit construction and design plans for Executive Officer review and approval. (see Construction Specification D.2)	At Least 90 Days Prior to Construction
B. Water Quality Protection Standard	
Submit a Water Quality Protection Standard that meets the requirements of Section 20390 of Title 27. (see Detection Monitoring Specification E.4)	30 April 2011

<u>Task</u>	<u>Compliance Date</u>
C. Financial Assurance Review	
1. Annual Review of Financial Assurance for initiating and completing corrective action. (see Provision F.12.)	30 June each year
2. Annual Review of Financial Assurance for closure and post-closure maintenance. (see Provision F.13.)	30 June each year

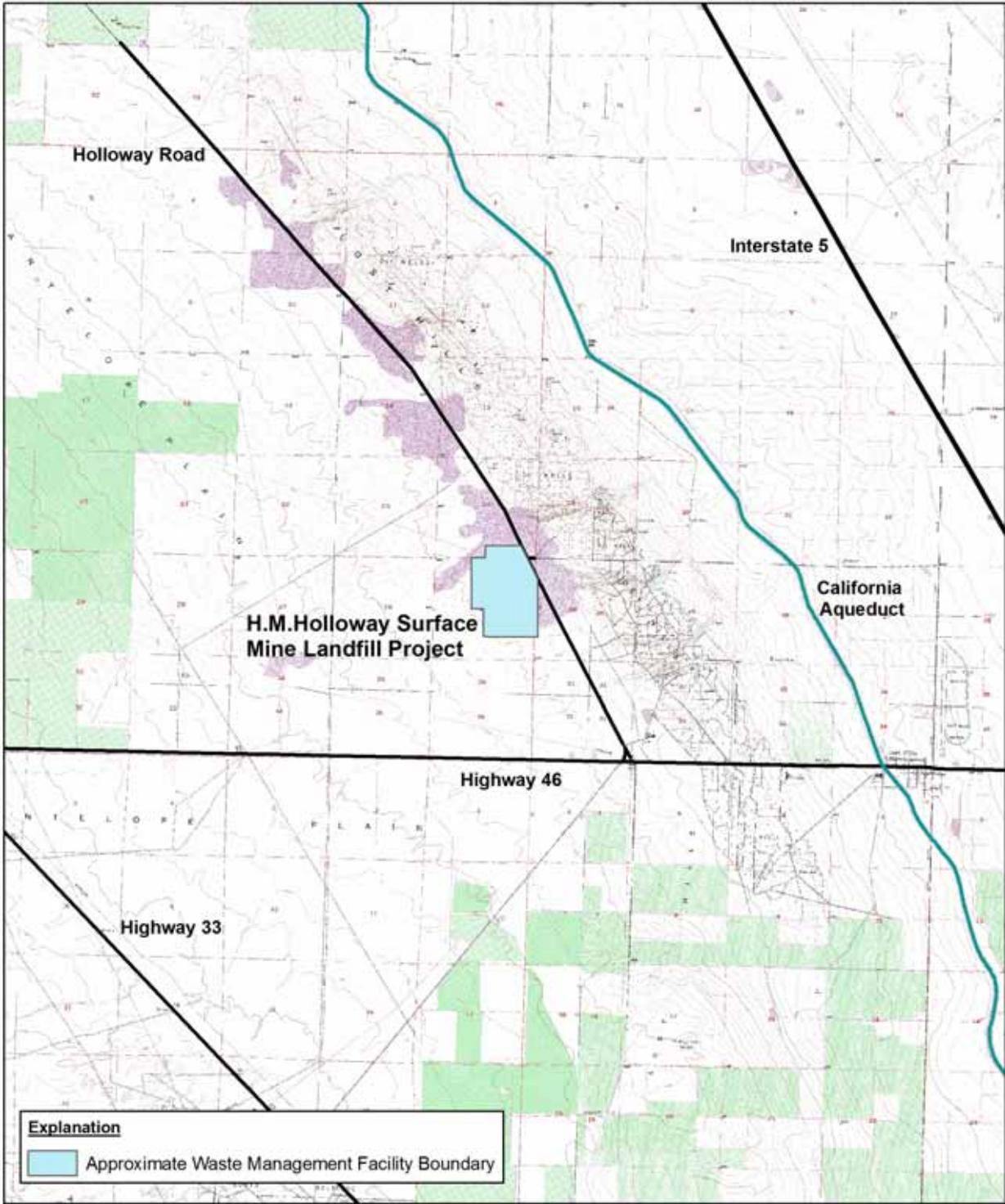
If, in the opinion of the Executive Officer, the Discharger fails to comply with the provision of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement or issue a complaint for Administrative Civil Liability.

I, PAMELA 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 10 December 2010.

Original signed by:

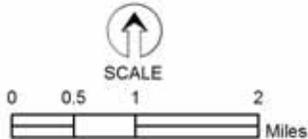
PAMELA CREEDON, Executive Officer

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Explanation
 Approximate Waste Management Facility Boundary

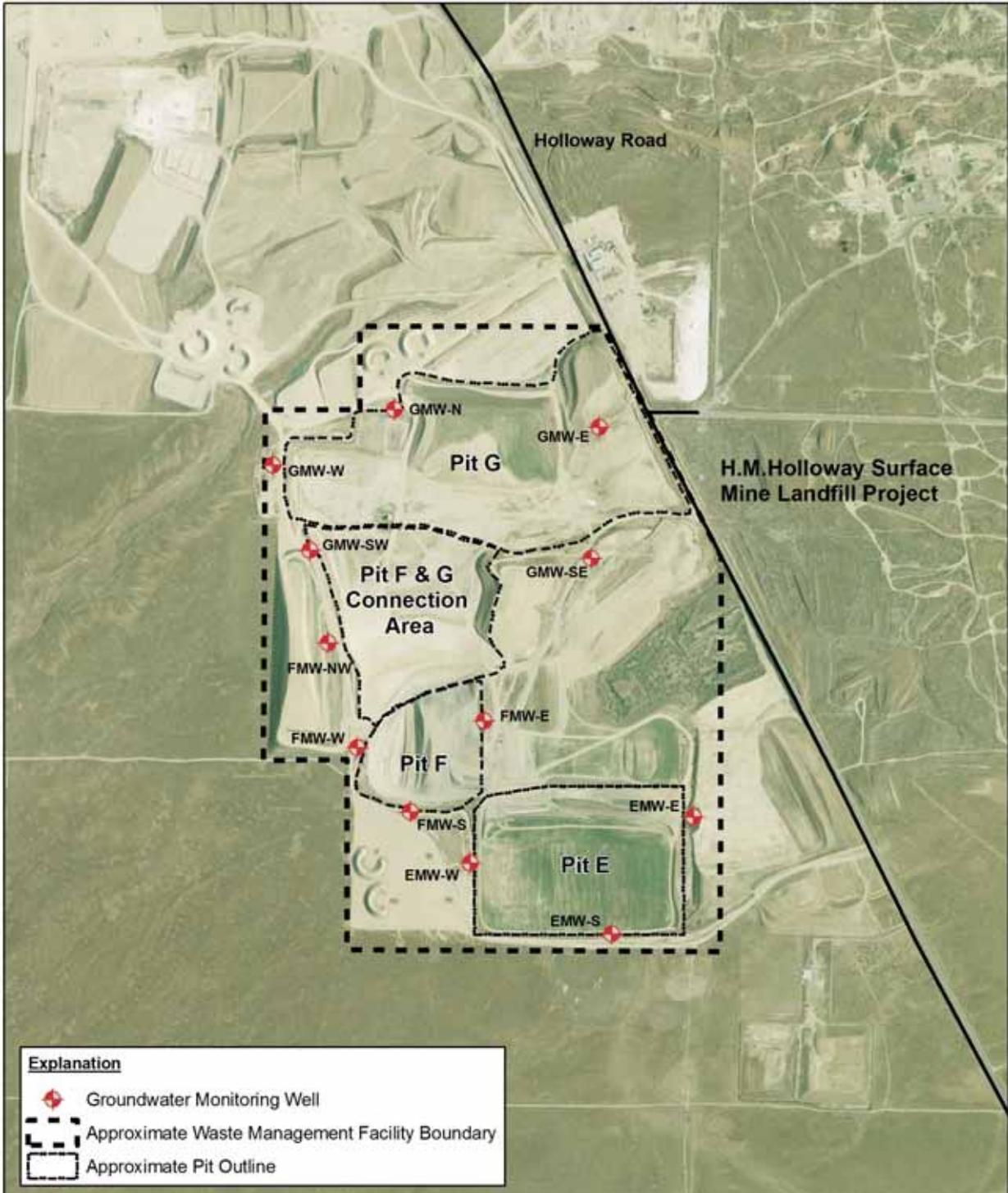
Map Source:
 Antelope Plane 7.5 Minute USGS Quadrangle
 Sections 11, 14, 23, 24, & 25 T26S R20E, MDB&M



LOCATION MAP

Order No. R5-2010-XXXX
 Waste Discharge Requirements
 For
 H.M. Holloway Inc.
 H.M. Holloway Surface Mine Landfill Project
 Kern County

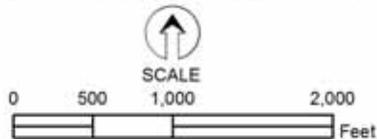
ATTACHMENT A



Explanation

- Groundwater Monitoring Well
- Approximate Waste Management Facility Boundary
- Approximate Pit Outline

Map Source:
 Antelope Plane 7.5 Minute USGS Quadrangle
 Sections 11, 14, 23, 24, & 25 T26S R20E, MDB&M



SITE MAP
 Order No. R5-2010-XXXX
 Waste Discharge Requirements
 For
 H.M. Holloway Inc.
 H.M. Holloway Surface Mine Landfill Project
 Kern County

ATTACHMENT B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2010-0123
FOR
H.M. HOLLOWAY, INC.
FOR
H.M. HOLLOWAY SURFACE MINE LANDFILL PROJECT
KERN COUNTY

The Discharger shall comply with this Monitoring and Reporting Program (MRP), with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, as ordered by Waste Discharge Requirements Order No. R5-2010-0123.

A. REQUIRED MONITORING REPORTS

1. Groundwater Monitoring (Section D.1)
2. Unsaturated Zone Monitoring (Section D.2)
3. Leachate Monitoring (Section D.3)
4. Facility Monitoring (Section D.4)
5. Annual Monitoring Summary Report (Section E.5.)
6. Response to a Release (Standard Provisions and Reporting Requirements)

B. REPORTING

H.M. Holloway, Inc. (hereafter Discharger), shall report monitoring data and information as required in this MRP and as required in Order R5-2010-0123 and the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer. Each monitoring report shall include a compliance evaluation summary as specified in E. Reporting Requirements, below.

Report Due Dates

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Central Valley Water Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Monthly	Semiannually	Last Day of Month	by Semiannual Schedule
Quarterly	Semiannually	31 March	31 July
		30 June	31 July
		30 September	31 January
		31 December	31 January
Semiannually	Semiannually	30 June	31 July
		31 December	31 January
Annually	Annually	31 December	31 January
5-Year	Every 5 years	31 December	31 January

The Discharger shall submit an **Annual Monitoring Summary Report** covering the previous monitoring year. The annual report shall contain the information specified in E. Reporting Requirements, below, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in Tables I through V for the specified monitored medium. The Discharger shall monitor all constituents of concern every five years.

a. **Monitoring Parameters**

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables I through IV for the specified monitored medium.

2. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27(e)(8); or
- b. By an alternate statistical method meeting the requirements of §20415(e)(8)(E) of Title 27.

3. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

4. Compliance Period

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

D. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, and the unsaturated zone, in accordance with Detection Monitoring Specification E.1 and E.4 of Waste Discharge Requirements, Order No. R5-2010-0123. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

All monitoring wells established for the detection monitoring program shall constitute

the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, and unsaturated zone monitoring devices, shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through V.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table V.

The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with a Detection Monitoring Program approved by the Executive Officer. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction, if possible, in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from all monitoring wells that are part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schoeller plot. Samples for

the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table IV every five years.

2. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provision of Section 20415 and 20420 of Title 27 in accordance with an approved Detection Monitoring Program. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

Unsaturated zone samples shall be collected from the monitoring device(s) of the approved unsaturated zone monitoring system. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in Table II. All monitoring parameters shall be graphed so as to show historical trends at each monitoring point. Samples for the constituents of concern specified in Table II shall be collected and analyzed in accordance with the methods listed in Table IV every five years.

Unsaturated zone monitoring reports shall be included with the corresponding semiannual groundwater monitoring and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

3. Leachate Monitoring

All leachate collection and removal system sumps shall be inspected monthly for leachate generation. Upon detection of leachate in a previously dry leachate collection and removal system, leachate shall be sampled within two days and analyzed for the constituents listed in Table III. Leachate shall then be sampled and analyzed annually during the fourth quarter thereafter, with a retest during the following second quarter if constituents are detected that have not been previously detected. Leachate samples shall be collected and analyzed for the listed constituents in accordance with the methods and frequency specified in Table III. The constituents of concern list shall include all constituents listed in Table V. The quantity of leachate pumped from each sump shall be measured and reported monthly as Leachate Flow Rate (in gallons).

Leachate which seeps to the surface from the Unit shall be sampled and analyzed for the constituents listed in Table III upon detection. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

4. Facility Monitoring

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section E.3.f., below. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events* (i.e., a storm that causes continuous runoff for at least one hour). Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste containment facilities and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs. Minor damage and subsequent repairs shall be reported in the next self-monitoring report.

E. REPORTING REQUIREMENTS

1. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the postclosure period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;

- c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
 - d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
 - e. Calculation of results; and
 - f. Results of analyses, and the MDL and PQL for each analysis.
2. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.
 3. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:
 - a. For each monitoring point and background monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;
 - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 5) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan approved by the Executive Officer.
 - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.

- c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
 - d. Laboratory statements of results of all analyses evaluating compliance with requirements.
 - e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
 - f. A summary and certification of completion of all **Standard Observations** for the Unit, and for the perimeter of the Unit. Standard observations for the closed landfill unit shall be conducted **monthly** during the wet season (1 October to 30 April) and **quarterly** during the dry season (1 May to 30 September). The Standard Observations shall include:
 - 1) For the Unit:
 - a) Evidence of ponded water at any point on the facility (show affected area on map);
 - b) Evidence of erosion and/or of day-lighted refuse.
 - 2) Along the perimeter of the Unit:
 - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
 - b) Evidence of erosion and/or of day-lighted refuse.
4. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Central Valley Water Board **within seven days**, containing at least the following information:
- a. A map showing the location(s) of seepage;
 - b. An estimate of the flow rate;
 - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d. Verification that samples have been submitted for analyses of the Monitoring Parameters and Constituents of Concern listed in Table III of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and

- e. Corrective measures underway or proposed, and corresponding time schedule.
5. The Discharger shall submit an **Annual Monitoring Summary Report** to the Central Valley Water Board covering the reporting period of the previous monitoring year. This report shall contain:
- a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b. All historical monitoring data, including data for the previous year, shall be submitted in tabular form as well as in a digital file format. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Section 20420(h) of Title 27], in that this facilitates periodic review by the Central Valley Water Board.
 - c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
 - d. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Original signed by:
Ordered by: _____
PAMELA C. CREEDON, Executive Officer

12-10-2010

(Date)

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TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L. ¹	Quarterly
Temperature	°C ²	Semiannually
Electrical Conductivity	µmhos/cm ³	Semiannually
pH	pH units	Semiannually
Turbidity	NTU ⁴	Semiannually
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L ⁵	Semiannually
Nitrate (NO ₃)	mg/L	Semiannually
Nitrate as Nitrogen (NO ₃ -N)	mg/L	Semiannually
Nitrite (NO ₂ -N)	mg/L	Semiannually
Total Kjeldahl Nitrogen	mg/L	Semiannually
Total Nitrogen	mg/L	Semiannually
Ammonia (NH ₃ -N)	mg/L	Semiannually
Chloride	mg/L	Semiannually
Carbonate	mg/L	Semiannually
Bicarbonate	mg/L	Semiannually
Phosphorous	mg/L	Semiannually
Sulfate	mg/L	Semiannually
Calcium	mg/L	Semiannually
Magnesium	mg/L	Semiannually
Potassium	mg/L	Semiannually
Sodium	mg/L	Semiannually
Volatile Organic Compounds (USEPA Method 8260, see Table IV)	µg/L ⁶	Semiannually

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM
(continued)

Constituents of Concern (see Table V)

Total Organic Carbon	mg/L	Every 5 years
Inorganics (dissolved)	mg/L	Every 5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	Every 5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	Every 5 years
Chlorophenoxy Herbicides (USEPA Method 8151)	µg/L	Every 5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	Every 5 years

-
1. Feet and hundredths of a foot above mean sea level.
 2. Degrees Celsius.
 3. Micromhos per centimeter.
 4. Nephelometric turbidity units.
 5. Milligrams per liter.
 6. Micrograms per liter.

TABLE II
UNSATURATED ZONE MONITORING

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Electrical Conductivity	µmhos/cm ¹	Semiannual
pH	pH units	Semiannual
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L ²	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L	Semiannual
Constituents of Concern (see Table VI)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L ³	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years

1. Micromhos per centimeter.
 2. Milligrams per liter.
 3. Micrograms per liter.

TABLE III
LEACHATE DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Total Flow	Gallons	Monthly
Flow Rate	Gallons/Day	Monthly
Electrical Conductivity	µmhos/cm ¹	Annually
pH	pH units	Annually
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L ²	Annually
Chloride	mg/L	Annually
Carbonate	mg/L	Annually
Bicarbonate	mg/L	Annually
Nitrate - Nitrogen	mg/L	Annually
Sulfate	mg/L	Annually
Calcium	mg/L	Annually
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Sodium	mg/L ³	Annually
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L ³	Annually
Constituents of Concern (see Table VI)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years

1. Micromhos per centimeter.
 2. Milligrams per liter.
 3. Micrograms per liter.

TABLE IV
MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Electrical Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC:

USEPA Method 8260

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis-1,2-Dichloroethylene (cis-1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Hexachlorobutadiene

TABLE IV
MONITORING PARAMETERS FOR DETECTION MONITORING
(Continued)

Hexachloroethane
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
4-Methyl-2-pentanone (Methyl isobutylketone)
Naphthalene
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

TABLE V
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	200.8
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	200.8
Lead	200.8
Mercury	7470
Nickel	6010
Selenium	200.8
Thallium	200.8
Cyanide	E335.4
Sulfide	376.2

Volatile Organic Compounds:

USEPA Method 8260

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

(Continued)

1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

(Continued)

1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270 - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

(Continued)

2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimehtylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

(Continued)

Hexachlorocyclopentadiene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

(Continued)

o-Toluidine
Toxaphene
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Chlorophenoxy Herbicides:

USEPA Method 8151

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

Organophosphorus Compounds:

USEPA Method 8141

Atrazine
Chlorpyrifos
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Diazinon
Dimethoate
Disulfoton
Ethion
Methyl parathion (Parathion methyl)
Parathion
Phorate
Simazine

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2010-0123
FOR H.M. HOLLOWAY, INC.
H.M. HOLLOWAY SURFACE MINE LANDFILL PROJECT
KERN COUNTY

H.M. Holloway, Inc. (hereafter Discharger) owns and operates an open-pit gypsum mine located on Holloway Road in Lost Hills. The 301-acre mining facility (facility) contains four depleted mine pit areas, covering 172 acres, that have been designated for waste disposal. The depleted gypsum mine pits are reclaimed by discharging up to 2,000 tons per day of industrial waste consisting of ash, lime cake, treated automobile shredder waste (predominately nonmetallic, solid material including plastic, broken glass, rubber, foam, soil, and fabric), concrete and cement construction rubble, asphalt products (e.g., roofing shingles, reclaimed road surface materials, etc.), and shredded automobile tires.

The Central Valley Water Board adopted Order 97-078, in which the facility was designated as an unclassified waste disposal site for the discharge of specific industrial wastes pursuant to Title 23, California Code of Regulations, Section 2510 et seq. (Chapter 15). The proposed Order revises the existing Waste Discharge Requirements to classify the depleted mine pits as Class III landfills pursuant to Title 27, California Code of Regulations, Section 20005 et seq. (Title 27), and revises the list of wastes allowed for discharge to include spent sandblast media and dewatered Class A and Class B municipal biosolids; and to exclude sulfur, shredded plastic, concrete and cement construction rubble, asphalt products, shredded automobile tires and drilling mud.

The climate in the southern San Joaquin Valley is semi-arid, with hot, dry summers and cool winters. The average annual precipitation is 5.95 inches with an annual evaporation rate of 67.59 inches. The facility is not within a 100-year flood zone according to FEMA maps.

The soils underlying the facility consist of a thick sequence (maximum depth of investigation 50 feet beneath the mine pits) of consolidated soils dominated by silts and low-to-medium plasticity clays. Between 15 and 50% montmorillinite clay was identified by X-ray diffraction in soil samples collected from the upper 25 feet of soil beneath Pit E. The hydraulic conductivity of the soils underlying the Units ranges between 1×10^{-7} and 1×10^{-10} centimeters per second. The site is not within a known fault hazard zone.

The first encountered groundwater occurs in thin, laterally discontinuous and vertically stratified sand lenses found at depths ranging between 60 and 120 feet below the ground surface, or between 20 and 38 feet below the base of the Units. Groundwater elevations range from 323 feet mean sea level (MSL) to 348 feet MSL. The groundwater is unconfined. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 5,300 and 10,500 micromhos/cm, and concentrations of total dissolved solids (TDS) ranging from 4,900 to 7,460 milligrams per liter (mg/l) with an average concentration of 6,015 mg/l. The recommended secondary maximum contaminant level (MCL) of TDS for drinking water is 500 mg/l. The first encountered groundwater exceeds the primary MCL for drinking water for selenium and nitrate. Selenium ranged from 57 to 219 micrograms per liter ($\mu\text{g/l}$) and nitrate as nitrate ranged from 14 to 598 mg/l.

Secondary drinking water standards were also exceeded for manganese, chloride, and sulfate. Additionally, first encountered groundwater exceeds several agricultural water quality limits, including those for chloride, molybdenum, selenium, EC, and TDS.

The groundwater detection monitoring system, initiated in October 1995, consists of 12 monitoring wells. The Discharger's detection monitoring program for groundwater satisfies the requirements contained in Title 27. Groundwater monitoring to date has not detected the release of any waste constituents. The Discharger was not required by Chapter 15 to conduct unsaturated zone monitoring since the Units were unclassified. The proposed order requires unsaturated zone monitoring with a pan lysimeter installed beneath the leachate collection sumps of the leachate collection and removal system. If leachate is produced, which is unlikely, it will collect in the leachate collection sumps until a sufficient depth of leachate is attained to operate the collection pumps efficiently. Beneath the collection sumps is, therefore, the most likely location that leachate could migrate to the surrounding geologic materials.

The Discharger demonstrated that site characteristics alone, without a liner, meet the performance goal contained in Section 20310 of Title 27. The demonstration utilized a mathematical model to predict fate and transport of waste constituents discharged to the Units. Results of the model and past performance of the existing Units demonstrate that the proposed Unit design will ensure no impairment of beneficial uses of surface water or groundwater beneath or adjacent to the landfill in accordance with Section 20260(b)(1) of Title 27.

The waste containment system consists of, from the bottom up: naturally occurring geologic materials prepared and conditioned to prevent the migration of waste constituents to groundwater and to convey leachate to the leachate collection sump; a leachate collection and removal system drainage layer consisting of either appropriate selected geologic materials or a geonet/geocushion; and an operations layer to designed to protect the leachate collection and removal system.

The County of Kern, Board of Supervisors, certified the final environmental impact report on 1 April 2008. The County of Kern filed a Notice of Determination on 14 April 2008 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). The Central Valley Water Board staff considered the environmental impact report and incorporated mitigation measures from the environmental impact report into the proposed Order designed to prevent potentially significant impacts to design facilities and to water quality.

This order requires full containment of wastes and does not permit degradation of surface water or groundwater. Further antidegradation analysis is therefore not needed. The discharge is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16.