

CALIFORNIA REGIONAL WATER QUALITY CONTROL REGIONAL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0114

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF TULARE
FOR
CLOSURE AND POSTCLOSURE MAINTENANCE
EXETER SOLID WASTE LANDFILL
TULARE COUNTY

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

1. The County of Tulare (hereafter Discharger) owns an inactive solid waste landfill about 3.3 miles south of Exeter, in Section 34, T19S, R26E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. The existing waste management facility consists of one existing unlined waste management unit (Unit) covering 34 acres as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Number (APN) 153-210-051.
3. On 16 June 2000, the Regional Board issued Order No. 5-00-161, in which the facility was classified as a Class III waste disposal site for the discharge of municipal solid waste in accordance with Title 27, California Code of Regulations (CCR), Section 20005, et seq. The site and waste classification remain the same for this Order. Revised waste discharge requirements are needed to include requirements for an Evaluation Monitoring Program.
4. The Discharger ceased discharge in September 1989 and does not plan to expand the existing Unit or construct additional Units.

SITE DESCRIPTION

5. The Exeter Landfill is located on the westward dipping, eastern limb of the asymmetrical geosynclinal trough of the San Joaquin Valley. Sediments ranging in age from Jurassic to Holocene fill the geosynclinal trough. The site overlies a basement complex of pre-Tertiary age metasediments, plutonics, and ultramafics. Sequentially overlying the basement complex are approximately 1,000 to 3,500 feet of consolidated and unconsolidated Tertiary marine deposits, continental deposits, and unconsolidated Quaternary alluvium. Of significance to the site are the Quaternary age younger and older alluviums. The older alluvium ranges from Pleistocene to Recent in age and consists of interbedded gravel, sand,

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and silty-sand. The younger alluvium consists of moderately to highly permeable, interbedded fluvial deposits of gravelly-sand, silty-sand, silt, and clay. The younger alluvium is generally situated above the saturated zone.

6. The measured hydraulic conductivity of the native soils underlying the Unit ranges between 7×10^{-4} and 5×10^{-5} cm/sec.
7. The Unit is not within a fault hazard zone. The closest Holocene faults are approximately 15 to 20 miles to the southeast near Lake Success. Recorded magnitudes of seismic events along these faults range between 4.5 and 4.9. The Coalinga Nose Fault, used to calculate the peak ground acceleration for the design of the Unit's containment structures, is approximately 68 miles northwest of the facility. The seismic event along the Coalinga Nose Fault has a recorded magnitude of 6.7 and is considered to be the maximum probable earthquake associated with the Unit. The ground maximum acceleration associated with the maximum probable earthquake is estimated to be 0.03 g.
8. Land within 1,000 feet of the Unit is used mainly for agriculture. Land to the west and southeast of the Unit was previously used by the City of Lindsay for the discharge of olive processing brine water. Discharge of olive processing brine water to the West Side and East Side Brine Ponds ceased in 1992, and the brine ponds are currently regulated by Waste Discharge Requirements, Order No. 87-054.
9. The Unit receives an average of 9.4 inches of precipitation per year as measured at the Lindsay Station. The mean pan evaporation is 80.5 inches per year as measured at the Delano and Fresno Stations.
10. The 100-year, 24-hour precipitation event is estimated to be 3.38 inches, based on observations at the Exeter Station
11. The waste management facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 065066, Panel 675. The facility is within the Lewis Creek floodplain and within a B Zone Federal Insurance Rate Map designated area. Areas designated as B Zones are areas between the limits of the 100-year flood and the 500-year flood.
12. There are 13 domestic, one municipal supply, two dairy supply, and 7 agricultural groundwater supply wells within one mile of the Unit. Some of the 13 domestic supply wells may not be active since some of the domestic dwellings have been placed on a municipal water supply system. Some of the domestic supply wells and agricultural supply wells may not be active as a result of groundwater degradation due to previous olive processing operations at the City of Lindsay's West Side and East Side Brine Ponds. No

surface springs or other sources of groundwater supply have been observed. A well possibly used for domestic purposes (well I.D. 19S/26E-34P1) is about 500 feet from the southeast corner of the Unit, but may be inactive due to groundwater degradation associated with the previous olive processing operations.

WASTE AND SITE CLASSIFICATION

13. Municipal solid wastes, which are defined in Title 27 CCR Section 20164, were discharged until September 1989.
14. The site characteristics where the Unit is located (see Finding No. 6) do not meet the siting criteria for a Class III landfill contained in Title 27 CCR Sections 20260(a) and (b)(1). As such, the site is not suitable for operating new Units or lateral expansions of existing Units for the discharge and containment of Class III wastes as described in Finding No.13, without the construction of additional waste containment features in accordance with Title 27 CCR Section 20260(b)(2) and State Water Resources Control Board Resolution No. 93-62, Policy for Regulation of Discharges of Municipal Solid Waste.

SURFACE AND GROUND WATER CONDITIONS

15. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (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 Elk Bayou which is a tributary to the Tule River in the Kaweah Delta Hydrologic Area (558.10) of the Tulare Lake Basin.
17. The designated beneficial uses of the Tule River, as specified in the Basin Plan, are municipal, agricultural, industrial service and industrial process supply; water contact and non-contact water recreation; warm fresh water habitat; preservation of rare, threatened and endangered species; and groundwater recharge.
18. The first encountered groundwater currently ranges from 49 feet below ground surface (bgs) at monitoring well M-11 to 44 feet bgs at monitoring well M-6A. Groundwater elevations range from 284.3 feet MSL at monitoring well M-3B to 288.6 feet MSL at monitoring well M-6A. In 1998, groundwater was as high as 20 feet bgs (315 feet MSL) along the northwestern boundary of the Unit. The groundwater is unconfined. The depth to groundwater generally fluctuates between 5 and 7 feet on a seasonal basis, but in rare occasions the depth to groundwater may fluctuate as much as 20 feet in the northernmost monitoring wells due to heavier than normal storm water flows in Lewis Creek.

19. Monitoring data indicates that current background groundwater quality has a specific electrical conductivity (EC) ranging between 1,488 and 3,000 micromhos/cm, with Total Dissolved Solids (TDS) ranging between 930 and 1,700 mg/l.
20. The direction of groundwater flow is toward the west. The direction of groundwater flow varies seasonally and periodically flows between S20°W and S70°W. The average groundwater gradient is approximately 0.004 feet per foot. The average groundwater velocity is 1.1 feet per year.
21. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial service and process supply.

GROUNDWATER MONITORING

22. A total of sixteen monitoring wells have been installed around the perimeter of the facility (see Attachment B). The current groundwater detection monitoring system consists of downgradient wells M-11, M-3B, M-7, M-8A, and M-5 and background groundwater monitoring wells M-2A and M-6A. The remaining monitoring wells, when not dry, are used as piezometers or are proposed to be substituted for the current downgradient and background wells as the water table either rises or falls.
23. The surface water detection monitoring system consists of two monitoring points, a background location on Lewis Creek north of the facility and a downgradient location on Lewis Creek immediately northwest of the northwest corner of the facility (see Attachment B).
24. A vadose zone detection monitoring system consists of seven vadose zone gas monitoring wells (see Attachment B).
25. The Discharger's Detection Monitoring Program for groundwater at this Unit satisfies the requirements contained in Title 27 CCR.
26. Volatile organic compounds (VOCs) are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill (see Finding Nos. 31 and 32). Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 CCR for the determination of a release of wastes from a Unit.
27. Title 27 CCR 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 CCR Section 20415(b)(1)(B)2.-4. However, Title 27 CCR does not specify a specific method for non-statistical evaluation of monitoring data.

28. The Regional Board may specify a non-statistical data analysis method pursuant to Title 27 CCR Section 20080(a)(1). California Water Code Section 13360(a)(1) allows the Regional Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
29. 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.
30. 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 waste constituents from a Unit. The presence of two waste constituents above their respective method detection limit (MDL), or one 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 waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two 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 waste constituent above its MDL as a trigger.

GROUNDWATER AND SURFACE WATER DEGRADATION

31. The 1988 Solid Waste Water Quality Assessment Test (SWAT) detected the non-naturally occurring waste constituents: tetrachloroethylene (PCE); vinyl chloride; methylene chloride; trichloroethylene (TCE); 1,1-dichloroethane (1,1-DCA); 1,2-dichloroethane (1,2-DCA); 1,2-dichloroethylene (1,2-DCE); chloroform; 1,2-dichloropropane; 1,4-dichlorobenzene; benzene, toluene, xylene; and naphthalene. Methylene chloride, PCE, TCE, vinyl chloride; and benzene were detected above their respective Department of Health Services Action Levels established at the time of the SWAT investigation. Naturally occurring waste constituents that appeared to exceed their respective background levels include: bicarbonate; chloride; sodium; magnesium; alkalinity; hardness; specific conductance (EC); total dissolved solids (TDS); and chromium. Chromium exceeded the U.S. EPA Primary Maximum Contaminant Level.

32. Subsequent groundwater detection monitoring from 1991 through 2002 detected the non-naturally occurring waste constituents PCE; methylene chloride; 1,1,1-TCA; TCE; vinyl chloride; benzene; 1,1-DCE, dichlorodifluoromethane (CFC-11); dichlorofluoromethane (CFC-21); trichlorofluoromethane (CFC-; chloroform; 1,4-dichlorobenzene; 1,2-dichlorobenzene; chlorobenzene; 1,1-DCA; 1,2-DCA; trans-1,2-DCE; toluene; xylene; chloroethane; chloromethane; 1,2-dichloropropane; and cis-1,2-DCE. Benzene; PCE; 1,1-DCE; TCE; 1,1-DCA; 1,2-DCA; and vinyl chloride have been detected at concentrations exceeding their respective Primary Maximum Contaminant Levels.
33. Statistical analysis of naturally occurring inorganic waste constituents during the Second Quarter of 2002 determined that barium; bicarbonate; calcium; cobalt; iron; magnesium; sodium; sulfate; and TDS exceeded their respective background concentrations.
34. Surface water detection monitoring during the First Quarter of 1998, detected iron in the landfill surface runoff water at a concentration exceeding the background concentration and in excess of its Secondary Maximum Contaminant Level. Surface water runoff from the facility drains to Lewis Creek.
35. The Discharger has not established and implemented an Evaluation Monitoring Program (EMP).

EVALUATION MONITORING PROGRAM

36. "Pollution" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects: (1) such waters for beneficial uses, or (2) facilities which serve such beneficial uses [California Water Code Section, 13050(1)]. Water quality objectives are levels of constituents that are established for the reasonable protection of beneficial uses of waters. Exceedance of water quality objectives, including Maximum Contaminant Levels (MCLs) as established by the Department of Health Services, constitutes pollution.
37. California Water Code Section 13304(a) states in part:

"Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action"

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38. California Water Code Section 13267(b)(1) states:

“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 proposes to discharge waste 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 report and the benefits to be obtained from the reports. In requiring those reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

The reports required pursuant to California Water Code Section 13267 are necessary to enable the regional board to ascertain whether the Discharger is in compliance with this order.

39. Detection monitoring of the first encountered groundwater zone has detected numerous non-naturally occurring waste constituents along the Point of Compliance including: PCE; methylene chloride; 1,1,1-TCA; TCE; vinyl chloride; benzene; 1,1-DCE, dichlorodifluoromethane (CFC-11); dichlorofluoromethane (CFC-21); trichlorofluoromethane (CFC-12); chloroform; 1,4-dichlorobenzene; 1,2-dichlorobenzene; chlorobenzene; 1,1-DCA; 1,2-DCA; trans-1,2-DCE; toluene; xylene; chloroethane; chloromethane; 1,2-dichloropropane; and cis-1,2-DCE. Benzene; PCE; 1,1-DCE; TCE; 1,1-DCA; 1,2-DCA; and vinyl chloride have been detected at concentrations exceeding their respective Primary Maximum Contaminant Levels. Statistical analysis of naturally occurring waste constituents has determined that barium; bicarbonate; calcium; cobalt; iron; magnesium; sodium; sulfate; and TDS exceeded their respective background concentrations at Point of Compliance wells.
40. As part of the work to complete the Evaluation Monitoring Program, the Discharger collected and analyzed groundwater samples from the City of Lindsay monitoring wells on Mr. Rob Hilarides property west of the Unit in November 2000. The analytical results detected PCE at 5 µg/l and low concentrations of other VOCs in City of Lindsay monitoring well M-20 located approximately 1,500 feet west/southwest of the southwestern corner of the Unit. City of Lindsay monitoring well M-20 was constructed to monitor unconfined groundwater beneath the closed City of Lindsay agricultural wastewater disposal pond west of the Unit. City of Lindsay monitoring well M-20 was sampled by the Regional Board in October 2002 and the results detected 4.7 µg/l of PCE and 1.8 µg/l of CFC-11. Available information also indicates that 0.52 µg/l of 1,1-DCA was detected in City of Lindsay monitoring well M-15 in March 2001 and that 0.60 µg/l of 1,1-DCA was detected in the same well in July 2001. City of Lindsay monitoring well M-15 is

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approximately 2,500 feet due west of the northwestern corner of the Unit. CFC-11, 1,1-DCA, and PCE are VOCs that have been detected in the Unit's Point of Compliance wells. Based on the detections of VOCs in City of Lindsay monitoring wells M-20 and M-15, it appears that the lateral extent of VOCs in groundwater may be at least 1,500 feet southwest and 2,500 feet west of the Unit.

41. At least some of the groundwater degradation at the Point of Compliance was caused by a release (discharge of waste) from the Unit.
42. The current plume of degraded groundwater creates or threatens to create a condition of pollution or nuisance.
43. California Water Code Section 13304 requires dischargers to cleanup waste and abate the effects of waste. Cleanup and abatement measures include corrective action measures as required under Title 27 CCR.
44. The nature and lateral and vertical extent of groundwater degradation has not been determined in the unconfined groundwater zone.
45. In a 27 January 1988 letter, the Regional Board required the Discharger to submit a work plan to define the lateral and vertical extent of groundwater degradation and to implement remedial measures for cleaning up groundwater. The Discharger submitted a work plan for five Tulare County-owned Class III landfills, including the Exeter Landfill, in 1990. Regional Board staff reviewed the work plan and in a 31 October 1990 letter, required the Discharger to submit a work plan and time schedule for determining the source(s) of degradation and the lateral and vertical extent of groundwater degradation for the Exeter Landfill by 1 April 1991. The Discharger submitted a report in December 1991 that discussed some work that had been implemented toward the Evaluation Monitoring Program.

In April 1995, the Discharger submitted a "conceptual EMP report". In May 1995, the Discharger submitted an Engineering Feasibility Study (EFS). Regional Board staff reviewed the Discharger's April 1995 and May 1995 reports and in a 13 July 1995 letter, required the Discharger to submit a proposed time schedule for submitting the results of an EMP and an updated EFS for corrective action by 14 August 1995. On 5 January 2000, a meeting between Regional Board staff and the Discharger was held to discuss in part, the implementation of the EMP. The Discharger stated at the meeting that it would contact the City of Lindsay regarding the use of some of its groundwater monitoring wells west, southwest, and south of the Unit for evaluation monitoring purposes. In September 2000, the Discharger obtained permission from the City of Lindsay to sample its monitoring wells in and around the closed City of Lindsay agricultural wastewater disposal pond west of the

Unit. The Discharger also obtained permission from Mr. Rob Hilarides, who had recently purchased the closed City of Lindsay agricultural wastewater disposal pond west of the Unit, to conduct groundwater sampling.

Groundwater sampling and analysis of City of Lindsay monitoring wells on Mr. Rob Hilarides' property was conducted in November 2000 and a report of with the results of the sampling event were submitted to the Regional Board in November 2001. The analytical results detected PCE at 5 µg/l and low concentrations of other VOCs in City of Lindsay monitoring well M-20 located approximately 1,500 feet west/southwest of the southwestern corner of the Unit (see Finding 40). The Discharger sought permission in August 2002 to sample the City of Lindsay monitoring wells again. The City of Lindsay gave the Discharger permission, but permission was denied by Mr. Rob Hilarides.

The Discharger is currently under contract with Malcolm Pirnie, Inc., to conduct work to complete the Evaluation Monitoring Program for the site.

46. This Order requires the Discharger to complete an Evaluation Monitoring Program, submit an Engineering Feasibility Study for corrective action, and submit a Report of Waste Discharge for a Corrective Action Program in accordance with the requirements of Title 27 CCR and the time schedule incorporated into this Order. The Discharger is also required to submit semi-annual status reports to the Regional Board describing the progress of the Evaluation Monitoring Program and all activities conducted to complete the Evaluation Monitoring Program.

CONSTRUCTION AND ENGINEERED ALTERNATIVE

47. Title 27 CCR Section 21090 requires that closed landfills be provided with a cover system that consists of a minimum of two feet of appropriate materials as a foundation layer for the final cover; a barrier layer which consists of no less than one foot of soil on top of the foundation layer, which is compacted to attain a hydraulic conductivity of 1×10^{-6} cm/sec or less; and a soil cover not less than one foot thick on top of the barrier layer.
48. California Water Code Section 13360(a)(1) allows the Regional 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.
49. The Discharger submitted a design plan for the proposed closure of the Exeter Landfill in Preliminary Closure and Postclosure Maintenance Plans dated July 1996. The design tentatively proposed the construction of the prescriptive standard final cover system specified in Title 27 CCR Section 21090. The Discharger also proposed to investigate the

use of engineered alternative barrier layers in the final cover system and stated that a final cover system will be proposed in the Final Closure and Postclosure Maintenance Plans.

50. The Discharger submitted Final Closure and Postclosure Maintenance Plans on 13 February 2001.
51. The Final Closure and Postclosure Maintenance Plans were reviewed for completeness, and in a 15 March 2001 letter, Regional Board staff informed the Discharger that additional information was needed to complete the Final Closure and Postclosure Maintenance Plans and for an adequacy review to be performed.
52. The final cover system tentatively proposed by the Discharger in the Final Closure and Postclosure Maintenance Plans consists of, in ascending order: a two-foot thick foundation layer compacted to the maximum density obtainable at optimum moisture content; a geosynthetic clay liner (GCL) with a hydraulic conductivity of 1×10^{-6} cm/sec or less; and a two-foot thick vegetative cover layer.
53. Title 27 CCR Section 20080(b) allows the Regional 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 CCR Sections 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 CCR Section 20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger has demonstrated that the proposed engineered alternative cover system 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 Title 27 CCR Section 20080(b)(2).
54. Construction of the final cover will proceed only after all applicable Construction Quality Assurance Plans (CQA Plans) have been approved by Executive Officer.
55. The projected closure date of the Unit is 31 December 2004.

CEQA AND OTHER CONSIDERATIONS

56. Since the Unit: is unlined (see Finding No. 2) and does not meet the siting criteria for a Class III landfill (see Finding No.14); has been inactive for over 12 years (see Finding No. 4); and has released waste constituents to groundwater (see Finding Nos. 31 and 32), the Regional Board finds that the discharge of waste to this unlined leaking Unit is not in

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the public's interest. Therefore, these waste discharge requirements require the Discharger to close the landfill by a specified date.

57. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA regulations, in accordance with Title 14, CCR, Sections 15301.
58. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations (CFR), Parts 257 and 258, "federal municipal solid waste [MSW] regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste is discharged. Subtitle D Section 258.1(c) states that Subtitle D regulations do not apply to municipal solid waste landfills that do not receive waste after 9 October 1991. The facility ceased discharge in September 1989. Therefore, the provisions of Subtitle D do not apply to this Unit.
59. This order implements:
 - a. The Water Quality Control Plan for the Tulare Lake Basin, Second Edition;
 - b. The prescriptive standards and performance goals of Title 27, CCR, Division 2, Subdivision 1, Chapters 1 through 7, effective 18 July 1997 and subsequent revisions;
60. 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 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 who proposed to discharge waste outside of its region that could affect the quality of waters 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 report and the benefits to be obtained from the reports..." The monitoring and reporting program required by this Order and the attached "Monitoring and Reporting Program No. R5-2003-0114" are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

61. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
62. The Regional 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.
63. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
64. Any person affected by this action of the Regional Board may petition the State Water Resources Control Regional Board to review the action in accordance with Title 23 California Code of Regulations (CCR), Sections 2050 through 2068. 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.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to California Water Code Sections 13263 and 13267, that Order No. 5-00-161 is rescinded and that the County of Tulare, 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 waste to this Unit is prohibited.

B. DISCHARGE SPECIFICATIONS

1. The discharge shall remain within the designated disposal area at all times.

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 Regional 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 containment facilities or precipitation and drainage control structures.
3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, and construction.
4. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
5. 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, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
6. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
7. 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.
8. Cover materials shall be graded to divert precipitation from the Unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation.

D. CONSTRUCTION SPECIFICATIONS

1. **By 15 July 2003**, the Discharger shall revise the Final Closure and Postclosure Maintenance Plans to include:
 - a. A Compliance Period;
 - b. A revised CQA Plan that includes appropriate test methods, acceptance criteria, and testing for MQA and CQA for the GCL; and
 - c. A stability analysis of the final cover system that was performed under static conditions in accordance with Title 27 CCR Section 21750(f)(5)(A).

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2. Materials used to construct the cover system shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the closure and postclosure maintenance period of the Unit.
3. The Discharger shall submit for review and approval by the Executive Officer **prior to** construction, design plans and specifications for the cover system that include the following:
 - a. A Construction Quality Assurance Plan meeting the requirements of Title 27 CCR Section 20324; and
 - b. A geotechnical evaluation of the area soils, evaluating their use as the foundation layer.
4. The cover system shall be constructed in accordance with one of the following cover designs:
 - a. The prescriptive standard design that consists of a lower soil foundation layer that is a minimum of two feet thick and has a minimum relative compaction of 90%. Immediately above the foundation layer, shall be a compacted soil barrier that is a minimum of one foot thick with a maximum hydraulic conductivity of 1×10^{-6} cm/sec and a minimum relative compaction of 90%. Above the barrier layer shall be a soil vegetative cover layer that is a minimum of one foot thick; or
 - b. An engineered alternative composite cover system that is comprised, in ascending order, of the following:
 - 1) A two-feet thick engineered foundation layer comprised of soils compacted to a minimum relative compaction of 90%;
 - 2) A geosynthetic clay liner (GCL) that exhibits appropriate strength characteristics to accommodate stresses associated with the specific cover design parameters; and
 - 3) A two-feet thick vegetative cover layer that meets the Title 27 CCR closure regulations.
5. The Discharger may propose changes to the cover system design prior to the construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed cover

- system results in the protection of water quality equal to or greater than the design prescribed by Title 27 CCR and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Regional Board.
6. If a prescriptive standard soil barrier layer is used in the final cover system, then the hydraulic conductivities for the soil barrier layer determined through laboratory methods shall be confirmed by a Sealed Double-Ring Infiltrometer (SDRI) field test, or an equivalent field test method approved by the Executive Officer. Test pad construction methods, quality assurance/quality control procedures, and testing shall be in accordance with the construction quality assurance plan approved by the Executive Officer and shall be sufficient to ensure that all parts of the cover meet the hydraulic conductivity and compaction requirements.
 7. If the Discharger constructs a final cover system that includes a GCL, the underlying soil layer shall be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.
 8. Hydraulic conductivities of cover materials shall be determined by laboratory tests using water. Hydraulic conductivities determined through laboratory methods shall be confirmed by field testing in accordance with the Standard Provisions and Reporting Requirements, Construction Specifications VIII.J.
 9. Following the completion of construction of the cover system, a construction report shall be submitted for Executive Officer 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 CCR. The cover construction report shall include as a minimum, but not be limited to, the following:
 - a. Test results on the chemical and geotechnical properties of materials used in the cover system, as specified in these waste discharge requirements.
 - b. Test results on the hydraulic conductivity of the cover system
 - c. Construction quality assurance and quality control procedures and results for all aspects of cover system construction.

10. Construction shall proceed only after all applicable construction quality assurance plans and a slope stability analysis for the engineered final cover system described in Construction Specification D.3.b., have been approved by the Executive Officer.
11. The CQA Program shall be supervised by a registered civil engineer or certified engineering geologist who shall be designated the CQA officer. The CQA officer and personnel performing monitoring and testing shall be independent of the construction contractor and the Discharger.

E. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the Detection Monitoring Program provisions of Title 27 CCR for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. R5-2003-0114.
2. The Discharger shall provide Regional Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, abandonment of monitoring devices, or the collection of samples associated with a Detection Monitoring Program, Evaluation Monitoring Program, or Corrective Action Program.
3. The Discharger shall comply with the Water Quality Protection Standard (as defined in Title 27 CCR Section 20390) which is specified in Monitoring and Reporting Program No. R5-2003-0114 and the Standard Provisions and Reporting Requirements, dated April 2000.
4. The Water Quality Protection Standard for organic compounds which are not naturally occurring shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8260 and 8270). The presence of non-naturally occurring organic compounds in samples from detection monitoring wells is evidence of a release from the Unit.
5. 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. R5-2003-0114.
6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2003-0114 and Title 27 CCR Section 20415(e).

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7. 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.
8. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) "Methods for Organic Chemical Analysis of Municipal and Industrial 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," and in accordance with an approved Sample Collection and Analysis Plan.
9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer.
10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
11. **"Trace" results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. **The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, 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.
15. **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.
16. 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 Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7) shall consider the PQLs listed in Title 22 CCR, Division 4.5, Chapter 14, Appendix IX, for guidance when specifying limits of precision and accuracy in the waste discharge requirements. 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

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set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

17. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval 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). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
18. The Discharger shall use the following nonstatistical method specified in Detection Monitoring Specification E.19 for all constituents which are not amenable to the statistical tests above (i.e., less than 10% of the data from background samples 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 or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval by the Executive Officer.

19. The nonstatistical method (for non-naturally occurring waste constituents) 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 CCR Section 20415(e)(8)(E)]:

- 1) In the event that the Discharger concludes (pursuant to paragraph 19.a., above) that there is a preliminary indication, then the Discharger shall immediately notify Regional 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 19.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 ¶19.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).

20. If the Executive Officer determines, after reviewing the submitted report, that the detected VOC(s) most likely originated from the Unit(s), the Discharger shall **immediately** implement the requirements of XI. Response To A Release, C. Release

Has Been Verified, contained in the Standard Provisions and Reporting Requirements.

F. EVALUATION MONITORING SPECIFICATIONS

1. **By 1 December 2004**, the Discharger shall complete an Evaluation Monitoring Program to the satisfaction of the Executive Officer and that meets the provisions of Title 27 CCR Section 20425(b), and a report shall be submitted that describes all actions and monitoring taken to complete the Evaluation Monitoring Program.
2. The Regional Board has identified the Discharger as the primary or active responsible discharger for purposes of California Water Code Section 13307.1. **By 15 June 2003**, the Discharger shall submit a letter to the Regional Board that identifies all current record owners of fee title of the site. The Discharger shall certify to the Regional Board that the required notifications have been made at the time a cleanup or site closure proposal is made or before the Regional Board makes a determination that no further action is required. If property ownership changes in the future, the Discharger must notify the Regional Board **within 30 calendar days** of the date on which it is informed of the change. The Discharger, within 14 days of determining "measurably significant" evidence of a release, shall notify all persons who own the land or reside on the land that directly overlies any portion of the plume of contamination if contaminants have migrated off-site if indicated by sampling of detection monitoring wells [Title 40 CFR 258.55(g)(1)(iii)].
3. The Discharger shall submit a **semi-annual** status report to the Regional Board, in conjunction with Monitoring and Reporting Program No. R5-2003-0114, describing the progress of the Evaluation Monitoring Program and all activities conducted to complete the Evaluation Monitoring Program.
4. At a minimum, the following documentation is needed to complete the Evaluation Monitoring Program:
 - a. An analysis of all the information gathered to determine the lateral and vertical extent of each waste constituent released from the Unit. This assessment shall include a determination of the spatial distribution and concentration of each constituent of concern throughout the zone affected by the release.
 - b. An assessment of the lateral and vertical extent for each waste constituent in groundwater. For a non-naturally occurring waste constituent, the extent will be determined when groundwater sample analyses do not detect any non-naturally occurring waste constituents at or above the PQL, or no more than one non-

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naturally occurring waste constituent is detected at or above the MDL and below the PQL.

- c. A determination of the Water Quality Protection Standard for evaluation monitoring shall be based on a sufficient number of background monitoring points that represent the quality of groundwater (organic and inorganic compounds) in the uppermost aquifer that has not been affected by a release from the Unit in accordance with Title 27 CCR Sections 20415(b)(1) and 20415(b)(2). If more than one water-bearing zone is present beneath the Unit and included in the Evaluation Monitoring Program, then a Water Quality Protection Standard shall be established independently for each water-bearing zone.
 - d. A table listing the constituents of concern that includes the concentration limit for metals and general water quality parameters based on a statistical evaluation of the background concentrations of these parameters.
 - e. A description of how the determination of the spatial distribution and concentration of each constituent of concern throughout the zone affected by the release was accomplished.
5. By **1 June 2005**, the Discharger shall submit, pursuant to Title 27 Section 20425(c), a report containing an updated engineering feasibility study for corrective action pursuant to Title 27 CCR Section 20420(k)(6). At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.
 6. By **1 December 2005**, the Discharger shall submit, pursuant to Title 27 CCR Section 20425(d), an amended report of waste discharge, based on the data collected pursuant to Evaluation Monitoring Specification F. 4 and on the engineering feasibility study submitted pursuant to Evaluation Monitoring Specification F. 5, to establish a Corrective Action Program meeting the requirements of Title 27 CCR Section 20430, to cleanup and abate the effects of all waste discharged to the soil and groundwater.
 7. In conjunction with the assessment conducted pursuant to Evaluation Monitoring Specification F. 4, and while awaiting final approval of the amended report of waste discharge, submitted pursuant to Evaluation Monitoring Specification F. 6, the Discharger shall monitor groundwater to evaluate changes in water quality resulting from the release from the Unit. In conducting this monitoring, the Discharger shall comply with the requirements of Title 27 CCR Section 20425(e).

G. REPORTING REQUIREMENTS

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 Regional 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, shall describe the measures being taken to prevent recurrences, and shall include a timetable for corrective actions.
2. 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 for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Executive Officer.

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.
3. 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.

4. 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 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, 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 run-off/run-on control facilities.

- f. A summary and certification of completion of all **Standard Observations** for the Unit, for the perimeter of the Unit, and for the receiving waters. 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 odors: presence or absence, characterization, source, and distance of travel from source; and
 - c) 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 odors: presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion and/or of day-lighted refuse.
 - 3) For receiving waters:
 - a) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
 - b) Discoloration and turbidity: description of color, source, and size of affected area;
 - c) Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
 - d) Evidence of water uses: presence of water-associated wildlife;
 - e) Flow rate; and
 - f) Weather conditions: wind direction and estimated velocity, total precipitation during recent days and on the day of observation.

as “...the form necessary for...” statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Regional 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 map showing the area and elevations in which filling has been completed during the previous calendar year.
- e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.

H. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 CCR that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2003-0114, which is incorporated into and made part of this Order.
4. The Discharger shall comply with the applicable portions of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27*, which are hereby incorporated into and attached to 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:

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- 1) the authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - 3) the written authorization is submitted to the Regional 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.”
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 active life, closure, and postclosure maintenance period of the Unit and during subsequent use of the property for other purposes.
 8. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger’s violations of the Order.
 9. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional 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

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name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory requirements contained in Provision G.5. and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Board.

10. 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. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Regional 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.
11. The Discharger shall conduct an annual review of the financial assurance for closure and postclosure maintenance, and submit a report for Executive Officer review and approval. The assurances of financial responsibility shall provide that funds for closure and postclosure maintenance shall be available to the Regional 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.
12. 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. Final Closure Plans	
1) Submit a report containing revisions to the Final Closure and Postclosure Maintenance Plans (Construction Specifications D.1)	15 July 2003
2) Submit construction and design plans and specifications for Executive Officer review and approval. (see Construction Specification D.3)	Prior to construction

<u>Task</u>	<u>Compliance Date</u>
b. Construction Report Submit a construction report upon completion demonstrating construction was in accordance with approved construction plans for Executive Officer review and approval. (see Construction Specification D.9)	Following completion of construction of final cover system
c. Completion of Closure	31 December 2004
d. Evaluation Monitoring Program Complete an Evaluation Monitoring Program to the satisfaction of the Executive Officer and submit a report describing all actions and monitoring taken to complete the Evaluation Monitoring Program. (Evaluation Monitoring Specifications E.1.)	1 December 2004
e. Status Report Submit a status report to the Regional Board describing the Progress of the Evaluation Monitoring Program and all activities conducted to complete the Evaluation Monitoring Program. (Evaluation Monitoring Specification F.3)	Semi-annually, within 45 days of the end of the calendar year
f. Updated Feasibility Study Submit a report containing an updated engineering feasibility study for corrective action. (Evaluation Monitoring Specification F.5)	1 June 2005

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<u>Task</u>	<u>Compliance Date</u>
g. Amended Report of Waste Discharge	
Submit an amended report of waste discharge to Establish a Corrective Action Program. The report shall include a plan and proposed time schedule, for Executive Officer review and approval, to cleanup and abate the release of all waste constituents to soil and groundwater. (Evaluation Monitoring Specification F.6)	1 December 2005
h. Annual Monitoring Summary Report	
Submit an Annual Monitoring Summary Report to the Regional Board covering the reporting period of the previous monitoring year. (Reporting Requirement G.6)	By 31 January of each year
i. Financial Assurance Review	
1) Annual Review of Financial Assurance for initiating and completing corrective action (see Provision H.10.)	By 1 October each year
2) Annual Review of Financial Assurance for closure and postclosure maintenance (see Provision H.11.)	By 1 October each year

I, THOMAS R. PINKOS, 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 Regional Board, Central Valley Region, on 11 July 2003.

THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0114
FOR
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FOR
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Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations (CCR), 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 CCR*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2003-0114.

A. REQUIRED MONITORING REPORTS

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	See Table I
2. Annual Monitoring Summary Report (Order No. R5-2003-0114, G.6.)	Annually
3. Unsaturated Zone Monitoring (Section D.2)	See Table II
4. Surface Water Monitoring (Section D.3)	See Table III
5. Facility Monitoring (Section D.4)	As necessary
6. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2003-0114 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 G.6. Reporting Requirements, of Order No. R5-2003-0114.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional 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	Quarterly	Last Day of Month	by Semiannual Schedule
Quarterly	Quarterly	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

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in G. Reporting Requirements, of Order No. R5-2003-0114, and a discussion of compliance with the waste discharge requirements and the water quality protection standard.

The results of any monitoring conducted more frequently than required at the locations specified herein or by the waste discharge requirements shall be reported to the Regional Board.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Executive Officer shall review and approve the Water Quality Protection Standard, or any modification thereto, for each monitored medium.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27 CCR Section 20405.
- c. Evaluate the perennial 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.

2. 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 Table V. The Discharger shall monitor all

constituents of concern in Table V every five years, or more frequently as required in accordance with a Corrective Action Program.

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.

3. Concentration Limits

Pursuant to Title 27 CCR Section 20415(e)(10)(B), for each naturally occurring inorganic constituent of concern, the concentration limit (applicable suite of background data) for that constituent shall be redetermined each semiannual monitoring period according to the following “moving window” formula, and the Discharger shall use the resulting concentration limit to apply the parametric Interwell Upper Prediction Limit analysis method featured in the Sanitas™ for Groundwater statistical software package, unless the software indicates that a different method (e.g., the nonparametric version of the same method) is more appropriate. For each reporting period subsequent to the initial reporting period, the Discharger shall create the new concentration limit, for that constituent, by taking the prior reporting period’s background data, adding the newest datum, for that constituent, from background monitoring wells M-2A or M-2B and M-6A or M-6B and removing the oldest datum.

4. 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.

5. 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 CCR for groundwater, surface water, and the unsaturated zone, in accordance with Detection Monitoring Specification E.1 of Waste Discharge Requirements, Order No. R5-2003-0114. 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 point of compliance 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, unsaturated zone monitoring devices, leachate (seepage), and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through III.

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 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 install and operate a groundwater detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 of in accordance with a Detection Monitoring Program approved by the Executive Officer. 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 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.

A groundwater contour map and tabular data for 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. The

groundwater contour map and the tabular data shall be prepared quarterly and submitted semi-annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as 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 annually with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table V every five years.

2. Unsaturated Zone Monitoring

The Discharger shall install and operate an unsaturated zone detection monitoring system that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 in accordance with a detection monitoring plan approved by the Executive Officer. 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 devices and background monitoring devices 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 detected monitoring parameters shall be graphed so as to show historical trends at each monitoring point.

3. Surface Water Monitoring

The Discharger shall install and operate a surface water detection monitoring system where appropriate that complies with the applicable provisions of Title 27 CCR Sections 20415 and 20420 of and has been approved by the Executive Officer.

For all monitoring points and background monitoring points assigned to surface water detection monitoring, samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table III. All surface water monitoring samples shall be collected and analyzed

for the constituents of concern specified in Table V every five years. All detected monitoring parameters shall be graphed so as to show historical trends at each sample location.

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 G.4.f. of Order No. R5-2003-0114. 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.

b. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 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.

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

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

11 July 2003

(Date)

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	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 IV)	µg/L	Semiannual
Constituents of Concern (see Table V)		
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

TABLE II
UNSATURATED ZONE DETECTION MONITORING PROGRAM

SOIL-PORE GAS

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Monitoring Parameters		
Volatile Organic Compounds (USEPA Method TO-14)	$\mu\text{g}/\text{cm}^3$	Semiannual
Methane	%	Semiannual

TABLE III
SURFACE WATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Chloride	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 IV)	µg/L	Semiannual
Constituents of Concern (see Table V)		
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

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)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
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
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Methyl bromide (Bromomethene)

TABLE IV
MONITORING PARAMETERS FOR DETECTION MONITORING

Continued

Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
4-Methyl-2-pentanone (Methyl isobutylketone)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
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	6010
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470
Nickel	7520
Selenium	7742
Thallium	7841
Cyanide	9010
Sulfide	9030

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
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
1,1,1,2-Tetrachloroethane
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)

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

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)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
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-Dimethylphenol (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
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Isodrin
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
Naphthalene
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
o-Toluidine

TABLE V

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Toxaphene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Chlorophenoxy Herbicides:

USEPA Method 8150

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

0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Dimethoate
Disulfoton
Methyl parathion (Parathion methyl)
Parathion
Phorate

INFORMATION SHEET

ORDER NO. R5-2003-0114
FOR COUNTY OF TULARE
FOR CLOSURE AND POSTCLOSURE MAINTENANCE
EXETER SOLID WASTE LANDFILL
TULARE COUNTY

The County of Tulare (Discharger) owns and operates the Exeter Solid Waste Landfill (landfill) located approximately 3.3 miles south of Exeter. The landfill ceased discharge in September 1989.

The existing waste management facility consists of one existing unlined waste management unit (Unit) covering 34 acres. The Unit is currently classified as a Class III landfill that accepted municipal solid waste in accordance with Title 27 CCR.

The landfill is in a topographically flat region of the Tulare Lake Hydrologic Basin of the southern San Joaquin Valley. The ground surface slopes approximately 10 feet per mile toward the west. The landfill is on the Lewis Creek fluvial deposits between the fan deposits of the Kaweah and Tule Rivers.

The landfill is located on the westward dipping, eastern limb of the asymmetrical geosynclinal trough of the San Joaquin Valley. Sediments ranging in age from Jurassic to Holocene fill the geosynclinal trough. The site overlies a basement complex of pre-Tertiary age metasediments, plutonics, and ultramafics. Sequentially overlying the basement complex are approximately 1,000 to 3,500 feet of consolidated and unconsolidated Tertiary marine deposits, continental deposits, and unconsolidated Quaternary alluvium. Of significance to the site are the Quaternary age younger and older alluviums. The older alluvium ranges from Pleistocene to Recent in age and consists of interbedded gravel, sand, and silty-sand. The younger alluvium consists of moderately to highly permeable, interbedded fluvial deposits of gravelly-sand, silty-sand, silt, and clay. The younger alluvium is generally situated above the saturated zone.

The climate in the southern San Joaquin Valley is semi-arid, with hot, dry summers and cool winters. The average annual precipitation is 9.49 inches and the mean evaporation is estimated to be 80.5 inches per year. The landfill is not within a 100-year floodplain according to FEMA maps. The landfill is within the Lewis Creek floodplain and within a B zone Federal Insurance Rate Map designated area. Areas designated as B Zones are areas between the limits of the 100-year flood and the 500-year flood.

There are 13 domestic, one municipal supply, two dairy supply, and 7 agricultural groundwater supply wells within one mile of the Unit. Some of the 13 domestic supply wells may not be active since some of the domestic dwellings have been placed on a municipal water supply system. Some of the domestic supply wells and agricultural supply wells may not be active as a result of groundwater degradation due to previous olive processing operations at the City of Lindsay's West Side and East Side Brine

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COUNTY OF TULARE
FOR CLOSURE AND POSTCLOSURE MAINTENANCE
EXETER SOLID WASTE LANDFILL
TULARE COUNTY

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Ponds. The City of Lindsay previously discharged olive processing brine water to the West Side and East Side Brine Ponds west and southeast of the landfill. The City of Lindsay's previous olive processing brine water discharge is regulated by Waste Discharge Requirements, Order No. 87-054. No surface springs or other sources of groundwater supply have been observed.

The first encountered groundwater currently ranges from 49 feet below ground surface (bgs) at monitoring well M-11 to 44 feet bgs at monitoring well M-6A. Groundwater elevations range from 284.3 feet MSL at monitoring well M-3B to 288.6 feet MSL at monitoring well M-6A. In 1998, groundwater was as high as 20 feet bgs (315 feet MSL) along the northwestern boundary of the Unit. The groundwater is unconfined. The depth to groundwater generally fluctuates between 5 and 7 feet on a seasonal basis, but in rare occasions the depth to groundwater may fluctuate as much as 20 feet in the northernmost monitoring wells due to heavier than normal storm water flows in Lewis Creek. The direction of groundwater flow is generally toward the west, but may vary seasonally and periodically between S20°W and S70°W. Monitoring data indicates that current background groundwater quality has a specific electrical conductivity (EC) ranging between 1,488 and 3,000 micromhos/cm, with Total Dissolved Solids (TDS) ranging between 930 and 1,700 mg/l.

Surface drainage is toward Elk Bayou which is a tributary to the Tule River in the Kaweah Delta Hydrologic Area (558.10) of the Tulare Lake Basin. Lewis Creek is the nearest surface water body to the landfill and passes along the northwestern one-half of the landfill's northern margin.

Groundwater monitoring of the unconfined groundwater zone has detected numerous non-naturally occurring volatile organic compounds (VOCs) along the point of compliance of the landfill. Benzene; PCE; 1,1-DCE; TCE; 1,1-DCA; 1,2-DCA; and vinyl chloride have been detected at concentrations exceeding their respective Primary Maximum Contaminant Levels. Statistical analysis of naturally occurring inorganic waste constituents during the Second Quarter of 2002 determined that barium; bicarbonate; calcium; cobalt; iron; magnesium; sodium; sulfate; and TDS exceeded their respective background concentrations in one or more detection monitoring wells.

Groundwater samples collected and analyzed by the Discharger in November 2000, detected PCE at 5 µg/l and low concentrations of other VOCs, in City of Lindsay monitoring well M-20. City of Lindsay monitoring well M-20 is on Mr. Rob Hilarides property approximately 1,500 feet west/southwest of the southwestern corner of the Unit. City of Lindsay monitoring well M-20 was constructed to monitor unconfined groundwater beneath the closed City of Lindsay agricultural wastewater disposal pond west of the Unit. City of Lindsay monitoring well M-20 was sampled by the Regional Board in October 2002 and the results detected 4.7 µg/l of PCE and 1.8 µg/l of CFC-11.

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COUNTY OF TULARE
FOR CLOSURE AND POSTCLOSURE MAINTENANCE
EXETER SOLID WASTE LANDFILL
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Available information also indicates that 0.52 µg/l of 1,1-DCA was detected in City of Lindsay monitoring well M-15 in March 2001 and that 0.60 µg/l of 1,1-DCA was detected in the same well in July 2001. City of Lindsay monitoring well M-15 is approximately 2,500 feet due west of the northwestern corner of the Unit. Volatile organic compounds CFC-11, 1,1-DCA, and PCE have been detected in the Unit's Point of Compliance wells. Based on the detections of VOCs in City of Lindsay monitoring wells M-20 and M-15, it appears that the lateral extent of VOCs in groundwater may be at least 1,500 feet southwest and 2,500 feet west of the Unit.

Surface water detection monitoring on one occasion, detected iron in the landfill surface runoff water at a concentration exceeding the background concentration and in excess of its Secondary Maximum Contaminant Level. Surface water runoff from the landfill drains to Lewis Creek.

This Order requires the Discharger to complete an Evaluation Monitoring Program, submit an Engineering Feasibility Study for corrective action, and submit a Report of Waste Discharge for a Corrective Action Program in accordance with the requirements of Title 27 CCR and the time schedule contained within this Order. The Discharger is also required to submit semi-annual status reports to the Regional Board describing the progress of the Evaluation Monitoring Program and all activities conducted to complete the Evaluation Monitoring Program. This Order also requires the Discharger to complete the closure of the existing Unit in accordance with Executive Officer approved design plans and specifications, and with the prescriptive standards and performance goals of Title 27 CCR, by 31 December 2004.

Volatile organic compounds are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a solid waste landfill that has accepted municipal solid waste. Since volatile organic compounds are not naturally occurring, and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 CCR for the determination of a release of wastes from a Unit. Title 27 CCR does 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. However, Title 27 CCR does not specify a specific method for non-statistical evaluation of monitoring data. The Regional Board may specify a non-statistical data analysis method pursuant to Title 27 Section 20080(a)(1). 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.

The specified non-statistical method for evaluation of monitoring data in this Order provides two criteria (or triggers) for making the determination that there has been a release of waste constituents from a Unit. The presence of two waste constituents above

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their respective method detection limit (MDL), or one 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 waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release in accordance with Title 27 CCR, the detection of two 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 detecting one waste constituent above its MDL as a trigger.

On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, “federal municipal solid waste [MSW] regulations” or “Subtitle D”) that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste is discharged. Subtitle D Section 258.1(c) states that Subtitle D regulations do not apply to municipal solid waste landfills that do not receive waste after 9 October 1991. Since the landfill ceased discharge in September 1989, the provisions of Subtitle D do not apply.

The action to revise waste discharge requirements for this existing landfill is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301. Revision of the waste discharge requirements updates the requirements to conform with the California Water Code and Title 27, California Code of Regulations, Section 20005 et seq.

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