CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0021

WASTE DISCHARGE REQUIREMENTS FOR TRC COMPANIES INC. AND GBF HOLDINGS, LLC. FOR POST-CLOSURE OF CONTRA COSTA SANITARY LANDFILL CONTRA COSTA COUNTY

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

1. GBF Holdings, LLC a wholly owned subsidiary of TRC Companies Inc. (hereafter Discharger) owns Contra Costa Sanitary Landfill, a closed municipal solid waste landfill near the intersection of Somersville Road and James Donlon Boulevard, Antioch, Contra Costa County, in Section 27, T2N, R1E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.

2. The landfill consists of approximately 84.23 acres of unincorporated land within the City of Antioch boundaries consisting of Assessor's Parcel Number 076-021-016.

3. The site originally consisted of two disposal areas, the Pittsburg landfill and the GBF landfill. The Pittsburg landfill covered 24 acres on the west side of the property. The Pittsburg Disposal Service inc. and others operate this landfill for the City of Pittsburg from 1946 until 1987. The GBF site covered 59 acres on the east side of the property. The eastern area included the GBF landfill, a solid waste landfill operated by Contra Costa Waste Service, and at least 10 unlined industrial waste disposal ponds operated from the early 1960s to 1974. Between 1974 and 1978, the ponds were closed by removing some oil and then placing solid waste to absorb the remaining liquid. Drums and other waste containers were left in the trenches. The GBF landfill subsequently expanded over the pond and trench area.

4. In 1987 the two landfills were consolidated and solid waste of the Contra Costa Sanitary Landfill expanded over the top of Pittsburg landfill. From 1987 to January 2001 both sites were owned and operated by Contra Costa Waste Services as Contra Costa Sanitary Landfill a single, contiguous landfill (see Attachment B, Site Map, which is incorporated herein and made part of this Order). The facility stopped receiving waste on March 31, 1992 under Stipulation for Judgment Action #C91-02132 with Contra Costa County. In 1993, Contra Costa Waste Service began to place a cover on the landfill.

5. On 7 December 2001, the Board adopted revised Waste Discharge Requirements (WDRs) Order No. 5-01-267 for closure of the Contra Costa Sanitary Landfill. The discharger completed closure construction in the spring of 2002, submitted the required Construction Quality Assurance (CQA) Report on 13 May 2002, and submitted revisions to the CQA Report on 22 July 2002. On 7 August 2002, the Acting Executive Officer issued a Certification of Closure for the landfill. These revised WDRs are written to regulate post-closure maintenance of the facility.

6. The facility is under corrective action due to groundwater pollution and other environmental impacts per Department of Toxic Substances Control (DTSC) Remedial Action Order (RAO) Docket No. 87/88-012, dated September 25, 1987.

7. Groundwater contamination at the site is characterized by volatile organic compounds (VOCs), dissolved metals and other water quality parameters. The groundwater downgradient (north) from the Site is contaminated up to a distance of at least 2,500 feet from the northern boundary of the Site.

SITE DESCRIPTION

8. Analysis by the Discharger estimated the maximum probable earthquake of 6.9 on the Greenville Fault would produce the largest mean peak rock acceleration of 0.44 g. The static factors of safety are above 1.6 for each of the critical cross sections analyzed. The calculated earthquake-induced displacements are less than 12 inches for the analyzed slope sections, and less than 1 inch for the cover system.

9. Land uses within 1,000 feet of the facility are residential, other closed landfills and open space. The closest residential development is approximately 300 feet from the eastern boundary of the site; additional residential developments are approximately 400 feet from the northeast boundary of the site. Additional residential development is planned for areas around this site. The 17-acre Antioch landfill, a closed burn dump, is immediately west and northwest of the site; and the 16-acre Lynch landfill is southwest of the site. The Antioch landfill is owned by the City of Antioch and the Lynch landfill is owned by Good Chance Management LLC.

10. The site receives an average of 14 inches of precipitation per year as measured at the Antioch pumping station two miles northeast of the site between 1963 and 1970. The mean evaporation for this facility is 74 inches per year. Average annual net evaporation at the facility is 60 inches.

11. The 100 year, 24 hour precipitation event for the facility is 4.5 inches as taken from the Precipitation Duration-Frequency Curve, 100 years recurrence interval, Contra Costa County Public Works Department, dated July 1977.

12. The waste management facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map.

13. There are no municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the site.

WASTE AND SITE CLASSIFICATION

14. The Pittsburg landfill accepted primarily municipal solid waste and some industrial liquid wastes. The GBF landfill accepted non-hazardous solid waste. The Industrial Tank disposal ponds received bulk liquid industrial wastes including hazardous waste for percolation and evaporation. In addition, drums and other containers of liquid hazardous waste were landfilled in trenches at the site.

SURFACE AND GROUND WATER CONDITIONS

15. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basin, Fourth Edition, designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

16. Surface drainage is toward Markley Creek, an intermittent stream that is a tributary to the San Joaquin River. The site is in the North Diablo Range Hydrologic Area 543.00 of the San Joaquin River Basin.

17. The landfill is on the north flank of the Diablo Range. The designated beneficial uses of the San Joaquin Delta, as specified in the Basin Plan, are municipal and domestic supply, agricultural supply, industrial service and process supply, water contact and non-contact water recreation, warm and cold fresh water habitat, wildlife habitat, and navigation.

18. A total of three aquifer zones, the upper, the deeper and the lower deeper saturated zones, are recognized at this location. The first continuous groundwater (upper saturated zone) varies from 45 to 92 feet below ground surface in the vicinity of the site. Groundwater elevations in the upper saturated zone range from 65 feet MSL to 95 feet MSL. Groundwater in all three zones is semi-confined.

19. Monitoring data indicates background groundwater quality in the upper aquifer zone has an electrical conductivity (EC) ranging between 673 and 910 micromhos/cm, with total dissolved solids (TDS) ranging between 470 and 520 mg/l.

20. The direction of groundwater flow in the upper aquifer zones is toward the north. The average groundwater gradient in the upper aquifer zone is approximately 0.043 foot per foot in the south adjacent to the landfill to 0.009 foot per foot at the northern extent of the contaminant plume.

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

GROUNDWATER MONITORING

22. This site has a known and well-studied release that includes hazardous constituents. The California Department of Toxic Substances Control (DTSC) is the lead agency for corrective actions at the site. Groundwater quality in three aquifer zones is monitored with a combined well network for detection of additional releases and for corrective action. The monitoring network is designed to comply with both Regional Board and DTSC requirements in a single combined sampling program to eliminate unnecessary effort and expense.

23. The Discharger's monitoring program for groundwater at this facility satisfies the requirements contained in Title 27.

GROUNDWATER DEGRADATION

24. Groundwater monitoring data provide evidence of a release from the landfill. Specifically, carbon tetrachloride, vinyl chloride, 1,2-dichloroethane, 1,1-dichloroethane, 1,1-dichloroethyleme, 1,2-dichloroethylene, 1,2-dichloropropane, perchloroethylene, trichloroethylene, benzene, arsenic, cadmium, total chromium, lead, mercury, and silver have been detected in concentrations greater than MCLs downgradient of the landfill. Elevated concentrations of general water quality parameters (Total Dissolved Solids (TDS), pH, and Electrical Conductivity and several of the metals (aluminum, antimony, iron, manganese, vanadium and zinc) also have been detected.

WASTE MANAGEMENT UNIT

25. The final landfill cover system for the top deck, north side slope and west side slope consists of, in ascending order:

    a. A foundation layer composed of not less than 24-inches of engineered fill;

    b. A low conductivity layer composed of a geosynthetic clay liner (GCL); and

    c. A vegetation layer composed of not less than 18-inches of lightly compacted soil.

26. The final landfill cover system of the south side slope and east side slope consists of, in ascending order:

    a. A foundation layer composed of not less that 24-inches of compacted engineered fill;

b. A low conductivity layer composed of not less than 12-inches of compacted clay, compacted to attain a hydraulic conductivity of 1 X 10^{-6} cm/sec or less; and

c. A vegetation layer composed of not less than 18-inches of lightly compacted soil.

27. The facility is an existing, leaking, unlined, landfill without a leachate collection system. The discharger has demonstrated that suction lysimeters will not operate under the soil conditions that exist under the landfill and that retrofitting the landfill with leachate collection system and pan lysimeter will be unreasonably burdensome. Therefore, the discharger has demonstrated to the satisfaction of the RWQCB that that there is no unsaturated zone monitoring device or method designed to operate under the subsurface conditions existent at the site. Under the provisions of Title 27 Section 20415(d)(5) the facility is exempt from the requirement to establish an unsaturated zone monitoring system.

28. A Phase I Groundwater Remedial System is currently under construction at the landfill. The Phase I system is designed to cutoff the landfill as a source of downgradient groundwater contamination. When complete, the system will consist of 30 groundwater extraction wells and a groundwater treatment system. DTSC is the lead agency for groundwater remediation at this site.

29. Landfill gas is controlled with a system of vertical gas extraction wells, horizontal collectors buried in the refuse, and a gas flare. The system operates at a rate of approximately 400 cfm. The Bay Area Air Quality Management District regulates operation of the Landfill gas collection system.

CEQA AND OTHER CONSIDERATIONS

30. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301.

31. This order implements:

a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*;

b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;

c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and

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

PROCEDURAL REQUIREMENTS

32. 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.

33. The 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.

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

35. Any person adversely affected by this action of the Board may petition the State Water Resources Control Board to review the action. The petition must be received by the State Board within 30 days of the date of issuance of this Order. Copies of the law and regulations applicable to filing the petition will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 5-01-267 is rescinded, and that the TRC Companies Inc. and GBF Holdings LLC, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of 'hazardous waste' or 'designated waste' is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23, California Code of Regulations, Section 2510 et seq., and 'designated waste' is as defined in Title 27.

2. The discharge of wastes outside of a Unit or portions of a Unit specifically designed for their containment is prohibited.

3. The discharge of waste to a closed Unit is prohibited.

4. Facility operations including maintenance and repair 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.

5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

B. DISCHARGE SPECIFICATIONS

1. The discharge of additional nonhazardous or other wastes not already contained within the existing waste management unit is prohibited at this facility.

C. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.

2. The Discharger shall immediately notify the 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 containment facilities or precipitation and drainage control structures.

3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, and construction.

4. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

5. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.

6. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.

7. The Discharger shall maintain a *Storm Water Pollution Prevention Plan* and *Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.

D. POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. The Discharger shall submit for Executive Officer review and approval **prior to** construction, design plans and specifications for any on-site construction or major repairs to landfill structures.

2. The discharger shall perform periodic monitoring of the integrity of the low-hydraulic-conductivity layer.

3. The Discharger shall perform periodic monitoring to identify and address cover problems including at least:

   a. Areas of the vegetative cover requiring replanting;

   b. Eroded portions of the erosion-resistant layer requiring regrading, repair, or increased erosion resistance;

   c. Eroded or damaged portions of the low-hydraulic conductivity layer needing repair or replacement;

   d. Areas lacking free drainage;

   e. Areas damaged by equipment operation; and

   f. Localized areas identified in the iso-settlement survey as having sustained repeated or severe differential settlement.

4. The Discharger shall promptly repair any breach or other cover problem discovered by periodic monitoring.

5. Annually, prior to 1 October, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding and to prevent surface drainage from contacting or percolating through wastes.

6. The Discharger shall maintain the vegetative cover, including fertilization, elimination of species that violate the rooting depth limit, and replanting.

7. At least every five years after completing closure of the landfill the Discharger shall produce and submit to the RWQCB an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover.

8. Prior to conducting any periodic grading operations on the closed landfill, the discharger shall note on a map of the landfill the approximate location and outline of any areas where differential settlement is visually obvious.

9. Construction shall precede only after all applicable construction quality assurance plans have been approved by Executive Officer.

10. Following the completion of any landfill construction, the final documentation required in §20324(d)(1)(C) of Title 27 shall be submitted to the Executive Officer for review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.

11. A third party independent of both the Discharger and the construction contractor shall oversee the performance of all of the construction quality assurance monitoring and testing.

E. DETECTION AND CORRECTIVE ACTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection and the corrective action monitoring programs provisions of Title 27 for groundwater, and surface water, and in accordance with Monitoring and Reporting Program No. R5-2003-0021.

2. The Discharger shall provide Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum 48 hour notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.

3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2003-0021, and the Standard Provisions and Reporting Requirements, dated April 2000.

4. The Water Quality Protection Standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8260 and 8270). The presence of non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells is evidence of a release from the Unit.

5. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2003-0021 and §20415(e) of Title 27.

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 Groundwater and Surface Water Monitoring Plan.

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. 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) reviewing the final laboratory report. 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.

14. 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.

15. 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 §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 §20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

16. The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with §20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Board staff.

17. The Discharger shall use the following nonstatistical method for the VOC_{water} and $VOC_{spg\ (Soil\ Pore\ Gas)}$ Monitoring Parameters and for all Constituents of Concern which are not amenable to the statistical tests above (i.e., less than 10% of the data from background samples that equal or exceed their respective MDL). 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.

    c. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with §20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer.

18. The method shall be implemented as follows:

    a. *For the Volatile Organic Compounds Monitoring Parameter For Water Samples [VOC_{water}]:* For any given monitoring point, the VOC_{water} Monitoring Parameter is a composite parameter addressing all "qualifying VOCs" (in this case, VOCs that are detected in less than 10% of background samples).

        The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.21. and E.23 below, as appropriate) to determine whether a release of VOC_{water} Monitoring Parameter has occurred if the data for any monitoring point meets either of the following triggering conditions:

        1) The data contains two or more qualifying VOCs that equal or exceed their respective MDLs; or

2) The data contains one qualifying VOC that equals or exceeds its PQL.

b. *For the Volatile Organic Compounds Monitoring Parameter For Soil Pore Gas Samples [VOC_{spg}]:* the VOC_{spg} Monitoring Parameter is a composite parameter for soil pore gas addressing all "qualifying VOCs" detectable using either GC or GC/MS analysis for at least a ten liter sample of soil pore gas (e.g., collected in a vacuum canister). It involves the same scope of VOCs as does the VOC_{water} Monitoring Parameter. For the VOC_{spg} test, "qualifying VOCs" consist of all those VOCs which are detectable in less than 10% of background soil pore gas samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.21. and E.23 below, as appropriate) to determine whether a release of VOC_{spg} Monitoring Parameter has occurred if the data for any monitoring point meets either of the following triggering conditions:

1) The data contains two or more qualifying VOCs that equal or exceed their respective MDLs; or

2) The data contains one qualifying VOC that equals or exceeds its PQL.

c. *For Constituents of Concern:* For five-yearly testing of all Constituents of Concern (COCs), the "qualifying constituents" consist of COCs that are detected in less than 10% of applicable background samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.21. and E.23 below, as appropriate) to determine whether a release of COCs has occurred if the data for any monitoring point meets either of the following triggering conditions:

1) The data contains two or more qualifying constituents that equal or exceed their respective MDLs; or

2) The data contains one qualifying constituent that equals or exceeds its PQL.

19. **Non-Statistical Method Retest**. A non-statistical test method may be used by the Discharger to analyze the monitoring data for which it is impractical to conduct a statistical analysis. A non-statistical test method shall include a procedure to verify that there is "measurably significant" evidence of a release from the Unit. For the VOC_{water}, VOC_{spg}, and nonstatistical COC test, the Discharger shall use a discrete retest consisting of two new samples from each indicating monitoring point. The Discharger shall conduct the retest for the standard non-statistical method as follows:

a. **For VOC_{water} and VOC_{spg}** . Because the VOC composite Monitoring Parameter (for water or soil pore gas) is a single parameter which addresses an entire family of constituents likely to be present in any landfill release, **the scope of the laboratory analysis for each of the two retest samples shall include all VOCs detectable in that retest sample**. Therefore, a confirming retest, in accordance with Detection Monitoring Specification E.20.a. and b., above, for either triggering condition in either of the two retest samples, shall have validated the original indication even if the detected constituents in the confirming retest sample(s) differs from those detected in the sample which initiated the retest.

b. **For Constituents of Concern**. Because all Constituents of Concern that are jointly addressed in the non-statistical test above, remain as individual Constituents of Concern, **the scope of the laboratory analysis for the non-statistical retest of Constituents of Concern shall address only those constituents detected in the sample which initiated the retest**. Therefore, the list of "qualifying constituents" for use in the retest, under Detection Monitoring Specification E.20.c., 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.

20. **Response to Detection in Background of VOCs** (or any other constituent which is not naturally in the background and thus is not amenable to statistical analysis):

a. Any time the laboratory analysis of a sample from a background monitoring point, sampled for VOCs, shows either:

1) Two or more VOCs at or above their respective MDL; or

2) One VOC at or above its respective PQL.

Then the Discharger shall:

a) **Immediately** notify the Board by phone;

b) Follow up with written notification by certified mail **within seven days**;

c) Obtain **two** new independent VOC samples from that background monitoring point; and

d) Send such samples for laboratory analysis of all detectable VOCs **within thirty days**.

b. If either or both the new samples validates the presence of VOC(s), using the above criteria, the Discharger shall:

1) **Immediately** notify the Board about the VOC(s) verified to be present at that background monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and

2) If the Discharger believes that the VOC(s) in background is from a source other than the Unit, then:

a) **Within seven days** of determining "measurably significant" evidence of a release, submit to the Board by certified mail a Notification of Intent to make such a demonstration pursuant to §20420(k)(7) of Title 27; and

b) **Within 90 days** of determining "measurably significant" evidence of a release, submit a report to the 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.

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

21. If the Executive Officer determines, after reviewing the submitted report, that the detected VOC(s) most likely originated from the Unit(s), the Discharger shall **immediately** implement the requirements of XI. Response To A Release, C. Release Has Been Verified, contained in the Standard Provisions and Reporting Requirements.

F. 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 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:

      1) The time of water level measurement;

      2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;

      3) The method of purging (the pumping rate; the groundwater elevation at the beginning and end of the purging period; 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 in the well bore prior to sample collection;

4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and

5) A statement that the sampling procedure was conducted in accordance with the approved Groundwater and Surface Water Monitoring 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:

1) For the Unit:

a) Evidence of ponded water at any point on the facility (show affected area on map);

b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and

c) Evidence of erosion and/or of day-lighted refuse.

2) Along the perimeter of the Unit:

a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);

b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and

c) Evidence of erosion and/or of day-lighted refuse.

3) For receiving waters:

a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area;

b) Discoloration and turbidity - description of color, source, and size of affected area;

c) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;

d) Evidence of water uses - presence of water-associated wildlife;

e) Estimated 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 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 Board; and

e. Corrective measures underway or proposed, and corresponding time schedule.

6. The Discharger shall submit an **Annual Monitoring Summary Report** to the Board covering the reporting period of the previous monitoring year. This report shall contain:

   a. Selected monitoring parameters and constituents of concern shall be graphed so as to show historical trends at selected monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. A list of representative parameters and monitoring points for graphing was proposed by the discharger and approved by Board staff. 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 previous two six-month reporting periods, shall be submitted in tabular form as well as in a digital file format acceptable to the Executive Officer. The Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [§20420(h)], in that this facilitates periodic review by the 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.

7. Annually, prior to 1 October the Discharger shall submit a report demonstrating that any necessary erosion control measures have been implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities have been completed to prevent erosion or flooding and to prevent surface drainage from contacting or percolating through wastes.

G. PROVISIONS

1. The Discharger shall maintain a copy of this Order at their local office and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.

2. The Discharger shall comply with all applicable provisions of Title 27 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.

3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2003-0021, which is incorporated into and made part of this Order.

4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.

5. All reports and transmittal letters shall be signed by persons identified below:

    a. For a corporation: by a principal executive officer of at least the level of senior vice-president.

    b. For a partnership or sole proprietorship: by a general partner or the proprietor.

    c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.

    d. A duly authorized representative of a person designated in a, b or c above if;

        1) The authorization is made in writing by a person described in a, b, or c of this provision;

        2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

        3) The written authorization is submitted to the Board.

    e. Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

6. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.

7. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.

8. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.

9. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the 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 Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.5. and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Board.

10. The Discharger shall provide proof to the Board that the deed to the landfill facility property, or some other instrument that is normally examined during a title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that:

    a. the parcel has been used as a landfill;

    b. hazardous wastes have been discharged at this site;

c. use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in WDRs for the landfill;

d. in the event that the Discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a release, then the responsibility for carrying out such work falls to the property owner; and

e. the notation will also comply with any requirements of the Department of Toxic Substance Control (DTSC) and the Contra Costa County Department of Environmental Health. The notation must be approved by the executive officer.

11. The Discharger shall conduct an annual review of the financial assurance for initiating and completing corrective action, and submit a report for Executive Officer review and approval. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.

12. The Discharger shall conduct an annual review of the financial assurance for closure and postclosure maintenance, and submit a report for Executive Officer review and approval. The assurances of financial responsibility shall provide that funds for closure and postclosure maintenance shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.

13. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

Task	**Compliance Date**
A. Deed Restriction	
The Discharger shall record a notation on the deed to the facility property that complies with C. Provisions 10. above.	**31 March 2003**

Task	Compliance Date
B. Financial Assurance Review	
1. Annual Review of Financial Assurance for initiating and completing corrective action (see Provision G.10.)	**30 April each year**
2. Annual Review of Financial Assurance for closure and postclosure maintenance (see Provision G.11.)	**30 April each year**

I, THOMAS R. PINKOS, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 31 January 2003.

_____
THOMAS R. PINKOS, Executive Officer

RDA: 1/31/2003

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0021
FOR
TRC COMPANIES INC
AND
GBF HOLDINGS LLC
FOR
POST-CLOSURE OF
CONTRA COSTA SANITARY LANDFILL
CONTRA COSTA COUNTY

The Discharger shall maintain water quality monitoring systems that are appropriate for detection monitoring and corrective action and that comply with the provisions of Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Chapter 3, Subchapter 3.

Monitoring data indicate a release from the landfill. Specifically, carbon tetrachloride, vinyl chloride, 1,2-dichloroethane, 1,1-dichloroethane, 1,1-dichloroethylene, 1,2-dichloroethylene, 1,2-dichloropropane, perchloroethylene, trichloroethylene, benzene, arsenic, cadmium, chromium (total), lead, mercury, and silver were detected in concentrations greater than MCLs downgradient of the landfill. Elevated concentrations of general water quality parameters (Total Dissolved Solids (TDS), pH and Electrical Conductivity) and several of the metals (aluminum, antimony, iron, manganese, vanadium and zinc) also have been detected.

The California Department of Toxic Substances Control is the lead agency for corrective actions at this site. These WDRs do not address evaluation monitoring or implementation of corrective action which shall be conducted under the RAO.

Compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements Order No. R5-2003-0021. Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes non-compliance with the WDRs and with the Water Code, which can result in the imposition of civil monetary liability.

A. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in non-compliance with the WDRs. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge

requirements or the lack thereof. Graphs for the same constituent shall be plotted at the same scale to facilitate visual comparison of monitoring data. A short discussion of the monitoring results, including notations of any water quality violations, shall precede the tabular summaries. Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed according to the methods listed in Attachment D**.**

B. REQUIRED MONITORING REPORTS

1. Water Quality Protection Standard Report

Any changes to the water quality protection standard will be included in the Annual report.

2. Detection Monitoring and Corrective Action Report

The Discharger shall submit reports of the results of detection monitoring in accordance with the schedules specified in this Monitoring and Reporting Program. Unless otherwise required **monitoring reports shall be submitted** to the Board by the 15th day of the month following the calendar semi-annual period in which the samples were taken or observations made (15 July, 15 January).

3. Annual Monitoring Summary Report

An Annual Report shall be submitted to the Board which summarizes the monitoring results for the previous year and contains both tabular and graphical summaries of the monitoring data. Data for monitoring parameters shall be graphed for the entire period of record to show historical trends at selected wells. If the results indicate that the water quality protection standard is exceeded the report shall include a discussion of the progress toward re-establishment of compliance with waste discharge requirements and water quality protection standard. The annual report shall be submitted to the Board by **31 January** each year.

4. Constituents-of-Concern (COC) 5-Year Report

In the absence of a *new* release the Discharger shall monitor all Constituents of Concern for all Monitoring Points for each monitored medium for all COCs every fifth year, beginning with the quarter ending 30 June 2002 with subsequent COC monitoring efforts being carried out every fifth year thereafter alternately in the Summer (Reporting period ends 30 June) and Winter (Reporting Period ends 31 December). The COC Report may

be combined with a Detection Monitoring Report or an Annual Summary Report having a Reporting Period that ends at the same time.

Standard Observations

Each monitoring report shall include a summary and certification of completion of all Standard Observations for the waste management unit, for the perimeter of the landfill, and for the receiving waters. The standard observations shall be performed on a monthly basis and shall include those elements as defined in the Standard Provisions and Reporting Requirements.

C. MONITORING

If the Discharger, through a detection monitoring program, or the Board finds that there is a measurably significant increase in indicator parameters or waste constituents over the statistically determined historical value at or beyond the Points of Compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days, and shall immediately resample for the constituent(s) or parameter(s) at the point where the historical values were exceeded. Within 90 days, the Discharger shall submit to the Board the results of the resampling and either:

a. a report demonstrating that an additional release did not in fact, occur or

b. an amended Report of Waste Discharge for review under existing the corrective action program to evaluate changes in water quality due to the additional release from the site.

If the Discharger, through an evaluation monitoring program, or the Board verify that an additional release has occurred the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days. Within 180 days, the Discharger shall submit to the Board an amended Report of Waste Discharge for review under the corrective action program which is designed to remediate releases from the landfill and to achieve compliance with the water quality protection standards.

D. REQUIRED MONITORING PROGRAMS

1. Detection Monitoring - General

For each monitored medium, all Monitoring Points assigned to detection monitoring shall be sampled for the Monitoring Parameters listed in this Program. The Discharger shall submit these reports at least semi-annually. For any given monitored medium, a sufficient number of samples shall be taken from all 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.

The Discharger shall use a Board approved statistical (or non-statistical) procedure to determine whether there has been a measurable (statistically significant) increase in a constituent over the historical mean concentration at a given monitoring point as set forth in Section 20415(e)(7) of Title 27. The historical mean concentration of any COC or monitoring parameter that has been detected historically at a given monitoring point shall be the mean (or median as appropriate) and the standard deviation as calculated from the previous 5-years of monitoring data.

Groundwater sampling shall also include an accurate determination of the groundwater surface elevation and field parameters (pH, temperature, electrical conductivity, turbidity) for that Monitoring Point. Groundwater elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the groundwater gradient/direction analyses required. For each monitored groundwater body, the Discharger shall measure the water level in each well and determine groundwater gradient and direction at least quarterly. Groundwater elevations for all wells in 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. This information shall be included in the monitoring reports.

2. Leachate Monitoring

The site does not have an operating leachate collection system and the discharger is not required to install such a system.

3. Groundwater Monitoring

The detection groundwater monitoring network consists of three background wells and nine monitoring wells in the uppermost saturated zone and one background well and two

monitoring wells in the deeper saturated zone. Ground water levels will be measured at all existing and any future monitoring wells. The wells to be sampled for detection monitoring are listed in Table I. Detection monitoring wells shall be analyzed at the frequency and for the monitoring parameters specified in Table II.

TABLE I – DETECTION MONITORING WELLS

WATER BEARING ZONE	**Detection Monitoring**
Uppermost Saturated Zone	
Background Wells	MW-9, PZ-38, & MW-11
Monitoring Wells	MW-24, G-3, G-4, G-5, G-6, MW-21, MW-22, MW-23, & PW-39
Deeper Saturated Zone	
Background Well	MW-37
Monitoring Wells	MW-32, & MW-33

TABLE II
GROUNDWATER DETECTION MONITORING PROGRAM
AND CORRECTIVE ACTION MONITORING PROGRAM

Parameter	**Units**	**Frequency**

Field Parameters	°C	Semi-annually
Temperature	Ft. & hundredths, MSL	Semi-annually
Groundwater Elevation	µmhos/cm	Semi-annually
Specific Conductance	pH units	Semi-annually
pH	Turbidity units	Semi-annually
Turbidity		
Monitoring Parameters	mg/L	Semi-annually
Total Dissolved Solids (TDS)	mg/L	Semi-annually
Dissolved Organic Carbon	mg/L	Semi-annually
Chemical Oxygen Demand (COD)	mg/L	Annually
Chloride	mg/L	Annually
Sulfate	mg/L	Annually
Calcium	mg/L	Annually
Potassium	mg/L	Annually
Sodium	mg/L	Annually
Bicarbonate Alkalinity	mg/L	Semi-annually
Dissolved Metals (Fe, Mg, Mn)	µg/L	Semi-annually
Volatile Organic Compounds (EPA Method 8260, See Attachment C)	µg/L	Annually
Phenol		
Constituents of Concern	mg/L	5 years
Carbonate Alkalinity	µg/L	5 years
Volatile Organic Compounds (EPA Method 8260, See Attachment D)	µg/L	5 years
Semi-Volatile Organic Compounds (EPA Method 8270)	µg/L	5 years
Organochlorine Pesticide, PCBs (EPA Method 8080)	µg/L	5 years
Chlorophenoxy Herbicides (EPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (EPA Method 8140)	mg/L	5 years
Inorganics (dissolved) (See Attachment D for Method)		

5. Surface Water Monitoring

Surface water at Markley Creek shall be sampled upstream of the landfill at background monitoring point MC-2, and downstream at monitoring point MC-1 (see Attachment B). Markley Creek is typically dry most of the year. Surface water samples shall be collected

at Markley Creek during the first storm event of the wet season that produces significant flow in the creek Samples shall be collected from all monitoring points and analyzed for the monitoring parameters specified in Table III.

Surface water monitoring data shall be submitted by fax at the time it is received and shall be included in the annual monitoring report submitted pursuant to this monitoring and reporting program. The annual report shall include evaluation of potential impacts of the facility on surface water quality and compliance with the water quality protection standards.

TABLE III - SURFACE WATER MONITORING PROGRAM

Parameter	**Units**	**Frequency**
Field Parameters		
Temperature	°C	Annual
Specific Conductance	µmhos/cm	Annual
pH	pH units	Annual
Turbidity	Turbidity units	Annual
Monitoring Parameters		
Total Suspended Solids (TSS)	mg/L	Annual
Total Dissolved Solids (TDS)	mg/L	Annual
Chlorides	mg/L	Annual
Sulfates	mg/L	Annual
Nitrate - Nitrogen	mg/L	Annual
Total Organic Carbon	mg/L	Annual
Total Iron	mg/L	Annual
Constituents of Concern		
Total Organic Carbon	mg/L	5-years
Carbonate	mg/L	5-years
Bicarbonate Alkalinity	mg/L	5-years
Chemical Oxygen Demand	mg/L	5-years
Oil and Grease	mg/L	5-years
Inorganics (total recoverable metals) (See Attachment D for Method)	mg/L	5-years

E. WATER QUALITY PROTECTION STANDARD

The Water Quality Protection Standard (Standard) consists of the following elements:

a. Constituents of Concern;
b. Concentration Limits;
c. Monitoring Points;
d. Points of Compliance; and
e. Compliance Period.

Each of these is described as follows:

1. Constituents of Concern

The 'COC list' (list of Constituents of Concern required under Title 27 CCR 20390) shall include all constituents listed in Tables II, III, and IV (above), the Waste Discharge Requirements No. R5-2003-0021, and all constituents listed in Attachment D. The Discharger shall monitor all COCs every five years, or more frequently as required under the corrective action monitoring program.

2. Concentration Limits

The Concentration Limit for any given Constituent of Concern or Monitoring Parameter in a given monitored medium (i.e., the uppermost saturated zone) at the site shall be as follows, and shall be used as the basis of comparison with data from the Monitoring Points in that monitored medium:

a. The background value established in the WDRs by the Board for that constituent or parameter and medium;

b. The constituent's background value, established anew during each Reporting Period using only data from all samples collected during that Reporting Period from the Background Monitoring Points for that monitored medium. Either:

(1) The mean (or median, as appropriate) and standard deviation (or other measure of central tendency, as appropriate) of the constituent's background data; or

(2) The constituent's MDL, in cases where less than 10 percent of the background samples exceed the constituent's MDL; or

c. A concentration limit greater than background, as approved by the Board for use during or after corrective action.

Groundwater

Concentration limits for synthetic constituents in groundwater samples shall be set at the analytical detection limits. Concentration limits for metals and general water quality parameters must be calculated using the data from upgradient wells.

New concentration limits shall be calculated semi-annually and submitted in tabular form with each semi-annual report. The report should discuss the changes in concentration limits and if overall trends show concentration limits to be increasing, decreasing, or remaining the same.

Surface Water

Concentration limits shall be calculated based on data available from the Markley Creek background surface monitoring location (MC-2). The concentration limits shall be updated on a yearly basis to provide ongoing definition of background surface water quality.

3. Monitoring Points

The groundwater monitoring points for detection monitoring are listed in Table II. The surface water monitoring points for detection monitoring shall be MC-1 and MC-2.

4. Points of Compliance

The points of compliance for groundwater are monitoring wells G-3, G-4, G-5, MW-21, MW-22, MW-24, and PW-39. The point of compliance for surface water monitoring shall be MC-1.

5. Compliance Period

The Compliance Period is the number of years equal to the active life of the landfill plus the closure period. The closure period shall continue until the Board determines that remaining wastes in the landfill will not threaten water quality. Each time the Water Quality Protection Standard is exceeded (i.e., a release is discovered) the landfill begins a Compliance Period on the date the Board directs the Discharger to begin an Evaluation Monitoring Program. If the Discharger's Corrective Action Program (CAP) has not achieved compliance with the water quality standard by the scheduled end of the

Compliance Period, the Compliance Period is automatically extended until the landfill has been in continuous compliance for at least three consecutive years.

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

Ordered by: _____
THOMAS PINKOS, Executive Officer

31 January 2003
(Date)

RDA
Attachments