

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0075

WASTE DISCHARGE REQUIREMENTS
FOR
FLORIN PERKINS LANDFILL, INC.;
NANCY C. CLEAVINGER, TRUSTEE OF THE NANCY C. CLEAVINGER REVOCABLE
TRUST;
AUDREY A. HUNT, TRUSTEE OF THE AUDREY A. HUNT REVOCABLE TRUST;
JANET E. HARVEY, TRUSTEE OF THE JANET E. HARVEY REVOCABLE TRUST;
SALLY R. DAVIS, AND SUCCESSOR IN TRUST, TRUSTEE OF THE SALLY R. DAVIS
TRUST;
AUDREY A. HUNT AND NANCY C. CLEAVINGER, TRUSTEES, UNDER A
TESTAMENTARY TRUST FOR SALLY R. DAVIS UNDER THE TERMS OF THE WILL
OF ROBERT EARL DAVIS AS ESTABLISHED BY DECREE OF DISTRIBUTION
ENTERED ON MARCH 28, 1991;
VIRGINIA A. PALMER, TRUSTEE OF THE VIRGINIA A. PALMER REVOCABLE TRUST;
GAIL CHRISTINE BROWN, TRUSTEE OF THE DONALD BRUCE BROWN AND
GAIL CHRISTINE BROWN REVOCABLE TRUST
FOR CLOSURE OF THE
JACKSON ROAD LANDFILL
AN UNCLASSIFIED LANDFILL
SACRAMENTO COUNTY

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

1. Florin Perkins Landfill, Inc. operates the Jackson Road Landfill, an unlined, unclassified landfill on the Jackson Highway near Florin Perkins Road, as shown in Attachments A and B, which are incorporated herein and made part of this Order. The site covers 25 acres in Section 13, T8N, R5E, MDB&M, corresponding to Assessor's Parcel No. 078-201-07. The property is owned by Nancy C. Cleavinger, Trustee of the Nancy C. Cleavinger Revocable Trust; Audrey A. Hunt, Trustee of the Audrey A. Hunt Revocable Trust; Janet E. Harvey, Trustee of the Janet E. Harvey Revocable Trust; Sally R. Davis, and Successor In Trust, Trustee of the Sally R. Davis Trust; Audrey A. Hunt and Nancy C. Cleavinger, Trustees, under a Testamentary Trust for Sally R. Davis under the terms of the will of Robert Earl Davis as established by Decree of Distribution entered on March 28, 1991; Virginia A. Palmer, Trustee of the Virginia A. Palmer Revocable Trust; Gail Christine Brown, Trustee of the Donald Bruce Brown and Gail Christine Brown Revocable Trust. The operator and property owners are hereafter collectively referred to as the "Discharger."
2. The landfill was developed in a former gravel quarry covering about 23 acres. The landfill was formerly operated by Chet Hulsey from 1977 to 1993 under previous Waste Discharge Requirements (WDR) Order Nos. 78-37, 80-062, and 89-201. Florin Perkins Landfill Inc. operated the landfill from 1993 to 1994 under closure WDR Order No. 94-261. All

previous WDRs limited the discharge to inert solid wastes. No Solid Waste Facilities Permit was issued to these operators by the Local Enforcement Agency because the landfill is unclassified. The landfill ceased operations in February 1994 but has not yet been closed (i.e. graded for drainage and covered).

Previous closure WDRs required a Final Closure and Postclosure Maintenance Plan (FCP) to be submitted by 1 November 1994 and landfill closure by 1 November 1995. The Discharger did not comply with this schedule. The Discharger recently submitted the FCP for the landfill but it is not yet complete. These revised WDRs include a new schedule with enforceable due dates for completion of the FCP and closure of the landfill. The WDRs also prescribe requirements for closure and postclosure maintenance and monitoring of the landfill.

WASTES AND UNIT CLASSIFICATION

3. The landfill accepted solid wastes defined as “inert” under Section 20164 of Title 27. Under the Title 27 definition, an inert waste stream can include insignificant quantities of decomposable wastes. Previous WDR Order Nos. 78-37 and 80-062 limited the discharge of decomposable wastes to the landfill to wood and paper wastes up to ten percent by volume, while subsequent WDRs (Order Nos. 89-201 and 94-261) were more restrictive, limiting disposal to non-decomposable wastes, including concrete, dirt, construction and demolition debris, asphalt, and other miscellaneous inert wastes. Approximately 400,000 cubic yards of inert waste was discharged to the landfill. The actual percentage of decomposable wastes discharged to the landfill is unknown, but is expected to be small based on the limitations in previous WDRs. The landfill is an existing unclassified waste management unit under Section 20080(d) of Title 27.
4. Section 20320 of Title 27 authorizes the Regional Board to prescribe WDRs for discharges of inert wastes.

DESCRIPTION OF THE SITE

5. The site is in an alluvial plain which slopes gently (6 to 8 feet per thousand feet) toward the Sacramento River to the west. The alluvial plain is part of the larger Victor Alluvial Plain.
6. Land within 1000 feet of the landfill is used for industrial, commercial, and residential purposes. The site is bounded by a gravel yard to the east (Teichert Land Company), a tree nursery to the west, the Jackson Highway to the south and Kiefer Boulevard to the north. Immediately south of the Jackson Highway from the landfill is the Florin Perkins Unclassified Landfill, an active inert waste landfill and materials recycling facility, also operated by the Discharger. North of Kiefer Boulevard from the landfill are various commercial and residential properties.
7. Approximately two acres of the site are used for perimeter setbacks, including 15 feet from both the north and south perimeters and 25 feet from the western perimeter. There was no

setback from the eastern perimeter. The elevation of the surrounding grade is about 46 feet MSL to the north, south and west, and about 37 feet MSL to the east where the Teichert gravel yard is located.

8. The lowest elevation of waste is about 37 feet below ground surface (bgs) or 11 feet above mean sea level (MSL), corresponding to the bottom of the original quarry pit. Approximately 1.6 acres of the original pit near the facility entrance remains unfilled.
9. Two electric utility easements, one owned by Western Associates Power Authority (WAPA) and the other owned by the Sacramento Municipal Utility District (SMUD), traverse the site from southeast to northwest. There are also two transmission towers (one on each easement) on mounds of native soil (15 feet MSL) in undeveloped portions of the landfill area. A setback was maintained from the towers during landfill operations to prevent damage to the towers. In 1999, the utility towers were replaced with utility poles, which allowed filling in the setback area to achieve final cover grades.

Landfill Gas

10. It is not known whether the landfill produces landfill gas (LFG) as a result of the decomposition of any wood or paper wastes that may have been discharged to the landfill under previous WDRs, as described in Finding No. 3. No LFG monitoring has been conducted at the site. Provision 13 of these WDRs requires the discharger to conduct an investigation to determine whether the landfill generates LFG and whether LFG controls and monitoring are needed to protect water quality (see Finding No. 23).

GEOLOGY

11. The site is underlain by the Victor Formation, which ranges from 90 to 150 feet in thickness and extends throughout most of Sacramento County. The Victor Formation consists of sands, silts, and clay with lenses of gravel and hardpan. Boring logs indicate that the soil underlying the site consists of 25 feet of sandy silt and clay underlain by a 20 to 30 foot thick layer of cobble and gravel mixed with sandy silt and clay. The base of the landfill is within the cobble/gravel zone. Underlying the cobble to a depth of at least 83 feet bgs (-14 feet MSL) is fine sandy silt and clay.
12. Laboratory tests of soil samples recovered from borings installed at the site indicate soil permeabilities ranging from 10^{-5} to 10^{-7} cm/sec. No samples of the gravel or cobble that underlies the landfill were recoverable from the borings, however. Based on soil type, the permeability of the gravel/cobble zone is likely orders of magnitude higher than that measured in the sandy silt and clay.
13. There are no known Holocene faults in the landfill area. The closest faults are in the Coast Range-Sierra Block boundary zone approximately 33 miles west of the facility and in the Sierra Nevada Mountain Range (Bear Mountains and Melones fault zones) approximately 30 miles east of the facility. Recorded magnitudes of seismic events along these faults range up to 7.0 on the Richter scale. The maximum probable earthquake acceleration for the site is 0.115 g.

SURFACE AND STORM WATER

14. The site is in the Florin Hydrologic Sub-Area of the Morrison Creek Hydrologic Area of the Valley American Hydrologic Unit in the Sacramento Hydrologic Basin Planning Area (as depicted on the interagency hydrologic maps prepared by the Department of Water Resources in August 1986). Local storm water system drainage is to the American River.
15. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
16. The beneficial uses of the surface waters are domestic, municipal, agricultural, groundwater recharge, power generation, recreation, aesthetic enjoyment, fresh water replenishment, fresh water habitat, migration, spawning and preservation and enhancement of fish, wildlife and other aquatic resources.
17. The facility is within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 060 266-0010E. The base flood elevation is 48 feet MSL, which would cause inundation of most of the landfill and surrounding area if it occurred. The discharger does not propose the construction of any structures to prevent inundation or washout from a 100-year flood and Title 27 does not require such measures for an inert waste landfill.
18. The 100-year, 24-hour precipitation event for the site is 4.42 inches and the average annual rainfall is 17.6 inches, based on "Rainfall Depth Duration Frequency" data for Sacramento County compiled by the Department of Water Resources.
19. The site is not currently graded for drainage. Storm water runoff either infiltrates into the landfill, flows to topographic low areas, or flows to unlined perimeter ditches. Runon from the Jackson Highway collected in an onsite drop inlet is currently routed to the Teichert property on the eastern portion of the site via underground pipes. The discharger proposes to re-route this drainage to an onsite detention basin to be constructed as part of landfill closure (see Finding No. 36).

GROUNDWATER

20. The beneficial uses of ground water in the vicinity of the site include domestic, municipal, industrial, and agricultural supply.
21. The depth to groundwater ranges from about 64 feet bgs (-14 feet MSL) at the end of the dry season to about 60 feet bgs (-10 feet MSL) at the end of the wet season based on a surrounding grade elevation of 46 feet MSL. The uppermost aquifer is unconfined and begins in the fine sandy silt underlying the gravel/cobble layer. The capillary fringe is estimated to be about two feet based on soil type. The direction of groundwater flow is to the south-southeast and the groundwater gradient is approximately 2.0 feet per 1,000 feet.

22. The last local well survey was conducted in 1994. It is now estimated that there are up to 745 wells within a one-mile radius of the landfill, including domestic, industrial supply, and agricultural irrigation wells. At least five of these wells are domestic wells within 1,000 feet of the landfill, however it is not current known whether any of these wells are in use. These WDRs include a provision requiring the Discharger to conduct an investigation to identify all wells within a 250-foot radius north (i.e. upgradient) of the landfill and within a one-mile radius south (i.e. down gradient) of the landfill.
23. One of the two point of compliance wells at the site, side gradient well MW-2, shows historically elevated concentrations of total dissolved solids (TDS) compared to well MW-3 on the upgradient perimeter of the site. In December 2002, for example, TDS was detected at a concentration of 560 mg/L in MW-2, compared to 300 mg/L in MW-3. The TDS concentration in MW-2 also exceeds applicable water quality standards for the protection of groundwater beneficial uses include the agricultural standard of 450 mg/L and the secondary drinking water standard (maximum contaminant level) of 500 mg/L. The concentration of bicarbonate in MW-2 has also historically exceeded that detected in upgradient well MW-3. In December 2002, for example, bicarbonate was detected in MW-2 at 340 mg/L, compared to 81 mg/L in MW-3. Provision 13 of these WDRs requires the Discharger to investigate whether the elevated concentrations of TDS and bicarbonate detected in compliance well MW-2 may be the result of a landfill gas impact. To determine whether there may have been an historic release from the landfill, the monitoring and reporting program in these WDRs also requires that the discharger monitor for all major anions and cations in the groundwater and evaluate groundwater water quality trends and chemistry.

DATA ANALYSIS

Non-Statistical Method

24. Sections 20415(e)(8) and (9) of Title 27 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 §20415(b)(1)(B)(2 - 4) of Title 27. However, Title 27 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 Section 20080(a)(1) of Title 27.
25. Section 13360(a)(1) of the California Water Code 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.
26. For inorganic constituents generally detected in background (i.e., at least 10% of the data from background samples equal or exceed their respective MDL), the Discharger proposes to use the Tolerance Interval Method statistical data analysis procedure described in Section 20415(e)(8)(C) and the Final Closure Plan. Detection Monitoring Specifications F. 17 through 19 herein prescribe requirements for the statistical analysis of background and detection monitoring data.

27. For VOCs, other non-naturally occurring COCs, and for inorganic constituents not generally detected in background (i.e., less than 10% of the data from background samples equal or exceed their respective MDL), the Discharger proposes to use non-statistical data analysis in accordance with Title 27. Detection Monitoring Specifications 20 through 22 herein prescribe requirements for the non-statistical analysis of background and detection monitoring data.

LANDFILL CLOSURE

28. Section 13360(a)(1) of the California Water Code 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.

Proposed Landfill Cover

29. The landfill has not yet been closed. Title 27 does not specify prescriptive closure requirements for an unclassified landfill. The Final Closure Plan proposes a non-prescriptive cover design as follows:
- a. Foundation Layer: Inert waste and clean fill soil (described in Finding 30, see also Discharge Specification B.2 Closure Specifications C.2 and C.3)
 - b. Low hydraulic Conductivity Layer: none
 - c. Erosion Resistant Layer: Two feet of clean vegetative cover soil (described in Finding 31, see also Discharge Specification B.2 and Closure Specifications C.4 and C.5)
 - d. Vegetative Cover: native grass (see Closure Specification C.6)
30. The purpose of the foundation layer is to support the overlying vegetative cover soil in order to reduce differential settlement (see Closure Specifications C.2 and C.3). The foundation layer will consist of the upper one foot of the landfill surface, including interim cover soil, after it is brought to design grade using clean fill soil and imported inert wastes. Approximately 74,000 cubic yards of imported fill, including concrete, asphalt and clean soil, will be needed. The soil will be used to fill void spaces in the foundation layer of the cover. An existing stockpile of concrete will also be used to help fill an undeveloped portion of the pit near the facility entrance. The specifications for the soil and inert waste materials used in the foundation layer will include the following:
- a. A 12 inch maximum particle size in the upper foot
 - b. A 30 percent maximum rock content in the upper foot
 - c. Moisture-conditioning and 90 percent compaction of the fill soil

There will be no foundation layer under the perimeter berm (Finding 32) or detention basin (Finding 36), since these structures are not part of the landfill cover.

31. Because the landfill is unclassified and is permitted only to accept inert wastes, there will be no low hydraulic conductivity layer in the final cover and no hydraulic conductivity specification for the erosion resistant soil layer. Approximately 81,000 in-place cubic yards of soil will be needed to construct the erosion-resistant layer. The soil will consist of sandy silt, clay and/or silty sand, moisture-conditioned and compacted to 90 percent. After installation and finish grading, the upper few inches of the soil will be scarified and hydroseeded in order to establish vegetative cover. Vegetative cover will consist of native grasses.

Proposed Grading

32. The landfill will be graded as follows (see Attachment B: Facility Map):
- a. Crest Area
 - On the western side of the landfill
 - Elongated shape, oriented NW-SE
 - 53 feet MSL elevation
 - b. Side slopes
 - 1.0 to 1.4% to the northeast, southeast, south and southwest.
 - 3.75 : 1 horizontal-to-vertical (H:V) on north and west sides
 - 2H:1V along east side
 - c. Perimeter
 - 46 feet MSL on all sides except on the east side.
 - The landfill will be buttressed by a perimeter berm constructed along eastern site boundary on the Teichert property. The berm will be graded at a 2H:1V slope toward the east. The top of the berm will be at 46 feet MSL and the eastern toe will conform to the elevation of the adjacent Teichert property (approximately 34 feet MSL).
 - Berm will be about 1,350 feet long, 60 feet wide, and 12 feet high
 - The entire berm will constructed from clean soil engineered to 95 percent relative compaction.

Provision 10(d) of these WDRs requires that the Discharger submit a report demonstrating the stability of the final cover slopes, including the perimeter berm.

Precipitation and Drainage Controls

33. The proposed precipitation and drainage controls include the following:
- a. Landfill grading (described above)
 - b. Ditches, culverts and drop inlets which:
 - Convey onsite drainage to detention basin
 - Re-route run-on from south side of Jackson Highway into detention basin
 - c. A storm water detention basin
 - d. Outfall to Kiefer Boulevard storm drain
 - e. An eastern perimeter berm

The storm water drainage facilities are designed to collect and convey runoff from a 100-year, 24-hour storm event. The estimated peak runoff using the "Time of Concentration" method is 30 cubic feet per second (cfs).

34. Landfill runoff will be collected in onsite perimeter ditches and routed to a detention basin to be constructed on the eastern side of the site. Runoff from the northern half of the landfill will flow clockwise into the north end of the detention basin, while runoff from the southern half of the landfill will flow counterclockwise, via drop inlets and a culvert, to south end of the detention basin. The ditches will have a 1.5 feet minimum depth with a triangular cross-section, 1.5H:1V side slopes, and a 0.25 percent bottom slope. Runoff from the northeastern slope will sheet flow directly into the detention basin. Run-on from a ditch on the south side of the Jackson Highway currently flows through a culvert under the Jackson Highway onto the Teichert property. This runoff will be re-routed to the detention basin via installation of an onsite culvert and drop inlet (see Attachment B: Facility Map).
35. Landfill runoff will be discharged to a City of Sacramento storm drain along the north side of Kiefer Boulevard (see Attachment B). Due to the limited capacity of the storm drain, however, the City has imposed limitations on the discharge. The City has prohibited any discharge during the first six hours of a storm event and has limited the maximum discharge rate to 7.5 cfs. To meet these limitations, the Discharger proposes to construct an onsite detention basin in an undeveloped topographic low area along the eastern site perimeter. The purpose of the detention basin is to reduce peak runoff rates and regulate the discharge in order to meet the City's discharge requirements.
36. The detention basin will be unlined and rectangular in shape. The design parameters include the following:
 - a. Dimensions - Approximately 1,080 feet long, 45 feet wide, and nine feet deep.
 - b. Elevation - 37 feet MSL at bottom, 46 feet MSL at top, 45 feet MSL at spillway
 - c. Slopes
 - 2H:1V, except for south interior slope which will be about 10H:1V below the zero freeboard elevation (44 feet MSL).
 - Eastern interior slope will be western slope of perimeter berm
 - Western interior slope will be eastern slope of the landfill.
 - d. Capacity
 - Contains a 100-year, 24-hour storm event
 - 91,560 cubic feet capacity between 38 and 44 feet MSL
 - Allows for two feet of freeboard, emergency spillway maintains a one foot of freeboard
 - Allows for one foot at bottom for sedimentation collection
 - Calculations did not include water loss due to seepage

A portion of the eastern perimeter berm of the detention basin (approximately 25 feet) will be constructed on the Teichert property pursuant to an easement agreement to be negotiated between Teichert and the Discharger. Storm water will be discharged from the detention

basin by means of an outflow culvert extending from the north side of the basin to an existing culvert underneath Kiefer Boulevard. The outflow culvert will be equipped with a control gate connected to a pressure transducer placed in the storm drain along Kiefer Boulevard. When the storm drain is full, the control gate will close, preventing any discharge into the storm drain. Since the basin will be unlined, some storm water is also expected to infiltrate through the bottom of the pond. The emergency spillway will be on the north side of the basin at an elevation of 45 feet MSL, and will direct any overflow to Kiefer Boulevard. The spillway is intended to prevent a spill onto the landfill or Teichert property. The City has approved of the spillway.

FINANCIAL ASSURANCES

37. Title 27 does not require the operator of an unclassified landfill to provide financial assurances for closure, postclosure maintenance, and/or corrective action. See Sections 22205(b), 22210(b), 22207(a), 22220(b) and 22222.

CEQA AND OTHER LEGAL REFERENCES

38. The City of Sacramento prepared a Negative Declaration and filed a Notices of Determination for this facility with the Sacramento County Recorder 20 August 1979, in accordance with Section 15083 of the California Administrative Code and City of Sacramento environmental regulations. The City also issued a Special Use Permit for the project containing required mitigation measures, including a condition that the project conform to the requirements of the Regional Board.
39. The action to revise the WDRs is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with Title 14, California Code of Regulations (CCR) Section 15301 for existing facilities.
40. 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 discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The monitoring and reporting program required by this Order and the attached "Monitoring and Reporting Program No. R5-2003-0075" are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

41. This order implements:
- a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;*
 - b. Chapters 1 through 6, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;
 - c. *The Porter-Cologne Water Quality Control Act* (as amended January 1, 2002), Division 7, California Water Code.
 - d. State Water Resources Control Board Resolution No. 68-16, *Statement of Policy With Respect to Maintaining High Quality of Waters in California.*

PROCEDURAL REQUIREMENTS

42. 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.
43. 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.
44. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
45. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Regional Board Order No. 94-261 is rescinded, and that Florin Perkins Landfill, Inc. (operator) and Nancy C. Cleavinger, Trustee of the Nancy C. Cleavinger Revocable Trust; Audrey A. Hunt, Trustee of the Audrey A. Hunt Revocable Trust; Janet E. Harvey, Trustee of the Janet E. Harvey Revocable Trust; Sally R. Davis, and Successor In Trust, Trustee of the Sally R. Davis Trust; Audrey A. Hunt and Nancy C. Cleavinger, Trustees, under a Testamentary Trust for Sally R. Davis under the terms of the will of Robert Earl Davis as established by Decree of Distribution entered On March 28, 1991; Virginia A. Palmer, Trustee of the Virginia A. Palmer Revocable Trust; Gail Christine Brown, Trustee of the Donald Bruce Brown and Gail Christine Brown Revocable Trust (property owners), their agents, assigns and successors, 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 non-inert wastes to the landfill, including wastes defined as "hazardous", "designated" or "nonhazardous", as defined under Title 27, is prohibited.
2. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) is prohibited.
3. The discharge of solid waste containing free liquid or moisture in excess of the waste's moisture holding capacity is prohibited.
4. The discharge of wood or other decomposable matter to the landfill is prohibited.
5. The discharge of wastes outside of the closure unit is prohibited.
6. The discharge shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of nuisance, degradation, contamination, or pollution of groundwater to occur, as indicated by the most appropriate statistical or nonstatistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements.
7. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Unit if such waste constituents could migrate to waters of the State — in either the liquid or the gaseous phase — and cause a condition of nuisance, degradation, contamination, or pollution. To demonstrate compliance with this requirement, Provision 13 of these WDRs requires the Discharger to conduct an investigation to determine whether the landfill generates landfill gas and whether LFG may be impacting or threatening to impact water quality.
8. With the exception of storm water infiltration, the discharge of solid or liquid waste or leachate to groundwater is prohibited.
9. The discharge of treated or untreated wastewater, groundwater, or storm water runoff to any surface water or any surface water drainage course is prohibited without an NPDES permit authorizing the discharge.

B. DISCHARGE SPECIFICATIONS

1. The discharge shall remain within the designated disposal area at all times.
2. The discharge of inert wastes to the facility shall be limited as follows:
 - a. No inert wastes shall be used in construction of the erosion-resistant layer.

- b. Inert wastes used in construction of the foundation layer shall be suitable for that purpose as specified in Closure Specifications C.2 and C.3.
 - c. With the exception of existing landfill wastes underlying the western interior side slope (see Finding 36), no inert wastes other than clean soil shall be used in the construction of the detention basin and perimeter berm.
3. The disposal area shall be protected from any washout or erosion of wastes or covering material, and from inundation, which could occur as a result of floods having a predicted frequency of once in 100 years.
4. Annually, prior to the anticipated rainfall period, all necessary storm water controls, including runoff diversion channels, shall be in place to prevent:
 - a. Erosion of the landfill cover,
 - b. Sedimentation and clogging of storm drains, and
 - c. Flooding of the site.

c. CLOSURE SPECIFICATIONS

1. The final cover shall be designed, graded, constructed and maintained to promote storm water runoff and to prevent to the greatest extent possible, ponding, inundation, erosion, slope failure, washout, and overtopping.

Foundation Layer

2. The materials used for the foundation layer shall have appropriate engineering properties for a foundation layer in accordance with Section 21090(a)(1).
3. The foundation layer shall be engineered to minimize the potential for differential settlement so as not to affect the structural integrity of the final cover. Foundation layer soil shall be compacted to the maximum density obtainable at optimum moisture content using methods that are in accordance with accepted civil engineering practice.

Erosion-Resistant Layer and Vegetative Cover

4. The erosion-resistant layer shall be constructed as described in Finding 31.
5. The soil used in the erosion-resistant layer shall support growth of the vegetative cover to the extent necessary to prevent erosion.
6. The erosion-resistant layer shall be planted with native or other suitable vegetation so as to provide effective erosion resistance. Vegetative cover shall be:
 - a. Resistant to foreseeable adverse environmental factors (*e.g., climate, disease, and pests*);
 - b. Tolerant of the vegetative layer's soil conditions;
 - c. Rapidly of germinating and have a high percentage of surface coverage;

- d. Sufficiently persistent and self-propagating to prevent surface erosion; and
- e. Compatible and harmonize with the proposed postclosure land use.

Landfill Slopes

- 7. The final cover slopes shall be designed, graded, constructed as described Finding 32 and the FCP.
- 8. The landfill cover shall be graded and maintained to promote lateral runoff of precipitation and to prevent ponding.
- 9. The cover grade shall not be less than one percent in any area.
- 10. All final cover slopes shall be designed and constructed to withstand a maximum probable earthquake.

Drainage

- 11. Precipitation and drainage control systems shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
- 12. Precipitation and drainage control systems shall be designed, constructed and operated to convey peak flows from a 100-year, 24-hour storm event.
- 13. Any proposed modifications in the detention pond shall be in accordance with a design report approved by the Executive Officer.

Other

- 14. The closed landfill shall be provided with at least two permanent monuments, installed by a licensed land surveyor, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the postclosure maintenance period.
- 15. The landfill shall be closed in accordance with the time schedule listed in Provision 12.

D. CONSTRUCTION SPECIFICATIONS

- 1. The final cover, including side slopes, shall consist of an erosion-resistant layer underlain by a foundation layer, as described in Findings 30 and 31. The foundation layer specifications shall include the following:
 - a. A 12 inch maximum particle size in the upper foot
 - b. A 30 percent maximum rock content in the upper foot
 - c. Moisture-conditioning and at least 90 percent compaction of the fill soil

The erosion resistant layer specifications shall include the following:

- a. A 24 inch minimum thickness

- b. A $\frac{3}{4}$ inch maximum particle size
 - c. Soil type consisting of sandy silt, or silty sand and/or clayey sand
 - d. Moisture-conditioning and 90 percent maximum compaction
 - e. Scarification of upper three inches
 - f. Native grasses as vegetative cover
2. Precipitation and drainage control systems shall be constructed as described in Findings 33, 34 and 35 per the Final Closure Plan (FCP). The detention basin shall be constructed as described in Finding 36 and the FCP.
3. The Discharger shall submit the following documents to the Executive Officer for review and approval **prior to** initiating closure-related construction activities:
 - a. All construction design report, including specifications, drawings, and design plans.
 - b. A Construction Quality Assurance (CQA) Plan which satisfies the requirements of Section 20324 of Title 27 as it applies to the construction of the erosion-resistant and foundation layers.
4. Inert soil used in the construction of the detention basin or perimeter berms shall meet the construction specifications and shall be used in accordance with the CQA plan for these structures.
5. The Discharger may propose changes to the cover design before or after 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 this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design may need to be approved by the Regional Board.
6. Construction shall proceed only after all applicable construction documents have been approved by Executive Officer.
7. After completion of closure construction, the Discharger shall submit final documentation to the Executive Officer for review and approval in accordance with Section 20324(d)(1)(C) of Title 27 and the schedule in Provision 12 herein. 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, specifications and the Final Closure Plan.
8. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during closure construction of the landfill.

E. 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 or leachate containment facilities or precipitation and drainage control structures.
3. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements. All storm water controls, including drainage facilities and the detention basin, shall be maintained so that they function effectively during precipitation events.
4. Methane and other landfill gases, if present, 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.
5. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, and construction.
6. All storm water runoff shall be collected in the detention basin. Runoff shall not be allowed to bypass the detention basin.
7. A freeboard of at least two feet shall be maintained in the detention pond at all times.
8. The detention pond, including associated facilities, shall be operated and maintained to minimize vectors and odors.
9. Runoff shall be either contained on-site or discharged offsite accordance with applicable storm water regulations and Monitoring and Reporting Program No. R5-2003-0075.
10. Storm water collected in the detention basin shall be detained at least six hours prior to offsite discharge, and shall be discharged only through the outfall culvert or emergency spillway (in case of an overflow) as described in Findings 35 and 36 and shown in Attachment B: Facility Map.

F. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall conduct groundwater, unsaturated zone, and surface water monitoring, as specified in Monitoring and Reporting Program (MRP) No. R5-2003-0075. Groundwater monitoring shall include background monitoring and

detection monitoring. Background monitoring shall be conducted for the purpose of establishing concentration limits as part of the Water Quality Protection Standard per Section 20400(a) and for detection monitoring per Section 20415(b)(A). Detection monitoring shall be conducted for the purpose of determining whether there has been a release from the unit, per Sections 20415(b)(B) and 20420 of Title 27.

2. The Discharger shall provide Regional Board staff a minimum of **one-week** notification prior to commencing any field activities related to the installation, non-routine repair, or abandonment of monitoring devices. The Discharger shall also provide Regional Board staff with a sampling schedule at least 48 hours prior to initiation of each detection, evaluation, or corrective action monitoring event conducted pursuant to MRP No. R5-2003-0075.
3. The Discharger shall comply with the Water Quality Protection Standard as specified in MRP No. R5-2003-0075 and the Standard Provisions.
4. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed concentration limits established in accordance with MRP No. R5-2003-0075.
5. The Discharger shall have a Sampling and Analysis Plan (SAP) which includes the following:
 - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. Sample preservation information and shipment procedures;
 - c. Sample analytical methods and procedures; Sample quality assurance/quality control (QA/QC) procedures; and
 - d. Chain of Custody control.

The SAP shall further comply with Specifications F.6 through F.14 herein.

6. 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.
7. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) *Methods for the Analysis of Organics in Water and Wastewater* (USEPA 600 Series), (2) *Test Methods for Evaluating Solid Waste* (SW-846, latest edition), and (3) *Methods for Chemical Analysis of Water and Wastes* (USEPA 600/4-79-020), and in accordance with the approved SAP.

8. 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.
9. 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.
10. **“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.
11. **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.
12. 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.
13. **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.
14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the

person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

DATA ANALYSIS

15. For each monitoring parameter and COC, the Discharger shall develop and implement data analysis methods for background and detection monitoring, for groundwater, the unsaturated zone, and surface water, as specified in Monitoring Specification 1. The method (or methods) used shall be as specified in Section 20415 (e)(8), and shall be consistent with the performance standards specified in Section 20415(e)(9) and sampling standards specified in Section 20415(e)(12). The monitoring data analysis methods shall be documented in a certified technical report prepared in accordance with Section 20415(e)(7) of Title 27 and submitted to this Regional Board in accordance with Provision 11 of these WDRs.

Background Monitoring

16. In accordance with Section 20415(e)(10), the discharger shall determine the background value for each COC and Monitoring Parameter specified in the WDRs for each media (i.e. ground water and surface water), as follows:
 - a. By Reference to Historical Data — a procedure for determining a background value for each constituent or parameter that does not display appreciable variation; or
 - b. By Using a Formula/Procedure — a procedure for establishing and updating a background value for a constituent or parameter to reflect changes in the background water quality if the use of contemporaneous or pooled data provides the greatest power to the data analysis method for that constituent or parameter.

Background for water samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The data analysis methods for background monitoring shall be documented in the technical report required under Monitoring Specification E.15 herein.

Statistical Methods

17. For naturally-occurring constituents for which at least 10% of the data from background samples equal or exceed their respective MDL, the Discharger shall use one of the following statistical data analysis methods for detection monitoring:
 - a. The Tolerance Interval Method, as described in Section 20415(e)(8)(C). The tolerance (concentration) limits shall be updated annually using background monitoring data. A parametric approach shall be used unless the data is not normal and cannot be transformed normal, in which case a non-parametric approach shall be used. The upper tolerance interval shall be set at the 95 percent confidence level; or

- b. One of the other allowable statistical data analysis methods described in Section 20415(e)(8); or
- c. An alternative statistical method, provide that such method meets the performance standards of Section 20415(e)(9) and is approved by the Executive Officer.

The Discharger may amend or revise the statistical procedure used for data analysis or propose another procedure in lieu of the current procedure in accordance with Section 20415(e)(8)(E). Any proposed changes to the alternative data analysis procedure subsequent to the adoption of these WDRs shall be submitted for review and approval by the Executive Officer. The scope of any changes may include 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 down gradient sample shall be reported and flagged for easy reference by Regional Board staff.

- 18. A tentative indication of a release shall be triggered if one statistical constituent is detected above its concentration limit. If a release is tentatively indicated, a retest consisting of two discreet samples shall be conducted. If the constituent is detected above its concentration limit in either retest, the release shall be confirmed.
- 19. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Section 20415(e)(7) of Title 27 that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Section 20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or down gradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

Non-Statistical Method

- 20. The Discharger shall use a non-statistical test method (per Section 20415(e)(8)) for detection monitoring data analysis where it is impractical to conduct a statistical analysis, including for all non-naturally occurring COCs (i.e. VOCs) and for naturally-occurring COCs for which less than 10% of the data from background samples equal or exceed their respective MDL (i.e. certain dissolved inorganic constituents). Each qualifying constituent at a monitoring point shall be determined based on either:
 - a. The data from a single sample for that constituent, taken during that reporting period from that monitoring point; or

- b. The data from the sample which contains the largest number of qualifying constituents, where several independent samples have been analyzed for that constituent at a given monitoring point.

The sampling protocol to be used with this method shall satisfy the sampling performance standards of 20415(e)(12)(A). The technical report required under Monitoring Specification E.15 shall include this demonstration.

21. The specified non-statistical method shall, at a minimum, include the following criteria (or triggers) for determining whether a release from the unit is tentatively-indicated:
 - a. The data contains one qualifying VOC or other non-naturally occurring COC that equals or exceeds its PQL; or
 - b. The data contains two or more qualifying VOCs and/or other non-naturally occurring COCs that equal or exceed their MDLs; or
 - c. The data contains one naturally occurring monitoring parameter or COC not generally present in background which equals or exceeds its PQL.
22. If a release is tentatively indicated by this non-statistical procedure, the Discharger shall conduct two discreet retests, as follows:
 - a. If the same tentatively indicated non-naturally occurring constituent is detected above its respective MDL in either of the retest samples, it will be considered sufficient evidence that the constituent is present and is a component of the release.
 - b. If the tentatively indicated non-naturally occurring constituent is not detected above its MDL in either of the retest samples, it will be assumed that the tentative indication of the constituent was a Type I error.

The scope of the laboratory analysis for the non-statistical retest of COCs shall address only those constituents detected in the sample which initiated the retest. Therefore, the list of "qualifying constituents" for use in the retest shall consist of those constituents which provided the original indication at that monitoring point. If the retest meets either triggering condition in either of the two retest samples, the retest shall have validated the original indication.

23. Response to Tentative Release

- a. Any time the laboratory analysis of a sample from a background or detection monitoring point shows a tentative indication of a release, then the Discharger shall:

- i. **immediately** notify the Regional Board by phone;
 - ii. follow up with written notification by certified mail **within seven days**;
 - iii. conduct appropriate retest procedures specified above;
 - iv. send such samples for laboratory analysis of all detectable VOCs **within thirty days**.
- b. If the retest results confirm a release, the Discharger shall:
 - i. **immediately** notify the Regional Board about the constituents verified to be present at that background or detection monitoring point, and
 - ii follow up with written notification submitted by certified mail **within seven days** of validation; and
- c. If the Discharger believes that the release is from a source other than the Unit, then:
 - i **within seven days** of determining “measurably significant” evidence of a release, submit to the Regional Board by certified mail a Notification of Intent to make such a demonstration pursuant to Section 20420(k)(7) of Title 27; and
 - ii **within 90 days** of determining “measurably significant” evidence of a release, submit a report to the Regional Board that demonstrates that a source other than the Unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone.

If the Executive Officer determines, after reviewing the submitted report(s), that the detected waste constituents originated from a source other than the Unit(s), the Executive Officer will make appropriate changes to the monitoring program. If the Executive Officer determines, after reviewing the submitted report, that the detected waste constituents 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.

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, and 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 throughout the life of the facility including the postclosure period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
 - b. Date, time, and manner of sampling;
 - c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
 - d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
 - e. Calculation of results; and
 - f. Results of analyses, and the MDL and PQL for each analysis.
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:
 - i) The time of water level measurement;
 - ii) 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;
 - iii) 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;
- iv) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - v) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan.
- b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
 - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
 - d. Laboratory statements of results of all analyses evaluating compliance with requirements.
 - e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
 - f. A summary and certification of completion of all **Standard Observations** for the Unit(s), for the perimeter of the Unit, and for the receiving waters. The Standard Observations shall include:
 - i) 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.
 - ii) 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.
- iii) 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.
- g. The quantity and types of wastes discharged and the locations in the Unit where waste has been placed since submittal of the last such report.
5. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Board **within seven days**, containing at least the following information:
- a. A map showing the location(s) of seepage;
 - b. An estimate of the flow rate;
 - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d. Verification that samples have been submitted for analyses of the Constituents of Concern and Monitoring Parameters, and an estimated date that the results will be submitted to the Regional Board; and
 - e. Corrective measures underway or proposed, and corresponding time schedule.
6. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the reporting period of the previous monitoring year. This report shall contain:
- a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such

graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.

- b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the reporting periods for the year shall be submitted in tabular form as well as in a digital file format acceptable to the Executive Officer. The Regional Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [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 and a comparison to final closure design contours.
- e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
- f. An evaluation of the effectiveness of the leachate monitoring/control facilities.

H. PROVISIONS:

1. The Discharger shall maintain a copy of this Order and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2003-0075, which is attached to and made part of this order.
3. The Discharger shall comply with the *Standard Provisions and Reporting Requirements* (Standard Provisions), dated April 2000, which are hereby incorporated into this Order. The Standard Provisions contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements. In the event of any conflicting language or requirements between this Order and the Standard Provisions and Reporting Requirements, the requirements of this Order shall prevail.

4. The Discharger shall, in a timely manner, remove and relocate any waste discharged at this facility in violation of this Order.
5. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with Monitoring and Reporting Program No. 94-261, as required by Section 13750 through 13755 of the California Water Code.
6. The Discharger shall immediately notify the Regional Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures.
7. The Discharger shall maintain waste containment facilities, the landfill final cover, precipitation and drainage controls, monitoring wells, and shall continue to monitor ground water and surface waters per Monitoring and Reporting Program No. R5-2003-0075 throughout the postclosure maintenance period.
8. The postclosure maintenance period shall continue until the Regional Board verifies that remaining waste in the landfill will not threaten water quality.
9. The owners of the waste management facility shall have the continuing responsibility to assure protection of usable waters from discharged wastes and from any gases and/or leachate generated by discharged wastes during the closure and postclosure maintenance period of the landfill and during subsequent use of the property for other purposes.

10. Pursuant to Section 13267 of the California Water Code, the Discharger shall, **on or before 30 May 2003**, submit the following information as an addendum to the Final Closure and Postclosure Maintenance Plan (FCP) for the landfill:

	Item	Title 27 Section
a.	A Current Federal Emergency Management Agency (FEMA) flood map	21750(d)(2)
b.	A map showing all wells within a 250 foot radius north of the landfill and all wells within a one-mile radius south of the landfill	21750(h)(1)
c.	A site geologic map and cross sections	21750(f)(1)
d.	Slope stability analysis demonstrating the stability of the final cover slopes under static and dynamic conditions	21750(f)(5)
e.	A waste acceptance program report for wastes used in landfill closure	20230
f.	Closure and Postclosure Cost Estimates	21769(c)(2)(A)

The information requested above is required for completion of the FCP in accordance with Section 21769(d) of Title 27 and for approval of the FCP by the Executive Officer. Any significant changes to the FCP made after completion and approval of the FCP shall require a revision of this Order.

11. **On or before 30 June 2003**, the Discharger shall submit for approval by the Executive Officer a technical report which describes statistical and non-statistical data analysis methods proposed for background and detection monitoring, in accordance with Detection Monitoring Specification F.15 herein and Section 20415(e)(7) of Title 27.

12. The Discharger shall close of the landfill in accordance with the following schedule:

Task	Due Date
a. Submit complete final design report, CQA plan, construction specifications and drawings to the City of Sacramento and Regional Board	15 May 2003
b. Begin construction of final cap and detention basin	Within 20 Days of Receiving Permits and Approvals From the City of Sacramento and Sacramento County Environmental Management Department
c. Winterize site and submit annual winterization report	Per MRP (Section H.2)
d. Submit project status report	15 November 2003
e. Complete of final cap and detention basin	1 November 2004
f. Submit Closure Certification Report	15 December 2004

13. The Discharger shall conduct an investigation to determine whether the landfill generates landfill gas (LFG), whether LFG may be causing or contributing to elevated concentrations of TDS and bicarbonate in the groundwater, and whether LFG controls are needed to protect water quality. The investigation shall be conducted in accordance with the following schedule:

Item	Due Date
a. Submit investigation work plan and schedule for the installation and sampling of gas monitoring probes/wells consistent with the MRP.	1 July 2003
b. Install gas monitoring probes/wells per work plan schedule	1 September 2003
c. Initiate sampling of gas monitoring probes/wells per work plan schedule	Third Quarter 2003
d. Submit monitoring results in monitoring reports	Semiannually Per MRP
e. Complete LFG investigation, submit report	1 September 2004
f. Conduct long term LFG monitoring as necessary	Per MRP

14. All reports and transmittal letters shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if;
 - 1) The authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - 3) The written authorization is submitted to the Regional 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.”
15. 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.
16. 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.
17. The Discharger shall notify the Regional Board in writing of any proposed change in ownership or responsibility for construction or operation of the landfill. 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 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 H.14 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.

18. The Discharger shall also notify the Regional Board of any proposed land use or closure plan changes. This notification shall be given 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these waste discharge requirements.
19. The Regional Board will review this Order periodically and will revise these requirements when necessary.

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 Board, Central Valley Region, on 25 April 2003.

THOMAS R. PINKOS, Executive Officer

AMENDED

JDM: 4/25/03

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0075

MONITORING AND REPORTING PROGRAM
FOR
FLORIN PERKINS LANDFILL, INC.;
NANCY C. CLEAVINGER,
TRUSTEE OF THE NANCY C. CLEAVINGER REVOCABLE TRUST;
AUDREY A. HUNT, TRUSTEE OF THE AUDREY A. HUNT REVOCABLE TRUST;
JANET E. HARVEY, TRUSTEE OF THE JANET E. HARVEY REVOCABLE TRUST;
SALLY R. DAVIS, AND SUCCESSOR IN TRUST,
TRUSTEE OF THE SALLY R. DAVIS TRUST;
AUDREY A. HUNT AND NANCY C. CLEAVINGER, TRUSTEES, UNDER A
TESTAMENTARY TRUST FOR SALLY R. DAVIS UNDER THE TERMS OF THE WILL OF
ROBERT EARL DAVIS AS ESTABLISHED BY DECREE OF DISTRIBUTION ENTERED
ON MARCH 28, 1991;
VIRGINIA A. PALMER, TRUSTEE OF THE VIRGINIA A. PALMER REVOCABLE TRUST;
GAIL CHRISTINE BROWN, TRUSTEE OF THE DONALD BRUCE BROWN AND
GAIL CHRISTINE BROWN REVOCABLE TRUST
FOR CLOSURE OF THE
JACKSON ROAD LANDFILL
AN UNCLASSIFIED LANDFILL
SACRAMENTO COUNTY

This landfill is an existing unclassified waste management unit under Section 20080(d) of Title 27 of the California Code of Regulations. The landfill was developed in a former gravel quarry pit and is unlined. During its operation, the landfill was authorized to accept only inert solid wastes. The landfill ceased operations in 1993 but has not yet been closed. The Final Closure Plan proposes a non-prescriptive cover consisting of two feet of clean vegetative cover soil. There will be no low hydraulic conductivity layer.

Section 13360(a)(1) of the California Water Code 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. No release has been confirmed at the site, however possible elevated concentrations of inorganic constituents have been detected down gradient of the landfill, including total dissolved solids (TDS) up to 570 mg/L and bicarbonate up to 375 mg/L. Concentrations of these constituents detected on the upgradient perimeter of the site average about 300 mg/L and 80 mg/L respectively. The WDRs require the Discharger to install gas monitoring probes/wells to investigate whether the landfill generates landfill gas (LFG) and this monitoring and reporting program requires the Discharger to monitor LFG to determine whether it may be causing or contributing to elevated concentrations of bicarbonate in the groundwater.

The Discharger shall maintain water quality monitoring systems which are appropriate for detecting a release from the landfill in accordance with Sections 20080(d)(1) and 20380 et seq. of Title 27. Compliance with this MRP is ordered by Waste Discharge Requirements (WDRs) Order No. R5-2003-0075.

A. SUMMARY OF MONITORING & REPORTING FREQUENCIES

Table A

Section	Reporting	Reporting Frequency
B.	1. Semiannual Report	Semiannually
	2. Annual Summary Report	Annually
	3. Constituents of Concern Report ¹	Every 5 years
C.	Water Quality Protection Standard Report	Update as necessary
	Monitoring	Monitoring Frequency
D.	Waste Acceptance Monitoring	Daily (during closure construction)
E.	Landfill Gas Monitoring	Quarterly (field monitoring only)
		Semiannually (for at least one year and thereafter if LFG is present)
F.	Groundwater Monitoring:	
	1. Elevation and Gradient	Quarterly
	2. Detection Monitoring	Semiannually
	3. Constituents of Concern	Every 5 years
G.	Surface Water Monitoring	Semiannually
H.	Facility Monitoring	Quarterly

1. The first five-year COC monitoring report under this Order shall be submitted by 31 January 2004.

B. REPORTING

The Discharger shall report monitoring data and other information required in this MRP **Semiannually**. The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2003-0075 and the Standard Provisions and Reporting Requirements (April 2000).

Semiannual Reports

1. Each semiannual monitoring report shall include the following information:
 - a. A tabular summary of the monitoring data so that the date, constituents, concentrations, concentration limit, and the units are readily discernible. The data shall be presented in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof;
 - b. A compliance evaluation summary for the monitoring period.
 - c. Field and laboratory tests sheets.

Annual Report

2. An Annual Report shall also be prepared and submitted in accordance with Reporting Requirement G.6 of the WDRs. The report shall summarize the monitoring results for the prior year and include a discussion of compliance with the WDRs and the Water Quality Protection Standard. The report shall contain both tabular and graphical summaries of the prior year's monitoring data, including time series plots of historical monitoring data for each monitoring parameter/COC. An electronic copy of the data shall also be provided as required under the WDRs. The Annual Report may be included in the second semiannual report for each year.

Reports which do not comply with the above-required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements.

The Semiannual and Annual Monitoring Summary 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:

Table B

<u>Report</u>	<u>Reporting Period Ends</u>	<u>Date Report Due</u>
Semiannual	30 June	31 July
	31 December	31 January
Annual	31 December	31 January

c. WATER QUALITY PROTECTION STANDARD (Section 20390)

The Water Quality Protection Standard shall consist of all Constituents of Concern, Concentration Limits for each constituent of concern, Monitoring Points, Point of Compliance, and the Compliance Period.

1. Constituents of Concern (Section 20395 of Title 27)
 The constituents of concern (COCs) for the landfill shall be as follows:

Table C

Constituents of Concern	Units	Test Method
Field Parameters		
PH	pH units	See Attachment D
Specific conductance	µMhos/cm	See Attachment D
Temperature	°C, °F	See Attachment D
Turbidity	NTU	See Attachment D
General Minerals		
Total Dissolved Solids (TDS)	mg/L	2540C
Total Alkalinity	meq/L	2310B
Anions & Cations	mg/L	See Attachment D
Inorganics (dissolved)	µg/L	See Attachment D
Volatile Organic Compounds	µg/L	USEPA Method 8260B
Semi-Volatile Organic Compounds	µg/L	USEPA Method 8270

Constituents of Concern	Units	Test Method
Organophosphorus Pesticides	µg/L	USEPA Method 8141A
Chlorinated Herbicides	µg/L	USEPA Method 8151
Organochlorine Pesticides	µg/L	USEPA Method 8081A
Polychlorinated Biphenols (PCBs)	µg/L	USEPA Method 8082

1. The first five-year COC monitoring event under this Order shall be conducted during the Second Half 2003.
2. Concentration Limits (Section 20400)

Statistical
For naturally-occurring constituents for which at least 10% of the data from background samples equal or exceed their respective MDL, the Concentration limit shall be determined using the statistical data analysis methods described in the Section 20415(e)(8) technical report prepared in accordance with Detection Monitoring Specifications 15 and 17 of the WDRs.

Nonstatistical
For all non-naturally occurring COCs and naturally-occurring COCs for which less than 10% of the data from background samples equal or exceed their respective MDL, the Concentration limit shall be the MDL.
3. Monitoring Points (Section 20405)
The monitoring points for groundwater and surface water detection monitoring shall be as listed in Tables D.1 and E.1 herein. The monitoring points for landfill gas (unsaturated zone) monitoring shall be the landfill gas probe locations, once installed.
4. Point of Compliance
The point of compliance (POC) for the water standard is a vertical surface located at the hydraulically down gradient limit of the Unit that extends through the uppermost aquifer underlying the Unit. The point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. The POC wells shall be MW-1, MW-2, and any future shallow wells installed along the down gradient or side gradient perimeter of the landfill.
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. WASTE ACCEPTANCE MONITORING

Wastes accepted for use in landfill closure shall be monitored as follows:

Table D

<u>Parameter</u>	<u>Units</u>	<u>Reporting Frequency</u>
Solid Waste		
Description of waste ¹	---	Semiannually
Source	---	Semiannually
Quantity	cubic yards, tons	Semiannually
Location/elevation discharged	---	Semiannually
Construction purpose	---	Semiannually

1. From waste acceptance program daily logs.

Waste acceptance monitoring shall be conducted at the landfill gate when loads are brought in for construction. The waste information shall be recorded in daily logs and summarized in the semiannual monitoring reports.

E. LANDFILL GAS (UNSATURATED ZONE) MONITORING

All landfill gas probes shall be monitored as follows:

Table E

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Measurement Method</u>
Field Parameters¹			
Gas Pressure	psig	Quarterly	Meter
Ambient Temperature	°C, °F	Quarterly	Meter
Methane	%	Quarterly	Meter
Carbon Dioxide	%	Quarterly	Meter
Oxygen	%	Quarterly	Meter
Organic Vapors	ppmv	Quarterly	Photo-Ionization Detector (PID)
Monitoring Parameters²			
Oxygen	%	Semiannually	USEPA Test Method 3C
Carbon Dioxide	%	Semiannually	USEPA Test Method 3C
VOCs	ppmv	Semiannually	USEPA Test Method TO-14

1. Field meters shall be calibrated for each parameter before use. The PID shall be calibrated to a hexane or other straight-chain fuel-related hydrocarbon. The results shall be presented as benzene equivalents.
2. Semiannual gas sampling required for at least one year and thereafter if field monitoring indicates the presence of methane (greater than 1.0 percent by volume) or organic vapors (greater than 1.0 ppmv) during either quarter of a reporting period.

Field and calibration logs for each monitoring event shall be included in each monitoring report.

F. GROUNDWATER MONITORING

1. Groundwater Elevation Monitoring

The groundwater surface elevation (in feet and hundredths, MSL) in all wells and piezometers shall be measured on a quarterly basis. Groundwater elevations taken prior to purging the well and sampling for Monitoring Parameters may be used to fulfill this requirement. Groundwater elevations for all upgradient and down gradient wells for a given groundwater body shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater gradient and direction. The results of groundwater elevation monitoring shall be displayed on a water table contour map and/or groundwater flow net for the site and included in each monitoring report. The Discharger shall use the groundwater elevation monitoring data to determine the following:

- a. The groundwater flow velocity
- b. The gradient direction in the upper aquifer, and in any additional zone of saturation monitored pursuant to this MRP
- c. Times of highest and lowest elevations of the water levels in the wells
- d. Separation of groundwater from the lowest point of the unit

The results of these determinations shall be included in the semi-annual reports.

2. Background and Detection Monitoring

The Discharger shall install and operate a groundwater detection monitoring system that complies with the applicable provisions of Section 20415 and Section 20420 of Title 27. The Discharger shall perform Background and Detection Monitoring of the uppermost aquifer in accordance with the Detection Monitoring Specifications of the WDRs. In accordance with Section 20415(e)(6), initial sampling shall be conducted in all new background monitoring wells as necessary for selecting data analysis methods and for establishing background values. Initial monitoring conducted in new background wells shall include quarterly sampling for at least one year, including the times of expected highest and lowest ground water surface elevations.

The monitoring points for detection monitoring and trend analysis shall be as follows:

Upgradient – MW-3

Down Gradient (Point of Compliance) – MW-1, MW-2

The detection monitoring schedule shall be as follows:

Table F: Detection Monitoring Schedule

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Monitoring Method</u>	<u>Data Analysis¹</u>
Field Parameters				
Specific conductance	µmhos/cm	Semiannually	---	---
pH	pH units	Semiannually	Interwell	---
Temperature	°C, °F	Semiannually	---	---
Turbidity	NTU	Semiannually	---	---
Monitoring Parameters				
TDS	mg/L	Semiannually	Interwell	Statistical
Total Alkalinity	meq/L			
Major Anions (Attachment C)	mg/L	Semiannually	Interwell	Statistical, Other ²
Major Cations (Attachment C)	mg/L	Semiannually	Interwell	Statistical, Other ²
VOCs (Attachment C)	µg/L	Annually	Intrawell	Statistical/Non-Statistical
Dissolved Inorganics (Attachment C)	µg/L	Annually	Interwell & Intrawell	Statistical/Non-Statistical
Constituents of Concern³				
See Table C & Attachment D	---	Every 5 years	Interwell	Statistical & Non-statistical

1. Monitoring data analysis shall be conducted in accordance with the technical report required under Monitoring Specification E.15 of the WDRs.
2. Data analysis shall include trend analysis and an evaluation of water chemistry by appropriate methods (i.e. Menn-Kendall, ion balance, piper diagram, stiff diagram etc.).
3. The first five-year COC monitoring event under this Order shall be conducted during the Second Half 2003.

The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved SAP. Samples shall be analyzed for the monitoring parameters and COCs in accordance with the methods and frequency specified in the above table. A sufficient number of samples shall be taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Reporting Period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Collection and analysis of samples shall be in accordance with procedures set forth in the Sampling and Analysis Plan required under WDR Detection Monitoring Specification F.5.

G. SURFACE WATER MONITORING

The Discharger shall install and operate a surface water detection monitoring system where appropriate that complies with the applicable provisions of Sections 20415 and 20420 of Title 27. The Semiannual Reports shall include the results of surface water monitoring and evaluation of potential impacts of the facility on surface water quality and compliance with the Water Quality Protection Standard. The Discharger shall obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Industrial Activities (Water Quality Order No. 97-03-DW) prior to any discharge of storm water from the site to a surface water.

1. The surface water monitoring locations shall be as follows:

Table G.1: Surface Water Monitoring Locations¹

<u>Monitoring Point</u>	<u>Location</u>
SW-1	Jackson Road Storm Drain - run on
SW-2	Detention Basin Discharge - runoff
SW-3 ²	Kiefer Boulevard Storm Drain - upstream
SW-4 ²	Kiefer Boulevard Storm Drain - downstream

1. See Attachment B: Facility Map
2. Sampling at these monitoring points may be discontinued one year after the Closure Certification Report has been submitted and approved by the Executive Officer in accordance with Construction Specification D.7 and Provision 12 of the WDRs.

2. The surface water monitoring schedule shall be as follows:

Table G.2: Surface Water Monitoring Program

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u> ¹
Field Parameters		
Temperature	°C, °F	Quarterly
Specific conductance	µmhos/cm	Quarterly
pH	pH units	Quarterly
Total Suspended Solids (TSS)	mg/L	Quarterly
Monitoring Parameters ¹		
TDS	mg/L	Semiannually
Total Alkalinity	meq/L	Semiannually
Major Anions (Attachment C)	mg/L	Semiannually
Major Cations (Attachment C)	mg/L	Semiannually
Constituents of Concern ¹		
Attachment D	---	Every 5 years

1. Monitoring for these landfill waste constituents of concern may be discontinued one year after the Closure Certification Report has been submitted and approved by the Executive Officer in accordance with Construction Specification D.7 and Provision 12 of the WDRs. Monitoring for the above Field Parameters shall continue to be conducted at locations SW-1 and SW-2 as specified in Table G.1 under this Order and in accordance with the General Industrial Storm Water Permit.

H. FACILITY MONITORING

Standard Observations

1. In accordance with the FCP, the Discharger shall conduct quarterly inspections of the landfill to identify the need for maintenance and repairs. Standard Observations shall also be performed on a quarterly basis and shall include those elements identified in Reporting Requirement G.4.f of the WDRs. Each monitoring report shall include a summary and certification of completion of all Standard Observations. Necessary repairs shall be completed within 30 days of each inspection. Field logs of these inspections and documentation of the repairs shall be included in each monitoring report.

Site Winterization & Storm Events

2. Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility for the purpose of winterizing the site. The inspection shall identify any damage to the landfill cover, grade, precipitation and drainage controls, access roads and other landfill facilities. Any necessary construction, maintenance, or repairs to these facilities shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit a report describing the results of the winterization inspection and the repair measures implemented, including photographs of the problem and the repairs.

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, including photographs of the problem and the repairs.

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

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____ 25 April 2003

(Date)

Attachments

JDM: 4/25/03

INFORMATION SHEET

The Jackson Road Landfill is an inactive unlined landfill sited in a gravel quarry pit. The landfill is an existing unclassified waste management unit under Section 20080(d) of Title 27. The disposal area comprises about 23 acres. Previous waste discharge requirements limited waste disposal at the landfill to inert solid wastes. Title 27 defines inert waste as follows:

Inert waste is that subset of solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste.

The landfill accepted wastes from 1977 to 1994. From 1977 to 1993, Chet Hulsey operated the landfill under previous Waste Discharge Requirements (WDR) Order Nos. 78-37, 80-062, and 89-201. Florin Perkins Landfill Inc. operated the landfill from 1993 to 1994 under closure WDR Order No. 94-261. All previous WDRs limited the discharge to inert solid wastes. Orders 78-37 and 80-062 allowed the landfill to accept up to ten percent of wood and paper wastes, while subsequent Orders limited the discharge to non-decomposable wastes. No Solid Waste Facilities Permit was issued by the Local Enforcement Agency because the landfill is unclassified. The landfill ceased operations in 1994 but has not yet been closed.

The Final Closure Plan proposes a non-prescriptive cover consisting of two feet of clean vegetative cover soil. There will be no low hydraulic conductivity layer. Storm water runoff will be routed to an onsite detention basin to be constructed along the northeastern side of the site and then discharged to a City storm drain along Kiefer Boulevard. Detention of storm water flows from the site is necessary due to capacity limitations of the City storm drain. A soil berm will also be constructed along the eastern perimeter of the site to prevent runoff onto the adjacent property owned by Teichert Land Company. The revised WDRs include a schedule for completion of landfill closure in 2004.

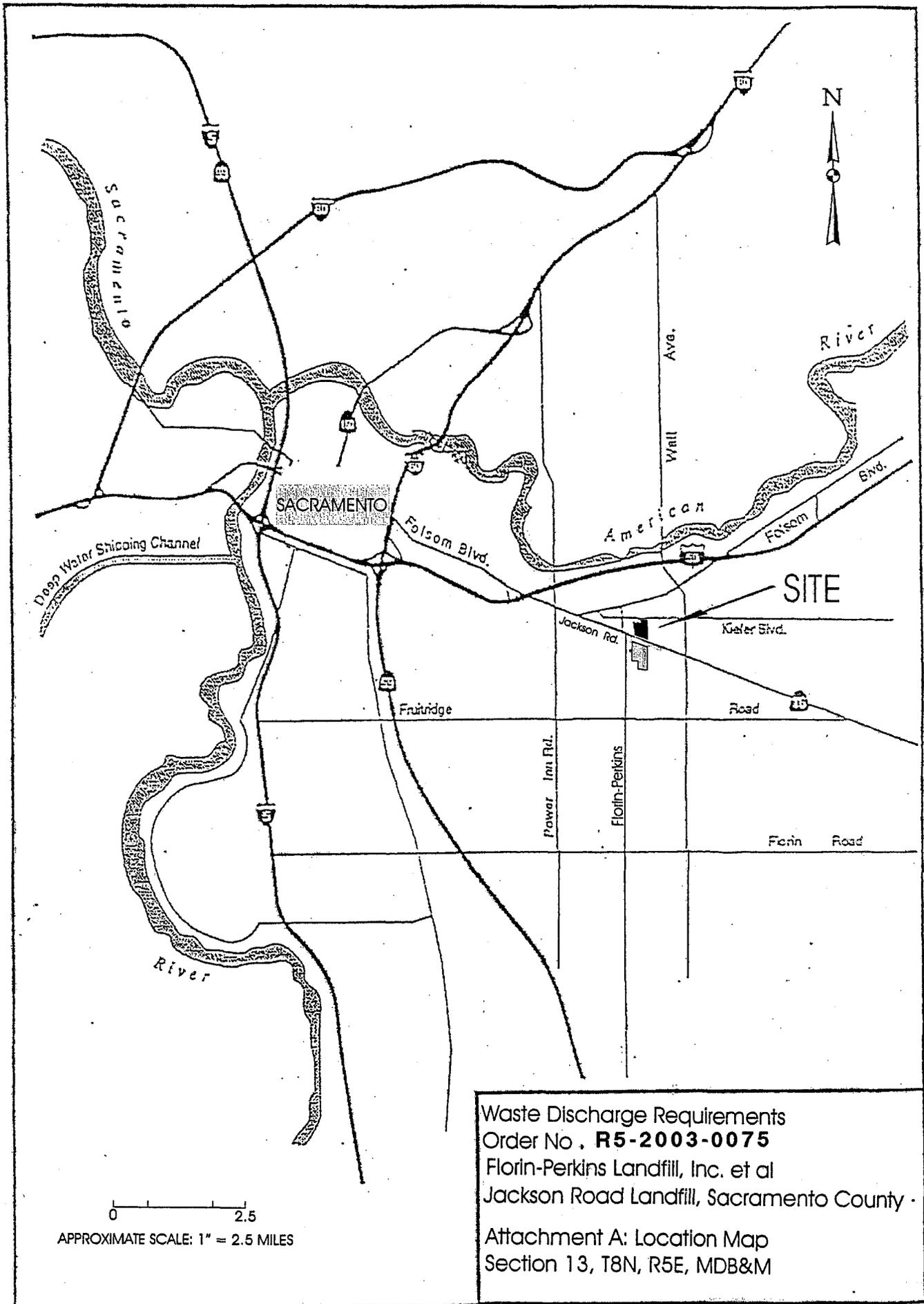
While no release has yet been confirmed at the site, historical groundwater monitoring data indicates possible elevated concentrations of inorganic constituents down gradient of the landfill, including total dissolved solids (TDS) up to 570 mg/L and bicarbonate up to 375 mg/L. Concentrations of these constituents detected on the upgradient perimeter of the site average about 300 mg/L and 80 mg/L respectively. The applicable water quality standards for the protection of groundwater beneficial uses include the agricultural standard of 450 mg/L and the secondary drinking water standard (maximum contaminant level) of 500 mg/L. In order to determine whether there may have been an historic release from the landfill, these revised WDRs requires that the discharger monitor for all major anions and cations and evaluate water quality trends and water chemistry. The WDRs also require the Discharger to conduct an investigation to determine whether the landfill is generating landfill gas (LFG) and whether LFG may be causing or contributing to elevated concentrations of bicarbonate in the groundwater. The Monitoring and Reporting Program requires the Discharger to install gas monitoring probes/wells and monitor for LFG.

INFORMATION SHEET, ORDER NO. R5-2003-0075
FLORIN PERKINS LANDFILL, INC. ET AL.
JACKSON ROAD LANDFILL
SACRAMENTO COUNTY

-2-

The site is in the Morrison Creek hydrologic area, tributary to the Sacramento River. Storm water flows in the site area captured in the City storm drain are discharged to the American River.

AMENDED



Waste Discharge Requirements

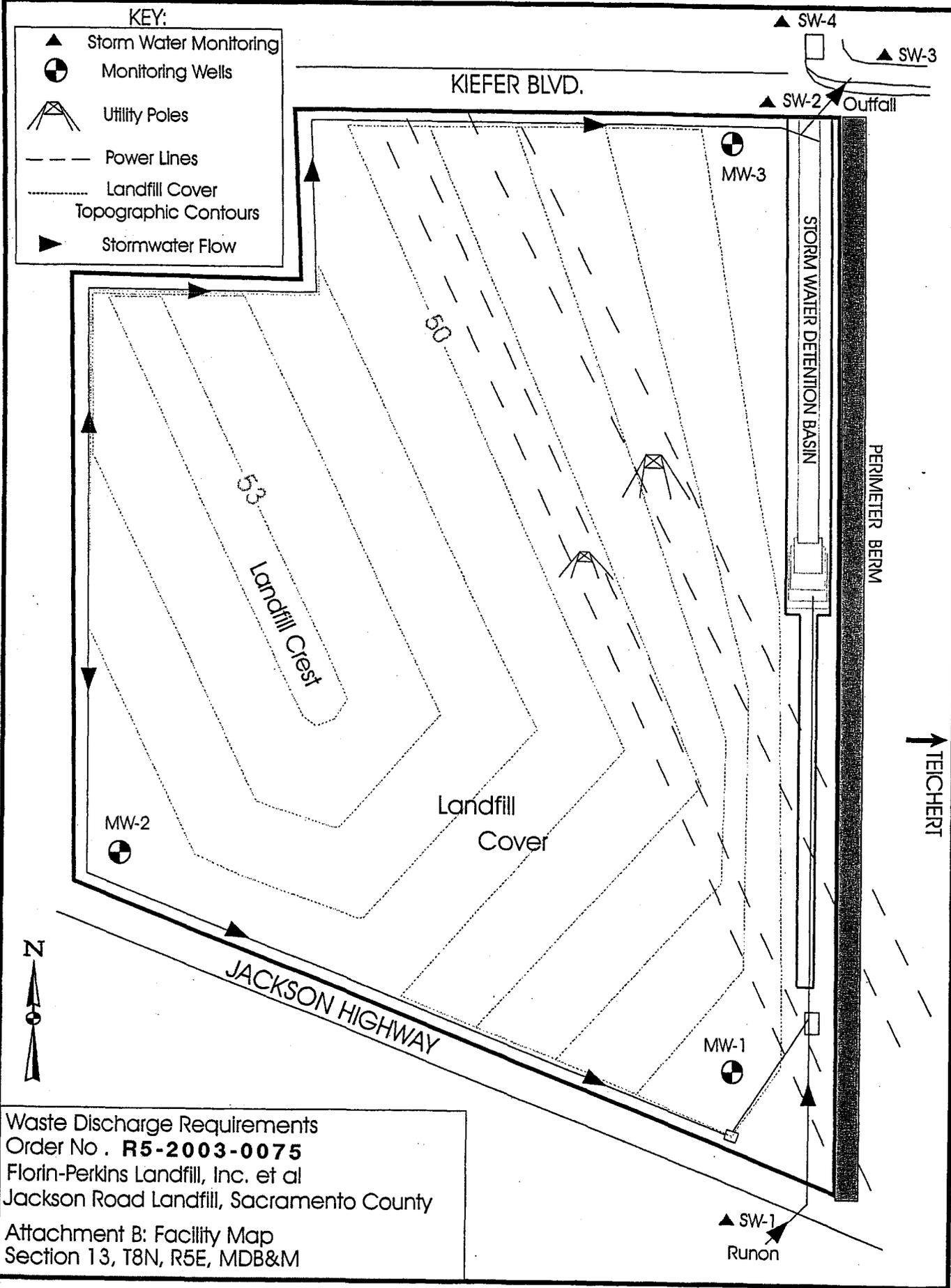
Order No. **R5-2003-0075**

Florin-Perkins Landfill, Inc. et al
 Jackson Road Landfill, Sacramento County

Attachment A: Location Map
 Section 13, T8N, R5E, MDB&M

KEY:

- ▲ Storm Water Monitoring
- ⊕ Monitoring Wells
- ⚡ Utility Poles
- Power Lines
- ⋯ Landfill Cover
- ⋯ Topographic Contours
- ▶ Stormwater Flow



Waste Discharge Requirements
 Order No. **R5-2003-0075**
 Florin-Perkins Landfill, Inc. et al
 Jackson Road Landfill, Sacramento County
 Attachment B: Facility Map
 Section 13, T8N, R5E, MDB&M

ATTACHMENT C

MONITORING PARAMETERS & APPROVED USEPA ANALYTICAL METHODS

Field Parameters	USEPA Test Method
pH	150.1
Specific conductance	2510
Temperature	2550
Turbidity	2130B
Total Suspended Solids (surface water only)	2540D
General Minerals	USEPA Test Method
Total Dissolved Solids (TDS)	2540C
Total Alkalinity	2310B
<u>Major Anions</u>	
Bicarbonate	2310B
Chloride	300 (anion scan)
Nitrate – Nitrogen	300 (anion scan)
Sulfates	300 (anion scan)
<u>Major Cations</u>	
Calcium	200.7 (trace method)
Magnesium	200.7 (trace method)
Potassium	200.7 (trace method)
Sodium	200.7 (trace method)
Dissolved Inorganics/Metals¹	USEPA Test Method
Aluminum	6010
Antimony	6010
Arsenic	7061
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Chromium VI ⁺	7197
Cobalt	6010
Copper	6010
Cyanide	9010
Iron	6010
Lead	7421
Manganese	6010
Mercury	7470
Molybdenum	200.7 (trace method)
Nickel	7520
Selenium	7741

ATTACHMENT C (CON'T)

Silver	6010
Sulfide	9030
Thallium	7841
Tin	6010
Vanadium	6010
Zinc	6010

-
1. All samples shall be field filtered prior to dissolved inorganics analysis.

Volatile Organic Compounds (VOCs)¹ (by USEPA Method 8260B):

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bis(2-ethylhexyl) phthalate
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)

ATTACHMENT C (CON'T)

1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Isodrin
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl methacrylate
Methyl tert-butyl ether (MTBE)
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)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

ATTACHMENT D

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Field Parameters	USEPA Test Method
pH	150.1
Specific conductance	2510
Temperature	2550
Turbidity	2130B
Total Suspended Solids (surface water only)	2540D
General Minerals	USEPA Test Method
Total Dissolved Solids (TDS)	2540C
Total Alkalinity	2310B
<u>Major Anions</u>	
Bicarbonate	2310B
Chloride	300 (anion scan)
Nitrate – Nitrogen	300 (anion scan)
Sulfates	300 (anion scan)
<u>Other Anions</u>	
Carbonate	2310B
Bromide	300 (anion scan)
Fluoride	300 (anion scan)
Nitrite – Nitrogen	300 (anion scan)
Phosphate	300 (anion scan)
Sulfite	310.1
<u>Major Cations</u>	
Calcium	200.7 (trace method)
Magnesium	200.7 (trace method)
Potassium	200.7 (trace method)
Sodium	200.7 (trace method)
<u>Other Cations</u>	
Aluminum	200.7 (trace method)
Chromium	200.7 (trace method)
Cobalt	200.7 (trace method)
Copper	200.7 (trace method)
Iron	200.7 (trace method)
Lead	200.8 (trace method)
Manganese	200.7 (trace method)
Zinc	200.7 (trace method)

ATTACHMENT D (CON'T)

Dissolved Inorganics/Metals¹	USEPA Test Method
Aluminum	6010
Antimony	6010
Arsenic	7061
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Chromium VI ⁺	7197
Cobalt	6010
Copper	6010
Cyanide	9010
Iron	6010
Lead	7421
Manganese	6010
Mercury	7470
Molybdenum	200.7 (trace method)
Nickel	7520
Selenium	7741
Silver	6010
Sulfide	9030
Thallium	7841
Tin	6010
Vanadium	6010
Zinc	6010

1. Leachate, groundwater, and unsaturated zone samples shall be field filtered prior to dissolved analysis.

Volatile Organic Compounds (VOCs)¹ (by USEPA Method 8260B):

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bis(2-ethylhexyl) phthalate
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride

ATTACHMENT D (CON'T)

Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Isodrin
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl methacrylate
Methyl tert-butyl ether (MTBE)
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene

ATTACHMENT D (CON'T)

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)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semivolatile 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
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)

ATTACHMENT D (CON'T)

2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
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 methacrylate
Ethyl methanesulfonate

ATTACHMENT D (CON'T)

Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
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

ATTACHMENT D (CON'T)

Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Organophosphorus Pesticides (USEPA Method 8141A):

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

Chlorinated Herbicides (USEPA Method 8151):

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

ATTACHMENT D (CON'T)

Organochlorine Pesticides (USEPA Method 8081A)

Aldrin
BHCs
Chlordane
4,4'-DDD
4,4'-DDE
4,4'-DDT
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Lindane
Methoxychlor
Toxaphene

Polychlorinated Biphenols (PCBs, USEPA Method 8082)

PCB-1016
PCB-1221
PCB-1232
PCB-1242
PCB-1248
PCB-1254
PCB-1260