

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION

**BOARD ORDER NO. R6V-2006 0037**  
**WDID NO. 6B360304003**

REVISED WASTE DISCHARGE REQUIREMENTS

FOR  
**SAN BERNARDINO COUNTY SOLID WASTE MANAGEMENT DIVISION**  
**APPLE VALLEY CLASS III LANDFILL**

\_\_\_\_\_San Bernardino County\_\_\_\_\_

The California Regional Water Quality Control Board, Lahontan Region (Water Board) finds:

1. Discharger

On November 10, 2004 the County of San Bernardino submitted a complete revised Final Closure and Postclosure Maintenance Plan for the Apple Valley Class III Landfill. For the purpose of this Water Board Order (Order), the County of San Bernardino (land owner and site operator) is referred to as the "Discharger."

2. Facility

The Apple Valley Class III Landfill is the facility that stores waste. It stopped accepting waste in July 1997. For the purposes of this Order, the Apple Valley Class III Landfill is referred to as the "Landfill."

3. Order History

The Water Board adopted Board Order No. 6-90-07 on January 11, 1990, which revised the Waste Discharge Requirements (WDRs) for the Landfill. Board Order No. 6-93-10035 was adopted on September 9, 1993, and amended the WDRs for the Landfill to incorporate the requirements of Title 40, Code of Federal Regulations (40CFR), Parts 257 and 258 (Subtitle D Regulations) as implemented in the State of California under State Water Resources Control Board (SWRCB) Resolution No. 93-62. WDRs under Board Order No. 6-95-66, were adopted June 8, 1995 to require the Discharger to achieve compliance with the revised requirements of Chapter 15 and to incorporate requirements of the previously adopted Board Order Amendment No. 6-93-10035.

The Water Board's Executive Officer issued a Notice of Applicability (NOA) on May 3, 1995 for General Water Board Order No. 6-93-106. The Water Board Executive Officer issued a Waiver of WDRs on May 3, 1995. On May 14, 1998 the Water Board's Executive Officer rescinded the NOA. Treated groundwater was discharged, for dust control, at the active Victorville Landfill.

4. Enforcement History

The Water Board Executive Officer issued Cleanup and Abatement Order (CAO) No. 6-89-182 to the Discharger on August 14, 1989 to require the cleanup and abatement of a condition of groundwater pollution beneath the Landfill. CAO No. 6-91-131, which supersedes CAO No. 6-89-182, was issued by the Executive Officer on October 24, 1991 to establish a revised time schedule for the cleanup and abatement project. The Discharger has investigated the condition of pollution, and has initiated a pilot groundwater remediation project.

On June 8, 1995, Board Order No. 6-95-66 was adopted revising WDRs and implementing the revised Chapter 15 regulations. Board Order No. 6-95-66 rescinded Cleanup and Abatement Order No. 6-89-182 and No. 6-91-931.

5. Reason for Action

The Water Board is issuing Closure WDRs to require the Discharger to achieve compliance with the requirements of California Code of Regulations, title 27, section 20385, section 20415, section 20420, section 20950 (general closure and post-closure maintenance standards), and section 21090 (closure and post-closure maintenance requirements for solid waste landfills). This Order complies with SWRCB Resolution No. 93-62 by requiring the Discharger to continue to implement an Evaluation Monitoring Program (EMP), under Title 27, and to implement all additional federal responses, including those required under 40 C.F.R. part 258.54(c) and 258.55(g).

6. Landfill Location

The Landfill is located near Yucca Loma Road at the eastern edge of the Town of Apple Valley, San Bernardino County, within the S/2, NE/4 of Section 29, T5N, R2W, SBB&M, see Attachment "A," which is made part of this Order.

7. Description of Landfill

The Landfill is an unlined landfill, which received greater than 100 tons of waste per day. Septage discharge to unlined drying beds in the southern portion of the landfill footprint ceased in April 1, 1990 and were closed in March, 1993. The Landfill began operations in 1964 and ceased accepting waste in July 1997. As such, Subtitle D Regulations requirements became effective for this Landfill on October 9, 1993. Water Board staff have reviewed information submitted by the Discharger which illustrates the footprint of waste discharged as of October 9, 1993. The footprint documents the limits of waste, which are exempt from Subtitle D Regulations requirements for composite liners, and is shown as Attachment "B", which is made a part of this Order.

8. Authorized Disposal Sites

The footprint of waste shown in Attachment "B" is the only authorized Landfill disposal site.

9. Waste Classification

The Landfill has received waste derived from the City of Apple Valley and the surrounding desert communities. The waste is defined in California Code of Regulations, title 27 sections 20220 and 20230 as inert and non-hazardous solid waste, respectively. The landfill has also accepted nonhazardous solid waste as defined in Subtitle D Regulations.

10. Waste Management Unit Classification

Pursuant to California Code of Regulations, title 27, section 20260, the Landfill is classified as a Class III waste management unit.

11. Subtitle D Regulations Compliance Status

Board Order amendment No. 6-93-10035 required the submittal of several items in order to comply with Subtitle D Regulations for the Landfill. The Discharger has submitted complete information regarding the acceptance of liquids, the existing waste footprint, the distance from the Landfill to the nearest drinking water source, and whether the Landfill is located in a 100-year floodplain or a wetlands. This Order includes a time schedule to submit a revised Water Quality Protection Standard (WQPS), which meets the requirements of Subtitle D Regulations and Title 27. The above listed items which have already been submitted, in conjunction with the submittals required by this Order, fulfill the submittal requirements of Subtitle D Regulations as implemented by SWRCB Resolution No. 93-62.

12. Water Quality Protection Standard

The WQPS consists of constituents of concern (including monitoring parameters), concentration limits, monitoring points, and the point of compliance. The standard applies over the active life of the Landfill, closure and post-closure maintenance period, and the compliance period. This Order includes a time schedule for the Discharger to propose a revised WQPS for all constituents of concern.

The groundwater exceeds the WQPS at certain groundwater monitoring wells at the site because of releases from the Landfill. The constituents of concern and monitoring points are described in Monitoring and Reporting Program RV6-2006-0037, which is attached to and made part of this Order. The monitoring points have been established to evaluate the condition of groundwater during the EMP, and includes wells at the point of compliance.

13. Constituents of Concern

The Constituents of Concern (COCs) are the Monitoring Parameters and 40 C.F.R. part 258, Appendix I (short list)<sup>1</sup>, and Appendix II (long list)<sup>2</sup>, which include semi-volatile organic compounds, pesticides/PCBs and herbicides.

14. Statistical Methods

Statistical and non-statistical analysis of monitoring data is necessary for this Landfill because the groundwater has already been polluted, and the Discharger is conducting an EMP. The Discharger will conduct non-statistical analysis of data for non-naturally occurring constituents in groundwater to determine if any new releases occur during the EMP and/or CAP. Non-statistical methods for data analysis are described in Monitoring and Reporting Program No. R6V 2006-0037. The Water Board will require statistical analysis of monitoring data if a Detection Monitoring Program (DMP) is re-established.

15. Detection Monitoring

The DMP detected a release from the Landfill. Volatile Organic Constituents (VOCs) have been detected at levels above background (quantifiable concentrations) the primary ones being: tetrachloroethene (PCE), vinyl chloride, trichloroethene (TCE), cis-1,2-dichloroethene, 1,1-dichloroethene, and 1,1-dichloroethane. During the first quarter of 2006, concentrations in groundwater of three VOCs exceeded maximum contaminant levels (MCLs) for drinking water in wells located within the facility property. No off-site groundwater monitoring wells exhibited any VOC concentrations exceeding drinking water standards. Historical concentrations for selected VOCs are listed in the table below. Elevated concentrations above background for Nitrate (as Nitrogen), Chloride, Total Dissolved Solids and sulfate have been detected and are also evidence of a release. The Discharger is conducting an Evaluation Monitoring Program (EMP) to evaluate the extent of the impacts to water quality and to design a Corrective Action Program. A DMP will be re-established pursuant to California Code of Regulations, title 27, section 20385, once the condition of groundwater impact is abated.

16. Evaluation Monitoring

An EMP is required, pursuant to California Code of Regulations, title 27, section 20425, to evaluate evidence of a release, which has been verified at the Landfill. MRP No. R6V-0037 establishes and describes the EMP, which is required to monitor the nature and extent of the release as well as detect any new release until the Corrective Action Program (CAP) monitoring has been implemented.

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<sup>1</sup> Appendix I to 40 C.F.R. part 258 – *Constituents for detection monitoring*

<sup>2</sup> Appendix II to 40 C.F.R. part 258 – *List of hazardous inorganic and organic constituents*

17. Corrective Action

A CAP to remediate VOCs in groundwater beneath the existing Landfill portion of the Facility is required pursuant to California Code of Regulations, title 27, section 20430. The Discharger submitted *Evaluation and analysis of data Apple Valley Sanitary Landfill* report (March 2001) for the ongoing evaluation monitoring program. The Discharger proposed to complete the pilot-scale enhanced passive landfill gas extraction system as a possible future remediation of groundwater at the site.

In order to evaluate a potential pump and treat groundwater remediation system, the Discharger operates a pilot-scale system in the northern portion of the property. It was initiated in 1995 and as of June 30, 2005, the treatment system had removed a cumulative total of approximately 0.69 pounds of VOCs from about 5.77 million gallons of groundwater (TRC, 2005).

Due to the geologic complexity of the site, the Discharger has proposed to stop the pump and treat system and monitor the response in groundwater conditions and groundwater quality. Based on the results of this evaluation the Discharger proposes to develop a long-term corrective action program (GeoLogic Assoc., 2005). This Order requires the Discharger to submit an updated EMP and feasibility study for corrective action.

<b>Constituent</b>	<b>Minimum<sup>1</sup></b>	<b>Maximum<sup>1</sup></b>	<b>Average<sup>1</sup></b>
1,1-dichloroethane	0.09	27	1.92
cis-1,2-dichloroethene	0.04	43	2.30
tetrachloroethene (PCE)	0.08	31	2.49
vinyl chloride	0.22	2.0	0.57
trichloroethene (TCE)	0.06	5.8	0.95
1,1-dichloroethene	0.07	5.0	0.88

1) micrograms per Liter

18. Discharge of Monitoring Well Purge Water

As part of regularly scheduled groundwater sampling events, groundwater monitoring wells are purged until parameters of pH, temperature, and conductivity are sufficiently stabilized to assure collection of a representative sample. The purge water contains VOCs at concentrations greater than background. Purge water containing VOCs or nitrate at concentrations less than maximum contaminant levels (MCLs) may be used at the Landfill for dust control. This Order prohibits the discharge of purge water containing concentrations of VOCs or nitrate, which exceed MCLs for drinking water at the Landfill.

19. Site Geology

The Landfill overlies Quaternary alluvial fan deposits that are composed of poorly sorted, coarse-grained sand and gravel with some silt. The alluvium extends to a depth of about 147 feet below ground level at the site. The landfill site is in a topographic saddle on the west side of the Granite Mountains which are composed of Triassic monzonite immediately east of the site and Jurassic or Cretaceous granite and quartz monzonite west of the site. Smaller outcrops of hornblend diorite and biotite schist were mapped in the site vicinity, in addition to isolated zones of hydrothermally altered rock found northeast and southwest of the landfill. Bedrock beneath the Landfill ranges from five to 20 feet below ground surface. A series of northwest-southeast trending parallel bedrock fractures or fault shear zone exist in the bedrock beneath the Landfill, and may represent a shear zone associated with faulting.

20. Site Hydrogeology

The Landfill is in the eastern portion of the Upper Mojave River Valley groundwater basin. Groundwater exists in the fractured bedrock beneath the Landfill at depths ranging from 49 to 236 feet below ground surface. Groundwater flows both to the north and south of the Landfill, and appears to be complicated by the presence of the northwest-southeast trending bedrock fractures or shear zone. Groundwater flow enters the alluvium both north and south of the Landfill where the alluvium-bedrock contact intersects the water table. Groundwater north of the groundwater divide flows at an average hydraulic gradient of 0.11 foot per foot (ft/ft), and south of the divide groundwater flows south-southeast at an average hydraulic gradient of 0.09 ft/ft. Average groundwater flow velocities range from 1.8 feet/day (ft/day) to 6.6 ft/day in the northern flow regime and 0.045 ft/day to 5.4 ft/day in the southern flow regime.

21. Site Surface Hydrology and Storm Water Runoff

There is no perennial surface water flow at the site. The site is within in a topographic saddle that forms a drainage divide, with all rainfall on the southern half of the landfill site running off in the southerly direction and rainfall on the northern half of the site running off to the north and west. All storm water from the Landfill is regulated under the state Amended General Industrial Activities Storm Water Permit.

22. Topography

Site topography is shown on Attachment "A", which is made a part of this Order. The Landfill is in a topographic saddle on the west side of the Granite Mountains. The landfill waste ranges in elevation from 3,145 feet above mean seal level (amsl) to 3,240 feet amsl.

23. Climate

The Landfill is in an area that can be characterized as arid with infrequent rain, low relative humidity, and hot, dry conditions during the summer months. Summer temperatures in the region typically range between 61 and 98 degrees Fahrenheit (°F). Winter temperatures range between 30 and 58 °F. The mean annual rainfall in the area of the Landfill is approximately 3.6 inches occurring mostly during November through April. Potential evaporation in the area is approximately 110 inches per year. Predominant wind directions are from the south and south-southwest.

24. Land Uses

The land uses at and surrounding the Landfill consist of rural residential, and open desert.

25. Closure and Post-Closure Maintenance

The Discharger has submitted a Final Closure and Post-Closure Monitoring Plan (CPCMP). The Final CPCMP generally proposes in place closure of the waste and an extended period of site monitoring. The Final CPCMP for the Apple Valley Landfill consists of an alternative cover system to the prescriptive standard. The proposed alternative cover system is composed of a minimum three-foot thick, engineered layer composed of select soil materials. The Discharger has demonstrated through an "alternative cover demonstration project" that this evapotranspiration cover will meet or exceed the prescribed performance criteria and will be more economical for site closure than prescriptive standards as documented in its Final Closure Plan. The California Code of Regulations, title 27, section 20080(b) allows the Water Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with title 27, section 20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative, which will meet the criteria contained in Title 27, 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 is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with California Code of Regulations, title 27 section 20080(b)(2). The prescriptive final landfill cover consists of a two-foot thick foundation layer, a one-foot thick clay layer (or acceptable synthetic material) and a one-foot thick erosion resistant layer. The cover will be engineered so that rainwater absorbed in the soil will eventually be drawn back out through the process of evaporation and/or plant transpiration. The monitoring media includes the unsaturated zone, groundwater, and final cover materials. The Water Board accepts the Final CPCMP. The California Integrated Waste Management Board (CIWMB) approved the CPCMP plan on December 15, 2004. This Order requires that the Discharger review the CPCMP annually to determine if significant changes in the Landfill closure operations warrant an update of the plan.

26. Financial Assurance

The Discharger has provided documentation that a financial assurance fund has been developed for closure, post-closure maintenance, and potential corrective action requirements. The fund has been developed as a single entity for all landfills owned and/or operated by the County of San Bernardino. The fund meets the requirements of California Code of Regulations, title 27, sections 22245 and 22247 for financial assurance. This Order requires the Discharger to report the amount of money available in the fund as part of the annual report.

27. Receiving Waters

The receiving waters are the groundwaters of the Upper Mojave River Groundwater Basin (State Water Resources Control Board subbasin code No. 628.20).

28. Lahontan Basin Plan

The Water Board adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan), which became effective on March 31, 1995. This Order implements the Basin Plan.

29. Beneficial Groundwater Uses

The present and probable beneficial uses of the groundwaters of the Upper Mojave River Groundwater Basin as set forth and defined in the Basin Plan are:

- a. municipal and domestic supply;
- b. agricultural supply;
- c. industrial service supply;
- d. freshwater replenishment; and
- e. aquatic life.

30. California Environmental Quality Act

The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15301.

31. Notification of Interested Parties

The Water Board has notified the Discharger and known interested agencies and persons of its intent to adopt revised WDRs for the project.



32. Consideration of Interested Parties

The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** that the Discharger shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Receiving Water Limitations

The discharge of waste shall not cause a violation of any applicable water quality standard for receiving water adopted by the Lahontan Water Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act, the Water Code, and regulations adopted thereunder. The discharge shall not cause the presence of the following substances or conditions in groundwaters of the Upper Mojave River Groundwater Basin (except as provided in Section II.A.9. below):

1. Bacteria - Waters shall not contain concentrations of coliform organisms attributable to human wastes. The median concentration of coliform organisms, over any seven-day period, shall be less than 1.1/100 ml in groundwaters.
2. Chemical Constituents - Groundwaters designated as Municipal and Domestic Supply (MUN) shall not contain concentrations of chemical constituents in excess of the MCL or Secondary Maximum Contaminant Level (SMCL) based upon drinking water standards specified in Title 22, CCR: Table 64431-A of Section 64431 (Inorganic Chemicals), Table 6444-A of Section 64444 (Organic Chemicals), Table 64449-A of Section 64449 (SMCL-Consumer Acceptance Limits), and Table 64449-B of Section 64449 (SMCL-Ranges).
3. Chemicals - Waters shall not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.
4. Radioactivity - Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food chain to an extent that it presents a hazard to human, plant, animal, or aquatic life. Waters shall not contain concentrations of radionuclides in excess of limits specified in California Code of Regulations, title 22, section 64443.

5. Taste and Odors - Groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For groundwaters designated as MUN, at a minimum, concentrations shall not exceed adopted SMCLs specified in Table 64449-A of Section 64449 (SMCLs - Consumer Acceptance Limits), and Table 64449-B of Section 64449 (SMCLs - Ranges) of Title 22 of the California Code of Regulations, including future changes as the changes take effect.
6. The waste discharge shall not result in any perceptible color, odor, taste, or foaming in surface or groundwaters.
7. The discharge shall not cause the presence of toxic substances that individually, collectively or cumulatively cause detrimental physiological responses in human, plant, animal or aquatic life in any surface or groundwater of the Upper Mojave Hydrologic Area of the Mojave Hydrologic Unit

## II. REQUIREMENTS AND PROHIBITIONS

### A. General

1. The discharge shall not cause a pollution as defined in Water Code section 13050, or a threatened pollution.
2. The discharge shall not cause a nuisance as defined in Water Code section 13050.
3. The discharge of solid wastes, leachate, or any other deleterious material to the groundwaters of the Upper Mojave Valley Groundwater Basin is prohibited.
4. The discharge of waste except to the authorized disposal site is prohibited.
5. Best management practices shall be used when applying water for dust control. Water used for dust control during closure site operations shall be limited to a minimal amount. A "minimal amount" is defined as that amount which will not result in runoff.
6. Wastes shall not be placed in ponded water from any source whatsoever.
7. Any discharge which causes violation of any narrative water quality objective contained in the Basin Plan, including the Nondegradation Objective is prohibited.

8. Any discharge which causes violation of any numeric water quality objective contained in the Basin Plan is prohibited.
9. Where any numeric or narrative water quality objective or receiving waters limit contained in the Basin Plan is already being violated, any discharge which causes further degradation or pollution is prohibited.
10. The disposal sites shall be protected from inundation, washout, or erosion of wastes and erosion of covering materials resulting from a storm or a flood having recurrence interval of once in 100 years.
11. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources shall not contact or percolate through solid wastes discharged at the site.
12. The exterior surfaces of the disposal sites shall be graded to promote lateral runoff of precipitation and to prevent ponding.
13. At closure, all facilities must be closed in accordance with the final CPCMP accepted by the Water Board.
14. The Discharger shall immediately notify the Water Board of any flooding, slope failure or other change in site conditions, which could impair the integrity of waste containment facilities or of precipitation and drainage control structures.
15. Pursuant to California Code of Regulations, title 27, section 21090, subdivision (a)(4)(C), the Discharger shall repair, in a timely manner, any breach or other cover problem discovered during periodic inspection of the Landfill cover. Repairs to the upper soil cover material must follow a Construction Quality Assurance (CQA) plan as required in Section 20323 and defined in Section 20324, Title 27, CCR, and the final CPCMP.
16. Pursuant to California Code of Regulations, title 27, section 20324, the Discharger is required to carry out the construction of the final cover in accordance with a CQA plan certified by an appropriately registered professional. If the Water Board finds that any construction of the final cover system was undertaken in the absence of a CQA plan that satisfies the requirements of Section 20324, the Water Board shall require the Discharger to undertake any corrective construction needed to achieve such compliance.

B. Detection Monitoring Program

The Discharger shall maintain a DMP as required in California Code of Regulations, title 27, section 20420.

C. Evaluation Monitoring Program

The Discharger shall maintain the EMP as long as there is statistically significant evidence of a release from the Landfill as required in California Code of Regulations, title 27, section 20425.

D. Corrective Action Program

The Discharger shall institute a CAP as required pursuant to California Code of Regulations, title 27, section 20430 should the results of the EMP warrant a CAP.

III. DATA ANALYSIS

A. Statistical and Nonstatistical Analysis

The Discharger shall determine whether there is significant statistical or non-statistical evidence of a new release from the Landfill. Non-statistical evidence may include time series plots, unexplained volumetric changes in the Landfill, unexplained stress in biological communities, unexplained changes in soil characteristics, visible signs of leachate migration, and unexplained water table mounding beneath or adjacent to the Landfill, or any other change in the environment that could be reasonably be expected to be the result of a new release from the Landfill.

B. Verification Procedures

1. The Discharger shall immediately initiate verification procedures as specified below whenever there is a determination by the Discharger or Executive Officer that there is evidence of a new release. If the Discharger declines the opportunity to conduct verification procedures, the Discharger shall submit a technical report as described below under the heading Technical Report Without Verification Procedures.
2. The verification procedure shall only be performed for the constituent(s) that has shown evidence of a new release, and shall be performed for those monitoring points at which a new release is indicated.
3. The Discharger shall either conduct a composite retest using data from

the initial sampling event with all data obtained from the resampling event or shall conduct a discrete retest in which only data obtained from the resampling event shall be analyzed in order to verify evidence of a new release.

4. The Discharger shall report to the Water Board by certified mail the results of the verification procedure, as well as all concentration data collected for use in the retest within seven days of the last laboratory analysis.
5. The Discharger shall determine, within 45 days after completion of sampling, whether there is evidence of a new release from the Landfill at each monitoring point. If there is evidence of a new release, the Discharger shall immediately notify the Water Board by certified mail. The Executive Officer may make an independent finding that there is evidence of a new release.
6. If the Discharger or Executive Officer verifies evidence of a new release, the Discharger is required to submit, within 90 days of a determination that there is or was a new release, a technical report pursuant to Water Code section 13267, subdivision (b). The report shall propose a revised EMP OR make a demonstration to the Water Board that there is a source other than the Landfill that caused evidence of a new release.

C. Technical Report Without Verification Procedures

If the Discharger chooses not to initiate verification procedures, a technical report shall be submitted pursuant to Water Code section 13267, subdivision (b). The report shall propose a revised EMP, OR, attempt to demonstrate that the new release did not originate from the Landfill.

IV. PROVISIONS

A. Rescission of Waste Discharge Requirements

Board Order No. 6-95-66 is rescinded.

B. Standard Provisions

The Discharger shall comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment "C", which is made part of this Order.

C. Monitoring and Reporting

1. Pursuant to Water Code section 13267, subdivision (b), the Discharger shall comply with the Monitoring and Reporting Program No. R6V-2006 0037 attached to this Order. These reports are needed to monitor for compliance with the Waste Discharge Requirements and determine the effect of the discharge on water quality.
2. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of the Monitoring and Reporting Program.

D. Closure Construction

The Final CPCMP dated November 10, 2004, which includes an alternative final cover is accepted.

E. Updated EMP and Corrective Action

Because the Landfill has had, and continues to have, a release, the Discharger shall comply with the following requirements in order to bring the site into compliance with California Code of Regulations, title 27, section 20425 and 40 C.F.R. part 258.55:

1. The water quality monitoring at the Apple Valley Landfill shall be conducted in accordance with California Code of Regulations, title 27 section 20425, Evaluation Monitoring Program, and 40 C.F.R. part 258.55, Assessment Monitoring Program (AMP).
2. If detection of a new Appendix II constituent is verified (from analysis of all liquids collected at the Landfill), it must be reported to the Water Board and noted in the operating record within 14 days of receipt of the verification.
3. Within 90 days of the adoption of this order, the Discharger shall submit an updated preliminary Engineering Feasibility Study (EFS) under California Code of Regulations, title 27, section 20425, subdivision (c) and shall begin an Assessment of Corrective Measures (ACM), and Selection of Remedy (SOR) under 40 C.F.R. part 258.55, part 258.56, and part 258.57, respectively, to the extent that these federal requirements are not addressed by the EMP or the landfill's current monitoring program. The EFS shall contain at a minimum a detailed description of the corrective action measures that could be taken to achieve background concentrations for all Constituents of Concern.

F. Financial Assurance

The Discharger shall submit a report annually providing evidence that adequate financial assurance pursuant to the requirements of the WDRs has been provided for closure/postclosure and for potential releases. Evidence shall include the total amount of money available in the fund developed by the Discharger. In addition, the Discharger shall either provide evidence that the amount of financial assurance is still adequate or increase the amount of financial assurance by the appropriate amount. An increase may be necessary due to inflation, a change in regulatory requirements, a change in the approved closure plan, or other unforeseen events.

V. TIME SCHEDULE

Additional Technical Reports

Pursuant to California Code of Regulations, title 27, section 21880, the Discharger shall submit to the Regional Board a certification, under penalty of perjury, that the solid waste landfill has been closed in accordance with the final CPCMP and the Construction Quality Assurance (CQA) plan. The certification, which shall include any other documentation as necessary to support the certification, shall be incorporated into the CPCMP. This report shall be submitted to the Regional Board no later than 180 days after completion of construction activities. The certification shall be completed by a California registered civil engineer or a California certified engineering geologist and include a report with supporting documentation.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by California Regional Water Quality Control Board, Lahontan Region, on September 14, 2006.

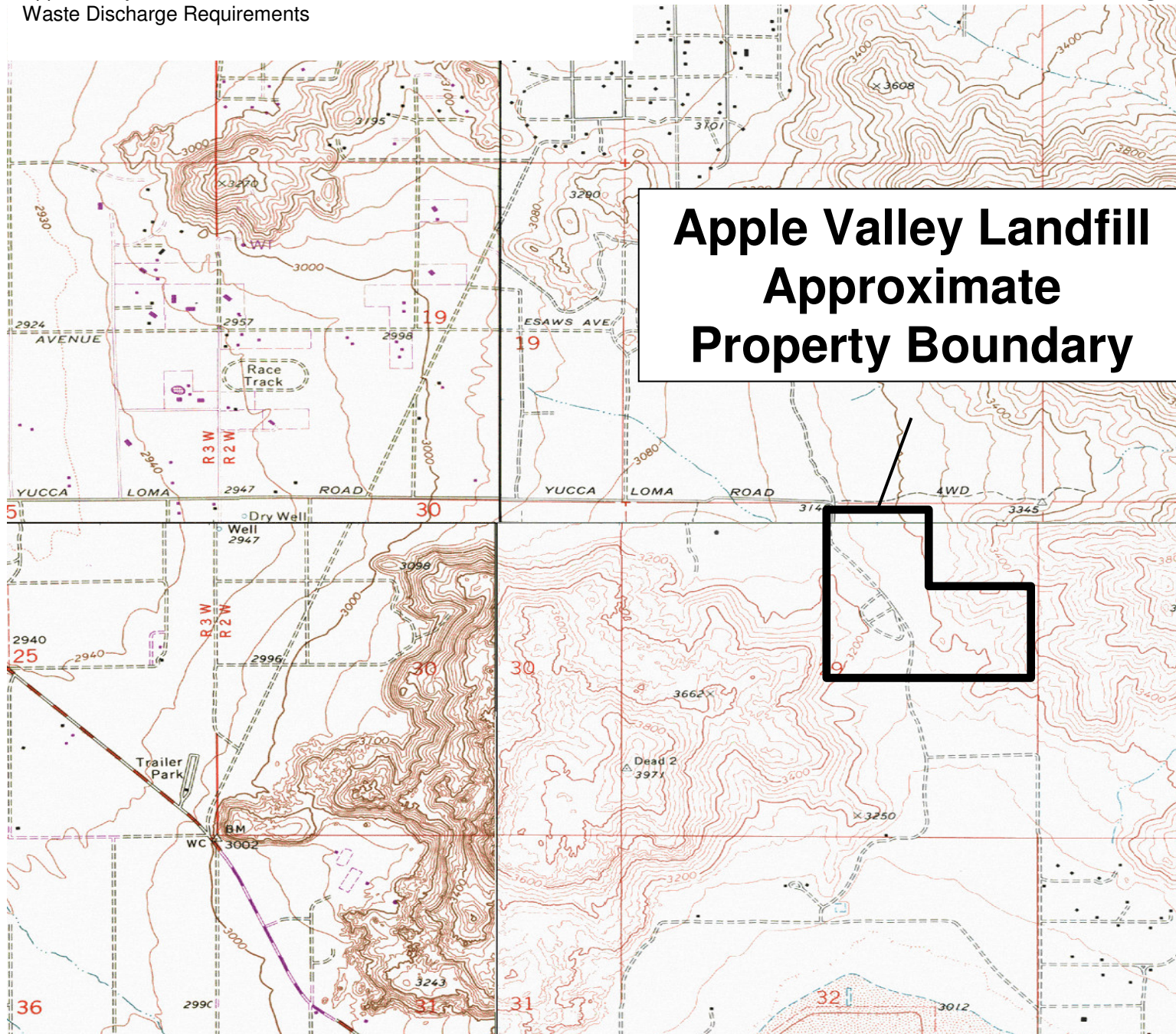
"Original Signed by"

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HAROLD J. SINGER  
EXECUTIVE OFFICER

Attachments:       A.     Location Map and Topography  
                          B.     Landfill Waste Footprint  
                          C.     Standard Provisions for Waste Discharge Requirements





**Apple Valley Landfill  
Approximate  
Property Boundary**

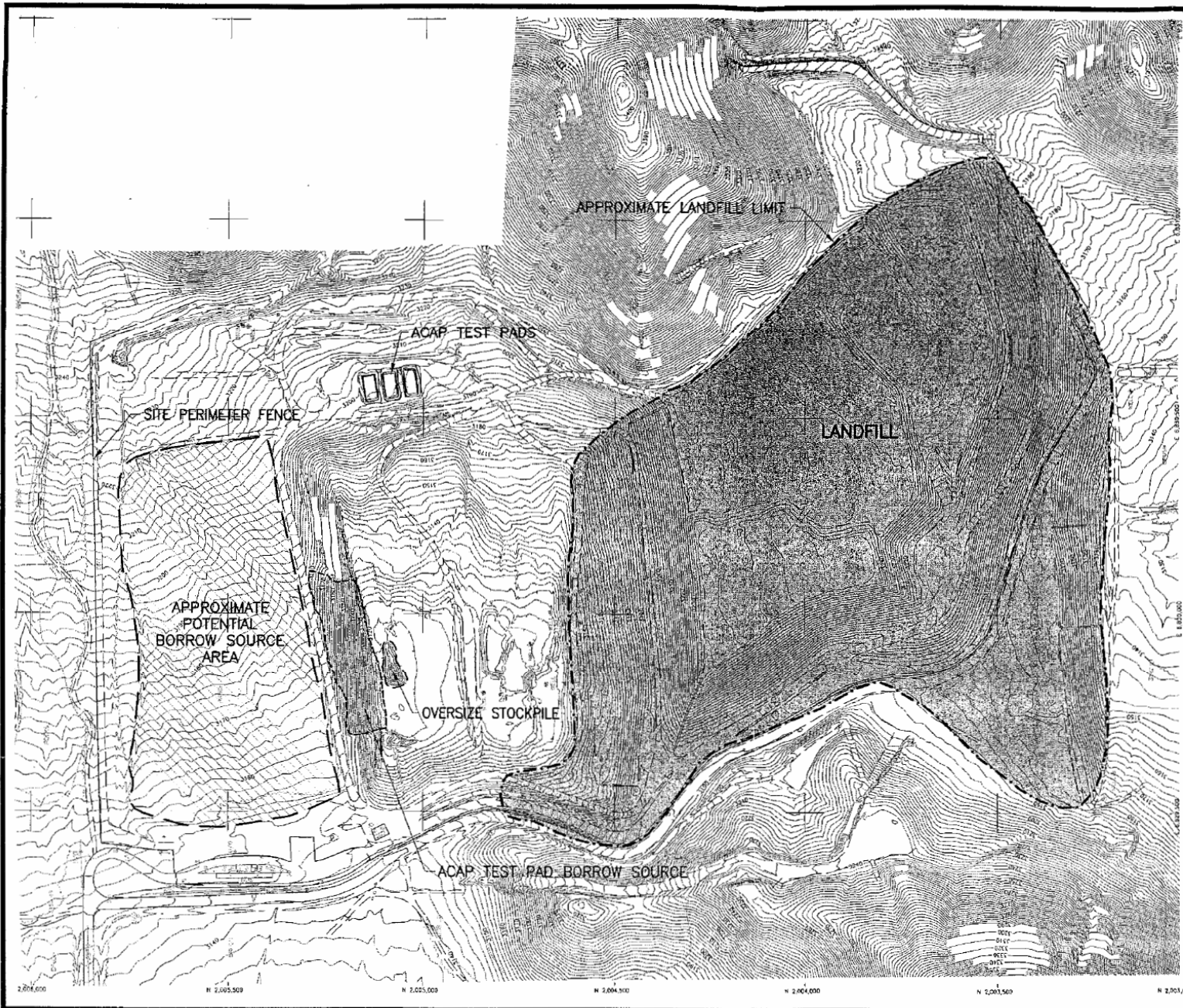


**Scale**



**0.5  
Miles**





REFERENCE:  
TOPOGRAPHIC MAP, AS OF 08/28/02,  
PROVIDED BY THE SAN BERNARDINO COUNTY

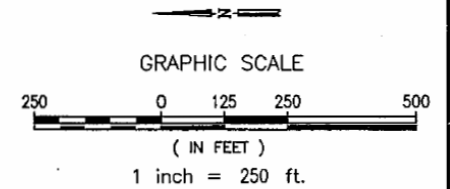


FIGURE 1

APPLE VALLEY LANDFILL SITE MAP  
ALTERNATIVE FINAL COVER DESIGN  
APPLE VALLEY SANITARY LANDFILL  
COUNTY OF SAN BERNARDINO, CA



**GeoLogic Associates**  
Geologists, Hydrogeologists, and Engineers

DRAWN BY: VL	DATE: MAY 2004	JOB NO. 2004-051
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Attachment C  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION

**STANDARD PROVISIONS**  
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.
- f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.

b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION**

**MONITORING AND REPORTING PROGRAM  
NO. R6V-2006-0037  
WDID NO. 6B360304003**

**FOR  
SAN BERNARDINO COUNTY SOLID WASTE MANAGEMENT DIVISION  
APPLE VALLEY CLASS III LANDFILL**

San Bernardino County

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**I. WATER QUALITY PROTECTION STANDARD**

- A. A Water Quality Protection Standard (WQPS) is required by Title 27, California Code of Regulations to assure the earliest possible detection of a release from the Apple Valley Class III Landfill (Landfill) to the underlying soil and/or groundwater. The Water Quality Protection Standard consists of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points. A release has been detected for some constituents of concern. This Monitoring and Reporting Program (MRP) requires the Discharger to continue an Evaluation Monitoring Program (EMP) and submit a revised WQPS to determine if any new releases occur.

In addition the WQPS report shall:

1. Identify all distinct groundwater bodies that could be affected in the event of a release from the Landfill Unit or portion of the Landfill.
2. Include a map showing the monitoring points and background monitoring points for the groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with California Code of Regulations, title 27, section 20405.
3. Evaluate the seasonal direction(s) of groundwater movement within the uppermost groundwater zone(s).

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

B. Groundwater

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 Landfill. The constituents of concern for the Landfill are those listed in Tables I through III for the specified monitored medium. The Discharger shall monitor all constituents of concern every five years, or more frequently as required in accordance with an EMP.

2. 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 the Landfill. The monitoring parameters for the Landfill are those listed in Tables I through III for the specified monitored medium. The Discharger shall monitor all the monitoring parameters quarterly or more frequently as required in accordance with an EMP.

3. Concentration Limits

For a naturally occurring constituent of concern, during the detection monitoring and evaluation monitoring the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to California Code of Regulations, title 27, section 20415; or
- b. By an alternate statistical method acceptable to the Executive Officer in accordance with California Code of Regulations, title 27, section 20415.
- c. Concentration limits greater than background (CLGB) for corrective action may be proposed by the discharger in accordance with California Code of Regulations, title 27, section 20430 after proposed corrective action measures reveal that it is technically and economically infeasible to achieve background levels.
- d. Updated site specific concentration limits may be established for Apple Valley Landfill as follows:

Upper tolerance limits ( $TL_u$ ) may be used to set concentration limits for inorganic constituents, by using the mean plus two standard deviations. For inorganic constituents that have never been detected

the concentration limit is the lowest method detection limit reported (MDL). For inorganic constituents that have not been detected with sufficient frequency to calculate the mean and standard deviation (a minimum of four detections), the concentration limit is the highest measured concentration.

Concentration limits for organic constituents, or non-naturally occurring constituents, are based on background conditions, which are non-detectable concentrations (ND). Therefore the concentration limit for these constituents are the laboratory method detection limit for each compound.

In order to provide the best assurance of the earliest possible detection of a new release of non-naturally occurring waste constituents from the Landfill, this Order specifies a non-statistical method for the evaluation of monitoring data.

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 Landfill 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.

4. Point of Compliance

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



5. Compliance Period

The compliance period for the Landfill shall be the number of years equal to the active life of the Landfill 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.

C. Unsaturated Zone

1. Monitoring Parameters and Constituents of Concern

The monitoring parameters for soil gas shall be methane, carbon dioxide, oxygen, and nitrogen as listed in Table 3. The constituents of concern shall be the volatile organic constituents listed under the laboratory analytical method TO-15 (or equivalent).

2. Concentration Limits

The concentration limits for all constituents of concern in soil gas shall be the method detection limit. The monitoring parameters shall not be required to have concentration limits because these parameters exist naturally in soil gas and development of background concentrations would be technically infeasible.

II. MONITORING

A. Cover Monitoring

The Discharger shall monitor the condition of the cover system as outlined in the Cover-Integrity Monitoring and Maintenance Program that is part of the Post Closure Maintenance Plan. The purpose of this monitoring is to ensure the integrity of the cover and evaluate the cover's capability to promote runoff and prevent ponding. Pursuant to California Code of Regulations, title 27, section 21090, the elements addressed in the cover monitoring report shall include the items on the following list 1 through 6. A report of the results of this monitoring addresses items 1 through 5 shall be submitted **annually**, item 6 shall be addressed in a report submitted every **five years**.

1. an evaluation of the condition of the cover surface, including areas of the vegetative cover, if any, requiring replanting;
2. eroded portions of the cover components requiring re-grading, repair, or (for areas where the problem persistently reoccurs) increased erosion resistance installation;

3. areas where there is ponding or lacking free drainage;
4. areas damaged by equipment operation;
5. the ability of the cover to promote runoff; and
6. localized areas identified either in the five-year iso-settlement survey as having sustained repeated or severe differential settlement.

B. Final Cover Moisture Monitoring

The performance of the final cover with respect to net infiltration shall be monitored by measuring the in-situ moisture content of the cover material. Continuous sampling frequency shall be employed. Monitoring data shall be tabulated and summarized in an annual report. Once every five years, the discharger shall evaluate the moisture monitoring results to determine the effectiveness of the moisture monitoring system and develop recommendations for continued moisture monitoring of the final cover. The evaluation shall be included with the 5-year cover monitoring report discussed in Part II.A.

C. Evaluation Monitoring Program

The Discharger has developed an EMP to determine the extent of the release, and to develop corrective action measures. The EMP consists of installing and sampling a variety of monitoring wells. The EMP shall be as follows:

1. Groundwater
  - a. Monitoring Points

Groundwater samples shall be collected from the following wells<sup>1</sup>: AVSL-1, AVSL-2, AVSL-3, AVSL-4A, AVSL-6, AVSL-7, AVSL-9, AVSL-10, AVSL-11, AVSL-12, AVSL-13, AVSL-14, and AVSL-17. Groundwater samples shall be analyzed for the monitoring parameters listed in this Monitoring and Reporting Program.

The Discharger has submitted a sampling and analysis plan (SAP) that includes the above monitoring points. The Discharger shall update and submit for review a SAP prior to implementing any changes to the monitoring and reporting program.

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<sup>1</sup> Or acceptable Alternate Monitoring Location

b. Monitoring Parameters and Constituents of Concern

The monitoring parameters are the surrogates chloride, sulfate, nitrate as nitrogen, total dissolved solids, and volatile organic constituents as defined by Appendix I of 40 Code Federal Regulations (C.F.R.), part 258, Table 1. The constituents of concern are the monitoring parameters and those constituents listed in Appendix II of 40 C.F.R., part 258. Any Appendix II constituent that is detected and confirmed at one or more groundwater monitoring points becomes a new constituent of concern (COC) for that monitoring well and shall also be added to the Landfill's Monitoring Parameter (MPar) list, pursuant to 40 C.F.R. part 258.55 (b-d).

c. Aquifer Parameters

The parameters listed in Table 1 of this MRP shall be calculated and reported in graphic and tabular form. Include a figure illustration of the Aquifer parameters listed in Table 1.

d. Monitoring Frequency

The frequency of sampling shall be in accordance with Table I of this Monitoring and Reporting Program. Groundwater samples shall be collected from all monitoring points and submitted for laboratory analysis at all monitoring points for the monitoring parameters and constituents of concern listed in this Monitoring and Reporting Program.

i. Five-Yearly COC Scan — Every five years, the discharger shall analyze a sample from each groundwater monitoring point known to be within the release for the detectable presence (including trace determinations) of all COCs that are not yet on the Monitoring Parameter list. During each such COC scanning event, the discharger shall obtain and analyze a minimum of one sample from each affected well. Upon detecting (including trace value) a COC that is not yet on the MPar list, the discharger shall, within 30 days, take a single resample from the indicating affected well(s) and reanalyze it only for the newly-detected constituent(s). Any COC detected in samples collected from a groundwater monitoring well, and verified by a retest, automatically becomes part of the Monitoring Parameter list for the facility. The discharger shall notify Water Board staff of any such change immediately, via phone and shall report in writing to the Water Board and note it in the operating record within 14 days of the verification, and

add the constituent to the Monitoring Parameter list in the next scheduled monitoring report, along with a listing of which well(s) were involved in this detection and verification. This constitutes the means by which the discharger shall meet the requirements of 40 C.F.R., part 258.55(d)(2).

e. Concentration Limits

The Discharger has collected background water quality data for the monitoring parameters contained in this Monitoring and Reporting Program and shall develop revised concentration limits that define background water quality for naturally occurring constituents of concern. The Concentrations limits for organic constituents of concern are based on background conditions at the Landfill, which are non-detectable concentrations (ND).

2. Unsaturated Zone

a. Monitoring Points

The unsaturated zone monitoring system at the Facility shall consist of soil gas monitoring wells (AVG-1A, AVG-1B, AVG-1C, AVG-2, and AVG-3)<sup>2</sup>. The soil gas monitoring points are shown on Attachment "A" of this Monitoring and Reporting Program.

The unsaturated zone (vadose zone) monitoring period shall coincide with the groundwater monitoring period. Gas samples shall be collected from the landfill gas wells on a Quarterly basis in accordance with Table 3 of this Monitoring and Reporting Program. The Discharger may use field monitoring equipment to monitor for the monitoring analyte gases, oxygen, nitrogen, carbon dioxide and methane in all vadose gas wells. If the methane gas concentration for a single monitoring point reaches or exceeds a threshold value defined as five percent by volume during field monitoring, then gas samples from that monitoring event shall be submitted and analyzed for the monitoring analytes and VOCs using USEPA method TO-14A, or TO-15 or acceptable alternative method.

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<sup>2</sup> Or acceptable Alternate Monitoring Location

D. 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 adequate observations to assess the Landfill condition. 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 10 days** following *major storm events*. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

III. SAMPLING AND ANALYSIS

The Discharger is responsible for ensuring that the laboratory analysis of all samples from all Monitoring Points meets the following requirements:

A. Method Selection

The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace") in historical data for that medium, the SW-846 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 involved.

A Matrix Effect is any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

B. Trace Results

Results falling between the MDL and the Practical Quantitation Limit (PQL) shall be reported as "trace," and shall be accompanied by both the (nominal or estimated) MDL and PQL values for that analytical run. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be re-stated from USEPA analytical method manuals. Laboratory derived PQLs are expected to closely agree with published USEPA estimated quantitation limits (EQLs).

C. Estimated MDL and PQL

The MDL and PQL shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab. If the lab 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 and an estimate of the detection limit and/or quantitation limit actually achieved shall be included.

**Table 1. Groundwater Monitoring Program**

Parameters	Units	EPA Method <sup>1</sup>	Sampling <sup>4</sup> Frequency	Reporting <sup>5</sup> Frequency
<b>Field/ Aquifer Parameters</b>				
Slope of Groundwater Gradient	percent	Not Applicable	Quarterly	Semi-annual
Direction of Groundwater Gradient	degrees	NA	Quarterly	Semi-annual
Velocity of Groundwater Flow	feet/year	NA	Quarterly	Semi-annual
Depth to Groundwater	Feet bgs	NA	Quarterly	Semi-annual
Static Water Level	Feet above mean sea level	NA	Quarterly	Semi-annual
Electrical Conductivity	micromhos/cm	120.1	Quarterly	Semi-annual
pH	pH Units	150.1	Quarterly	Semi-annual
Temperature	degrees F or C	170.1	Quarterly	Semi-annual
Turbidity	NTUs	180.1	Quarterly	Semi-annual
<b>Monitoring Parameters</b>				
Total Dissolved Solids	milligrams/liter	E160.1	Quarterly	Semi-annual
Anions - Chloride, sulfate, nitrate	milligrams/liter		Quarterly	Semi-annual
Volatile Organic Compounds <sup>2</sup> (+ oxygenates)	micrograms/liter	8260B	Quarterly	Semi-annual
<b>Constituents of Concern</b>				
Inorganics (dissolved) see Table 2	micrograms/liter		5 year	5 yr
Volatile Organic Compounds <sup>3</sup> (+oxygenates extended list)	micrograms/liter	8260	5 yr	5 yr
Semivolatile Organic Compounds <sup>3</sup>	micrograms/liter	8270	5 yr	5 yr
PCBs and Pesticides <sup>3</sup>	micrograms/liter	8082/8081	5 yr	5 yr
Chlorinated Herbicides <sup>3</sup>	micrograms/liter	8151	5 yr	5 yr
Organophosphorus Pesticides <sup>3</sup>	micrograms/liter	8141	5 yr	5 yr

- 1) The Discharger shall analyze for all constituents using the United States Environmental Protection Agency (USEPA) analytical methods indicated or the most recently approved SW-846 USEPA method or other equivalent USEPA method;
- 2) As defined in Appendix I, 40 C.F.R. part 258;
- 3) As defined in Appendix II, 40 C.F.R. part 258.
- 4) Quarterly monitoring is conducted during the Winter (January 1 – March 31), Spring (April 1 – June 30), Summer (July 1 – September 30), and Fall (October 1 – December 31) monitoring periods.
- 5) Semi-annual reporting – reports are due February 15 (includes data collected during the Fall and Winter monitoring periods) and August 15 (includes data collected during the Spring and Summer monitoring periods).

**Table 2. Inorganic Constituents Of Concern**

Parameter	USEPA Method <sup>6</sup>	Units
Antimony	7062	milligrams/liter (mg/L)
Arsenic	7062	mg/L
Barium	6010	mg/L
Beryllium	6010	mg/L
Cadmium	7131	mg/L
Cobalt	6010	mg/L
Chromium	6010	mg/L
Copper	6010	mg/L
Cyanide	9010	mg/L
Lead	7421	mg/L
Mercury	7471	mg/L
Nickel	7521	mg/L
Selenium	7742	mg/L
Silver	6010	mg/L
Sulfide	9030	mg/L
Thallium	7841	mg/L
Tin	6010	mg/L
Vanadium	6010	mg/L
Zinc	6010	mg/L

6) The Discharger shall analyze for all constituents using the United States Environmental Protection Agency (USEPA) analytical methods indicated or the most recently approved SW-846 USEPA method or other equivalent USEPA method

**Table 3. Landfill Gas Monitoring Program**

Monitoring Parameters	Units <sup>7</sup>	Method <sup>8</sup>	Sampling Frequency	Reporting Frequency
Gases - Methane	ppm or %	ASTM-D1946	Quarterly	Semi-annual
Gases - Carbon Dioxide, Oxygen, Nitrogen	ppm or %	ASTM-D1946	Quarterly	Semi-annual
<b>Constituents of Concern</b>				
Volatile Organic Constituents	ppb or micrograms/L	TO-15	Quarterly	Semi-annual

7) parts per million (ppm), parts per billion (ppb);

8) ASTM = American Society for Testing and Methods



D. Quality Assurance/Quality Control (QA/QC) Data

All QA/QC data shall be reported along with the sample result to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include the following information:

1. Method, equipment, and analytical detection limits;
2. Recovery rates and an explanation for any recovery rate that is outside the USEPA specified recovery rate;
3. Results of equipment and method blanks;
4. Results of spiked or surrogate samples
5. Frequency of quality control analysis;
6. Chain of custody logs; and
7. Name and qualifications of the person(s) performing the analysis.

E. Laboratory Records

Water quality records shall be maintained by the Discharger, and retained for the life of the post-closure period. The period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Officer. Such records shall show the following for each sample:

1. Identity of sample and of the actual monitoring point designation from which it was taken, along with the identity of the individual who obtained the sample.
2. Date and time of sampling.
3. Date and time of analysis were started and completed, and the name of personnel performing each analysis.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Chromatographs and calculation of results.
6. A complete chain of custody logs.
7. Results of analysis, and the MDL and PQL for each analysis.

F. Release Indication and Re-Test Procedure

An exceeded concentration limit is an indication of release. In cases where the MDL is the concentration limit, at least two MDLs or a single PQL excursion at a single monitoring point indicates a release. If a release is indicated, the Re-Test Procedure shall immediately be carried out as follows:

1. In the event the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the appropriate reporting requirements and, within 30 days of receipt of analytical

results, collect two new sets of samples for the indicated Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per Monitoring Point as were used for the initial test.

2. Analyze each of the two suites of re-test analytical results using the same statistical method (or non-statistical comparison) that provided the tentative indication of a release. If the test results of either (or both) of the re-tested data suites confirm the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the appropriate requirements.
3. Re-tests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Monitoring Parameter(s) which triggered the indication. When a VOC analyte is re-tested the results of the entire VOC test method analyzed shall be reported.

#### IV. DATA EVALUATION METHODS

In order to determine if any new releases have occurred from the Landfill, evaluation of data will be conducted using statistical and non-statistical methods.

##### A. Performance Standards

All data analysis methods (statistical or nonstatistical) shall meet the requirements of California Code of Regulations, title 27, section 20415, subdivision (e)(9).

##### B. Retest Is Part Of The Method

In the event that an approved data analysis method provides a preliminary indication that a given MPar has exhibited a measurably significant increase at a given well, the discharger shall conduct a verification procedure in the form of a discrete retest, in accordance with California Code of Regulations, title 27, section 20415, subdivision (e)(8)(E). The retest is part of the data analysis method; therefore, a measurably significant increase exists only if either or both of the retest samples validates the preliminary indication.

##### C. Limited Retest Scope

For any given groundwater monitoring point, the discharger shall perform the verification procedure only for those MPar's that have shown a preliminary indication at that well during that reporting period.

D. Non-statistical analysis:

1. Physical Evidence

Physical evidence can include vegetation loss, soil discoloration, unexplained volumetric changes in the Landfill, or groundwater mounding. Each Quarterly report shall comment on these physical elements.

2. Time Series Plots

Each Quarterly report shall include a time series plot for each constituent analyzed for and detected. Evidence of a release may include trends of increasing concentrations of one or more constituents over time.

V. REPORTING REQUIREMENTS

A. Scheduled Reports To Be Filed With The Water Board

The following periodic reports shall be submitted to the Water Board as specified below:

1. Monitoring Reports

Monitoring reports shall be submitted to the Water Board on a semi-annual basis as described in Table 1 and summarized in this MRP. Reports shall be submitted to the Water Board by **45 days** following the end of the period for which the monitoring was performed. The reports will include, but not limited to, the following:

- a. Tabulated water level and groundwater chemistry data, including historic and current monitoring events;
- b. A map illustrating all of the monitoring points, groundwater contours and flow direction;
- c. Results of sampling and laboratory analysis of groundwater, soil pore liquids and/or soil gas;
- d. Field monitoring sheets and well sampling data sheets;
- e. A letter summarizing the essential points in each report shall accompany each report. The letter shall include a discussion of

any violations of the waste discharge requirements found since the last report was submitted, and shall describe actions taken or planned for correcting those violations;

- f. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting this schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal; and

## 2. Annual Monitoring Reports

Annual Monitoring Reports shall be submitted to the Water Board. Annual Reports shall be submitted to the Water Board by **March 30** of each year. The reports shall contain the following:

- a. Time series data plots of the past 2 years of analytical data.
- b. The Annual Report shall also include an evaluation of the EMP and propose any modifications necessary to improve the EMP.

## 3. Five-Year COC Monitoring Program

Pursuant to California Code of Regulations, title 27, section 20420, subdivision (g), every five years the Discharger shall sample for COCs in accordance with **Part II.C.1.d**, with successive direct monitoring efforts being carried out alternately during January 1 through June 30 of one 5-year sampling event and July 1 through December 31 of the next 5-year sampling event, and every fifth year, thereafter. The first 5-Year COC sampling event shall take place during July-December 31 of 2010. The 5-Year COC Report shall be submitted no later than **45 days** following the period.

## B. Unscheduled Reports To Be Filed With The Water Board

The following reports shall be submitted to the Water Board as specified below:

### 1. Notice of Tentative Release

Should the statistical or non-statistical data analysis indicate, for a given constituent of concern, that a new release is tentatively identified, the Discharger shall:

- a. Immediately notify the Water Board verbally as to the monitoring point(s) and constituent(s) or parameter(s) involved.

- b. Provide written notification by certified mail within seven days of such determination. (Cal. Code Regs., tit. 27, § 20420. The notification should indicate the Discharger's intent to conduct verification sampling, initiate evaluation monitoring procedures, or demonstrate that a source other than the Landfill is responsible for the release. The notification should include a map showing the location(s) of release, an estimate of the flow rate (if available), a description of the nature of the discharge (e.g., all-pertinent observations and analyses), and corrective measures underway or proposed.
- c. If the Discharger chooses to attempt to demonstrate that a source other than the Landfill is responsible for the new release, the Discharger shall submit a supporting technical report within 90 days of detection of the new release.

2. Evaluation Monitoring

The Discharger shall, within 90 days of verifying a new release, submit a technical report pursuant to Water Code section 13267, subdivision (b) proposing a revised EMP. If the Discharger decides not to conduct verification procedures, or decides not to make a demonstration that a source other than the Landfill is responsible for the new release, the new release will be considered verified.

3. Engineering Feasibility Study Report

The Discharger shall, within 180 days of verifying a new release, submit a Preliminary Engineering Feasibility Study (California Code of Regulations, title 27, section 20420) to preliminarily propose methods for corrective action.

4. Groundwater Monitoring Well Logs

Pursuant to California Code of Regulations, title 27, section 20415, subdivision (e)(2), all monitoring wells and all other borings (including but not limited to gas monitoring wells) drilled to satisfy the requirements of this Monitoring and Reporting Program shall be drilled by a licensed drilling contractor (or by a drilling crew under the direct supervision of the design engineer or engineering geologist), and shall be logged during drilling under the direct supervision of a person who is a California registered geologist or licensed civil engineer, who has expertise in stratigraphic well logging. These logs shall be submitted to the Water Board and to the Department of Water Resources (DWR) within 90 days after well construction.

5. Significant Earthquake Event

After a significant earthquake event, the Discharger shall notify the Water Board within 48 hours, and within 45 days submit to the Water Board a detailed written post-earthquake report describing any physical damages to the containment features, groundwater monitoring or landfill gas monitoring wells. The Discharger shall closely examine the Landfill cover, vegetative cover, slope conditions, drainage control system, and surface grading for signs of cracking or depresses/settled areas, following a major earthquake. If cracking or depressed areas of the cover is identified, the Discharger shall repair the cover, depressed area, or damaged areas within 30 days from the earthquake date.

V. REPORTING

A. General Provisions

The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached (Attachment "B") to and made part of this Monitoring and Reporting Program.

B. Water Quality Protection Standards

By **November 15, 2006**, the Discharger must submit an updated Water Quality Protection Standard for the site.

C. Financial Assurance

Included with the Annual Report on or before **March 30** every year the Discharger shall submit an annual financial assurance report to the Water Board. This report shall summarize the amount of money available in the fund for Closure, Post Closure and Corrective Action Monitoring. This report should also provide a demonstration that the amount of financial assurance is adequate, or the need to increase the amount of financial assurance based on inflation or other factors. The report must reference the most recent plans that form the basis of cost estimates. A detailed evaluation of those costs must be made. A signed statement must be provided, under perjury, by an official of the company that the costs are adequate.

D. Summary of Reporting Frequency

Reports required by this MRP are listed in table below

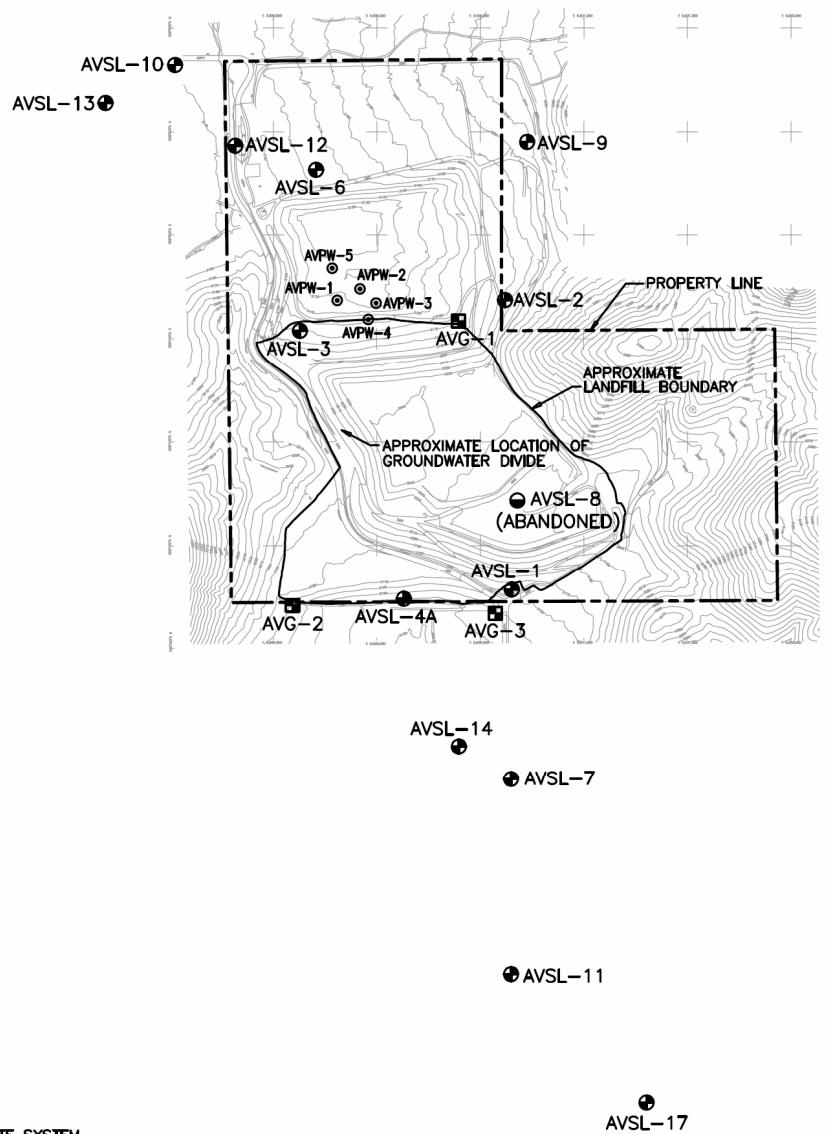
<u>Report Designation</u>	<u>Monitoring Period</u>	<u>Submittal Date</u>
1st Semester of year Monitoring Report (includes Winter & Spring monitoring)	Jan 1 - March 31 April 1 – June 30	August 15
2nd Semester of year Monitoring Report (includes Summer & Fall monitoring)	July 1 – Sept 30 Oct 1 – Dec 31	February 15
Annual Facility Inspection		November 15
Annual Monitoring*	Jan 1 – Dec 31	March 30
Annual Cover Performance*	Jan 1 – Dec 31	March 30
Financial Assurance Report*	Jan 1 – Dec 31	March 30

\* may be combined in one report

Ordered by: \_\_\_\_\_  
"Original Signed by"  
HAROLD J. SINGER  
EXECUTIVE OFFICER

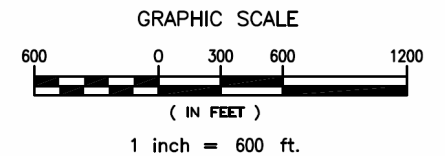
Dated: September 14, 2006

Attachments: A. Monitoring Point Locations  
B. General Provisions for Monitoring and Reporting



**EXPLANATION:**

- AVSL-2 GROUNDWATER MONITORING WELL LOCATION
- AVG-2 SOIL-PORE GAS MONITORING PROBE LOCATION
- CAP WELL LOCATION
- ABANDONED WELL LOCATION



**REFERENCE:**  
SAN BERNARDINO COUNTY WASTE SYSTEM  
DIVISION, CAD MAP AS OF NOVEMBER 1997.

**FIGURE 1**

**MONITORING POINTS LOCATION MAP**

**APPLE VALLEY SANITARY LANDFILL**  
**COUNTY OF SAN BERNARDINO, CA**

	<b>GeoLogic Associates</b>	
	<small>Geologists, Hydrogeologists, and Engineers</small>	
DRAWN BY: VL	DATE: APRIL 2006	JOB NO. 2005-140



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LAHONTAN REGION

**GENERAL PROVISIONS**  
FOR MONITORING AND REPORTING

1. SAMPLING AND ANALYSIS

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
  - i. Standard Methods for the Examination of Water and Wastewater
  - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

## 2. OPERATIONAL REQUIREMENTS

### a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

### b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

## 3. REPORTING

- a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.
- b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.
- d. Monitoring reports shall be signed by:
  - i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;
  - ii. In the case of a partnership, by a general partner;
  - iii. In the case of a sole proprietorship, by the proprietor; or

- iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
  - i. Name and telephone number of individual who can answer questions about the report.
  - ii. The Monitoring and Reporting Program Number.
  - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

#### 4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

x:PROVISIONS WDRS

file: general pro mrp