

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CLEANUP AND ABATEMENT ORDER NO. R5-2004-0721

FOR
TIMBER MANAGEMENT SERVICES, INC.

TWIN BRIDGES LANDFILL
SHASTA COUNTY

This Order is issued to Timber Management Services, Inc. based on provisions of California Water Code Section 13304, which authorizes the Regional Water Quality Control Board, Central Valley Region (hereafter Regional Board) to issue a Cleanup and Abatement Order.

The Executive Officer of the Regional Board finds that with respect to Timber Management Services, Inc.'s acts, or failure to act, the following:

INTRODUCTION

1. On 24 September 2004, Congress Financial Corporation sold at auction Assessors Parcel No. 060-020-044 (hereafter Twin Bridges Landfill) located at 8103 Millville Plains Road, approximately seven miles east of the town of Anderson in Shasta County as shown on Attachment A, which is attached hereto and made part of this Order. Timber Management Services, Inc (hereafter Discharger) purchased Twin Bridges Landfill and an adjacent property, Assessors Parcel No. 060-010-006, at the auction and is the current owner of the parcels described above.
2. The Discharger is responsible pursuant to California Water Code Section 13304 to cleanup the waste and abate the discharges of waste at the Twin Bridges Landfill. The information available to the public and prospective purchasers prior to the sale of these properties provided notice that the properties had discharges of waste and were subject to Amended Cleanup and Abatement Order No. R5-2004-0708. The Discharger had knowledge of the discharges of waste prior to purchase and as owner is responsible for the waste on the property.

SITE HISTORY

3. In 1989, Simpson Paper Company constructed and began operating the Class II landfill and Class II surface impoundment (Twin Bridges Landfill). The landfill is situated on a 160-acre parcel, with approximately 25 to 30 acres used for disposal activities and leachate collection and storage, as shown in Attachment B, which is attached hereto and made part of this Order. A total of five disposal cells approximately four to five acres in size were proposed for the site, but only one cell received wastes. A second cell was constructed directly south of the first cell, but no wastes have been deposited there. A

sedimentation basin is located just south of the Class II leachate ponds. The sedimentation basin allows suspended matter to settle out of storm water before it is discharged off-site towards Dry Creek, a tributary of Bear Creek, which flows into the Sacramento River.

4. The Twin Bridges Landfill was constructed so that Simpson Paper Company could discharge wastes generated during paper-making processes at their Shasta Pulp and Paper Mill in Anderson. Ninety eight percent of the waste is composed of primary clarifier solids, which consist of approximately 70 percent water by weight, 18 percent fiber and wood residue, 9.3 percent ash (clays and inorganics), and 2.7 percent acid solubles (mostly carbonates). Wastes were dewatered with a screw press in order to attain a moisture content of less than 50 percent prior to discharge at the landfill.
5. Chemical analyses of the sludge identified concentrations of 2,3,7,8-Tetrachloro-dibenzo-p-dioxin (2,3,7,8-TCDD) ranging from 23 to 278 parts per trillion and 2,3,7,8-Tetrachloro-dibenzo-furan (2,3,7,8-TCDF) ranging from 264 to 6,740 parts per trillion. While dioxins were not detected in leachate from the paper waste sludge at a detection limit of 2.5 parts per quadrillion, furans were identified in leachate at concentrations ranging from 22 to 160 parts per quadrillion. Dioxins and furans are formed during the bleaching process of the wood pulp. In the early 1990s, Simpson Paper Company began using chlorine dioxide during the bleaching process in an effort to reduce the concentration of dioxins in the waste stream. The materials discharged to the Twin Bridges Landfill are “wastes” as defined in California Water Code Section 13050.
6. Significant quantities of leachate are produced at the Twin Bridges Landfill, partly from precipitation infiltrating the wastes and also because the paper pulp sludge waste has a moisture content of nearly 50 percent. Leachate generated at the Twin Bridges Landfill is collected via subsurface drain lines that discharge to the Class II surface impoundment. The Class II surface impoundment is uncovered and collects precipitation in addition to leachate. Between October 2001 and April 2002, more than 1,480,000 gallons of leachate was collected for off-site treatment and disposal.
7. Originally, leachate was removed from the Class II surface impoundment and transported back to the former Simpson Paper Company Shasta Pulp and Paper Mill in Anderson for processing and subsequent discharge to the Wastewater Treatment Lagoons. However, the Shasta Pulp and Paper Mill was sold at public auction in May 2004 due to bankruptcy proceedings involving Shasta Paper Company. Since the Twin Bridges Landfill is now disassociated from the Shasta Pulp and Paper Mill, discharge of leachate to the Wastewater Treatment Lagoons is no longer an option. In the absence of continued maintenance, including leachate collection and hauling, leachate will overflow the Class II surface impoundment at the landfill and discharge toward Dry Creek.
8. On 15 January 2003, undiluted leachate discharging to the Class II surface impoundment was sampled. Laboratory analyses of the leachate were performed to characterize the waste’s chemistry and determine its threat to waters of the state in the event of a release.

The leachate sample contained sodium, barium, cadmium, iron, manganese, nickel, and bis-(2-ethylhexyl) phthalate in concentrations that would exceed their respective Water Quality Objective or promulgated criterion if discharged to surface or ground waters of the state. In addition, no test fish survived 96 hour Acute Bioassay tests at undiluted and 10 percent leachate concentrations. Results of this sampling indicates that leachate from the Twin Bridges Landfill has the potential to cause groundwater and/or surface water degradation or pollution, or cause or contribute to the in-stream toxicity of surface waters if the Class II surface impoundment was to overflow.

9. Leachate in the Class II surface impoundment was sampled again on 22 October 2004. This time, the leachate was obtained directly from the pond, which also contains significant quantities of rainwater. The rainwater dilutes the chemical concentrations of the pure leachate that discharges into the pond. This “diluted” leachate sample contained pH, chloride, specific conductance, iron, manganese, and nickel in concentrations that would exceed their respective Water Quality Objective or promulgated criterion if discharged to surface or ground waters of the state. Additionally, a Static Acute Toxicity 96-Hour Bioassay Test was conducted and there was a 100% survival of the test species, *Oncorhynchus mykiss*.
10. Significant quantities of liquid have also been detected between the primary and secondary liners of the Class II surface impoundment. Analysis of the liquid indicates leachate may be present between the liners due to detections of tannins and lignins and total organic carbon, indicating a potential breach of the primary containment system.
11. Facility monitoring has not occurred at this site for almost two years due to the bankruptcy process and lack of a clearly identified responsible party. The last facility monitoring report submitted was for data collected during January 2003. The last groundwater monitoring occurred during September 2002.

AUTHORITY – LEGAL REQUIREMENTS

12. The *Water Quality Control Plan for the Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board (State Board). The Basin Plan identifies the beneficial uses applicable to the Sacramento River, Bear Creek and their tributaries. The listed existing or potential beneficial uses are domestic, municipal, agricultural and industrial supply; power generation; recreation; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources.
13. The Basin Plan water quality objectives for surface and ground water include the “Chemical Constituents Objective”, which states, in part, that “waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)” (i.e., state drinking

water standards); and a narrative objective that states “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. . .”. The Basin Plan contains implementation policies, including the “Policy for Application of Water Quality Objectives”. That Policy specifies, among other things, how to implement narrative water quality objectives. The Regional Board considers standards and criteria issued by other appropriate agencies, such as the United States Environmental Protection Agency, in applying narrative objectives. The chemical constituents in the wastes and leachate at the Twin Bridges Landfill may cause or contribute to exceedances of water quality objectives in the Basin Plan if discharged to surface or ground water.

14. Section 13304(a) of the California Water Code provides that:

“Any person who has discharged or discharges waste into waters of this state in violation of any waste discharge requirements or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged where it is, or probably will be, discharged into the waters of the State and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up such waste or abate the effects thereof or, in the case of threatened pollution or nuisance, take other necessary remedial action. Upon failure of any person to comply with such cleanup and abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant.”

15. Section 13304(c)(1) of the California Water Code provides that:

“If the waste is cleaned up or the effects of the waste are abated, or, in the case of threatened pollution or nuisance, other necessary remedial action is taken by any governmental agency, the person or persons who discharged the waste, discharges the waste, or threatened to cause or permit the discharge of waste within the meaning of subdivision (a), are liable to that governmental agency to the extent of the reasonable costs actually incurred in cleaning up the waste, abating the effects of the waste, supervising the cleanup or abatement activities, or taking other remedial action. The amount of the costs is recoverable in a civil action by, and paid to, the governmental agency and state board to the extent of the latter’s contribution to the cleanup costs from the State Water Pollution and Abatement Account or other available funds.”

16. Section 13267(b) of the California Water Code provides that:

“In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region that could affect the quality of waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program

reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

17. The Discharger has caused or permitted, and/or threatens to cause or permit waste to be discharged where it is, or probably will be, discharged into the waters of the State and that creates, and threatens to create, a condition of pollution or nuisance. The Discharger has control over Twin Bridges Landfill, including the ability to comply with the applicable requirements. The site has caused and threatens to cause pollution and nuisance as follows:
 - a. The Twin Bridges Landfill Class II surface impoundment is uncovered and will collect precipitation, in addition to leachate, during the rainy season. Failure to manage daily operations at the Twin Bridges Landfill, including collecting, hauling, and disposal of leachate will result in the filling of the Class II surface impoundment, causing overflow, and releasing untreated leachate to Dry Creek. A release of leachate from the Class II surface impoundment may additionally impact groundwater. A release of waste from the landfill would cause or contribute to violations of water quality objectives in the Basin Plan. Site monitoring has not been occurring at the site for several years. By not adequately monitoring the site, a release of waste may go undetected. The current lack of site management threatens to cause unregulated discharges because the surface impoundment contains waste that is open to rain water. In the area of the landfill, rainfall totals average nearly 35 inches per year. Currently, a viable means of leachate treatment and disposal does not exist due to the recent sale and new ownership of the Shasta Pulp and Paper Mill. As described in Finding No. 4, the Twin Bridges Landfill contains wastes, as defined in the California Water Code, at concentrations that exceed applicable water quality objectives in the Basin Plan, and if discharged, applicable water quality objectives in Dry Creek may be exceeded. Exceedance of applicable water quality objectives constitutes “pollution” as defined in California Water Code section 13050.
18. The information and actions required by this Order are necessary to prevent a condition of pollution or nuisance as defined by the California Water Code. The issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act, pursuant to Section 15321(a)(2), Title 14, California Code of Regulations.
19. Any person adversely affected by this action of the Regional Board may petition the State Board to review the action in accordance with Section 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions may be found on the Internet at

http://www.swrcb.ca.gov/water_laws/cawtrcde/wqpetition_instr.html or will be provided upon request.

IT IS HEREBY ORDERED THAT, pursuant to Sections 13267 and 13304 of the California Water Code, that Amended Cleanup and Abatement Order No. R5-2004-0708 is hereby rescinded and Timber Management Services, Inc., (hereafter referred to as “Discharger”) shall comply as specified below:

1. **Beginning immediately**, assess the Class II surface impoundment monthly during summer months and weekly from 1 October through 1 June annually to determine the amount of remaining freeboard for storage of leachate. The Class II surface impoundment shall additionally be assessed within 24 hours after each significant rainfall event of one inch or greater within a 24 hour period for remaining freeboard. Results of the Class II surface impoundment assessments shall be transmitted to the Regional Board via e-mail or written correspondence **within 24 hours of conducting the assessment**. The Class II surface impoundment shall be managed to maintain at least two feet of freeboard at all times.
2. **By 1 January 2005**, sample all wells, lysimeters, storm water, and leachate in accordance with Monitoring and Reporting Program No. R5-2004-0 as shown in Attachment B, which is incorporated herein and made part of this Order. Continue to monitor the site in accordance with Monitoring and Reporting Program No. R5-2004-0708 until Waste Discharge Requirements Order No. 89-198 is transferred to the new owner, Timber Management Services, Inc. Once Order No. 89-198 is transferred, requirements of Revised Monitoring and Reporting Program No. 89-198 will supersede those listed in Monitoring and Reporting Program No. R5-2004-0 .
3. **By 15 January 2005**, submit to the Regional Board cost estimates for closure, postclosure maintenance, and corrective actions associated with known or reasonably foreseeable releases from the Twin Bridges Landfill.
4. **By 1 March 2005**, submit to the Regional Board a work plan that proposes to determine the source of the liquid between the primary and secondary liners of the Class II surface impoundment. The work plan must include a means of determining whether the primary liner is breached. Any necessary repairs to the Class II surface impoundment must be completed **by 1 October 2005**.
5. **By 1 March 2005**, submit to the Regional Board a Final Closure and Postclosure Maintenance Plan in accordance with applicable provisions of Title 27, California Code of Regulations, Division 2. The Final Closure and Postclosure Maintenance Plan must include a construction quality assurance program, cost estimates for closure and postclosure maintenance, and take into account long term handling of leachate.
6. **By 1 April 2005**, establish financial assurance mechanisms for the Twin Bridges Landfill in accordance with provisions of Title 27, California Code of Regulations, Division 2,

Chapter 6, for corrective action associated with known or reasonably foreseeable releases, closure, and postclosure maintenance in the amounts of the approved cost estimates. Financial assurances are to be established with oversight provided by the California Integrated Waste Management Board and must name the Regional Board as beneficiary.

7. **By 1 November 2005**, complete closure construction activities at the Twin Bridges Landfill in accordance with an approved Final Closure and Postclosure Maintenance Plan and applicable provisions of Title 27, California Code of Regulations, Division 2. Submit to the Regional Board a final report documenting closure construction activities within 60 days of completing the closure project.

THOMAS R. PINKOS, Executive Officer

By: James C. Pedri, Assistant Executive Officer

1 December 2004

(Date)

DPS/klc: sae

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ATTACHMENT B
MONITORING AND REPORTING PROGRAM NO. R5-2004-0721

FOR
TWIN BRIDGES LANDFILL

SHASTA COUNTY

Compliance with this Monitoring and Reporting Program and with the companion Standard Provisions and Reporting Requirements dated August 1997 (Standard Provisions and Reporting Requirements), is ordered by Cleanup and Abatement Order No. R5-2004-0721. Failure to comply with this Program or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the Order and with the Water Code, and may result in the imposition of civil monetary liability.

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 that do not comply with the required format will be rejected and the Discharger shall be deemed to be in noncompliance with the Order.

In reporting the monitoring data, 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 clearly illustrate compliance with the Order or lack thereof. 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 that cannot be quantified and/or specifically identified.

Monthly Monitoring Reports

The Discharger shall submit monthly reports of the results of monitoring conducted in accordance with the schedules specified in this Monitoring and Reporting Program **by the end of the month following the month the monitoring was performed.**

Quarterly and semiannual monitoring reports shall be submitted to the Regional Board **by the end of the month following the end of each calendar quarter or semiannual monitoring period in which samples were taken.** The results of any monitoring done more frequently than required

At the locations specified herein shall be reported to the Regional Board within 30 days after performing the monitoring.

Annual Summary Report

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 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 Regional Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Regional Board.
- c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the Order.
- 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.

The Discharger shall submit the Annual Monitoring Summary Report by **31 January annually**.

Water Quality Protection Standards

The Water Quality Protection Standard shall consist of: 1) Constituents of Concern, 2) Concentration Limits, 3) Monitoring Points, 4) Points of Compliance, and 5) Compliance Period.

Constituents of Concern

The Constituents of Concern are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit. The Constituents of Concern at the facility are those listed in Table 1. The Discharger shall monitor all Constituents of Concern in Table 1 every 5 years or more frequently, if required, in accordance with a Corrective Action Program.

Table 1 Groundwater Monitoring Parameters/Frequency		
<u>Parameter</u>	<u>Units</u>	<u>Frequency</u> ¹
Field Parameters		
Groundwater Elevation	Feet and Hundredths, MSL	Quarterly
Specific Conductance	µmhos/cm	Quarterly
pH	pH units	Quarterly
Turbidity	Turbidity units	Quarterly
Monitoring Parameters		
Total Dissolved Solids	mg/L	Quarterly
Chloride	mg/L	Quarterly
Sulfate	mg/L	Annually
Nitrate (as N)	mg/L	Annually
Bicarbonate Alkalinity	mg/L	Annually
Total Alkalinity	mg/L	Annually
Sodium	mg/L	Annually
Magnesium	mg/L	Annually
Calcium	mg/L	Annually
Potassium	mg/L	Annually
Chemical Oxygen Demand	mg/L	Annually
Constituents of Concern		
Volatile Organics ²	µg/L	5 years
Semi-Volatiles ³	µg/L	5 years
Metals ⁴	mg/L	5 years
2,3,7,8-TCDD ⁵	picograms/L	5 years
2,3,7,8-TCDF ⁶	picograms/L	5 years

- ¹ Annual samples shall be collected in the second quarter of each year.
- ² EPA Method 8260 shall be used. All peaks shall be reported.
- ³ EPA Method 8270 shall be used. All peaks shall be reported.
- ⁴ Metals shall include arsenic, cadmium, chromium VI, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc and shall be analyzed by ICAP or AA. Arsenic, mercury, and selenium analyses shall be analyzed by AA.
- ⁵ 2,3,7,8-Tetrachloro-dibenzo-p-dioxin
- ⁶ 2,3,7,8-Tetrachloro-dibenzo-p-furan

Monitoring Parameters

Monitoring parameters are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all WMUs are those listed in Table 1.

Concentration Limits

The concentration limits for each constituent of concern are as follows:

- a. For naturally occurring constituents of concern, the concentration limit shall be the calculated statistical concentration limit.
- b. For anthropogenic (not naturally occurring) constituents, which have no natural or background values, the concentration limits (water quality protection standard) shall be the detection limit of the analytical method(s) used.

The Discharger shall use a statistical method approved by Regional Board staff and the groundwater quality data obtained from the detection monitoring program to revise the concentrations annually. The Discharger shall submit the revised concentration limits to Regional Board staff for review and approval in the Annual Monitoring Summary Report.

Monitoring Points

The monitoring points for the groundwater detection monitoring program are monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, and MW-8. The monitoring points shall be sampled and analyzed for Field Parameters, Monitoring Parameters, and Constituents of Concern as indicated and listed in Table 1.

Point of Compliance

The Point of Compliance is the vertical surface at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit. The point of compliance for groundwater monitoring is monitoring wells MW-3, MW-5, MW-6, MW-7, and MW-8.

Compliance Period

The Compliance Period for the landfill is the number of years of operation plus the closure period. 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 Regional Board directs the Discharger to begin an Evaluation Monitoring Program.

MONITORING

If the Discharger, through a detection monitoring program, or the Regional Board finds that there is statistically significant evidence of a release from the landfill for any Monitoring Parameter or Constituent of Concern, or significant physical evidence of a release from the landfill, the Discharger shall notify the Regional Board or acknowledge the Regional Board's finding in writing within **7 days**, and shall implement verification procedures within **30 days**, pursuant to Section 20415(e)(8)(E) of Title 27. Within **90 days**, the Discharger shall submit to the Regional Board the results of the re-sampling and either:

- a. A report that demonstrates that a source other than the landfill caused the evidence of a release, or that the evidence resulted from an error in sampling, analysis, or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone; or
- b. An amended Report of Waste Discharge for the establishment of an evaluation monitoring program to assess the nature and extent of the release from the landfill and to design a corrective action program for approval by the Executive Officer. Within **180 days** of determining statistically significant evidence of a release, the Discharger shall submit an engineering feasibility study for a corrective action program.

GROUNDWATER MONITORING

The following groundwater detection monitoring program shall be implemented at the facility to determine compliance with the water quality protection standards. The monitoring network shall consist of background monitoring wells MW-1, MW-2, and MW-4, and down gradient monitoring wells MW-3, MW-5, MW-6, MW-7, and MW-8. Additional wells installed to

comply with Order No. R5-2004-0708 shall be included as they are installed. Samples from all monitoring wells shall be analyzed for the parameters and at the frequencies listed in Table 1.

The Discharger shall determine at each sampling whether there is a statistically significant increase over water quality protection standards for each parameter and constituent analyzed.

The groundwater surface elevation (in feet and hundredths, M.S.L.) in all wells shall be measured quarterly and used to determine the velocity and direction of groundwater flow. This information shall be displayed on a water table contour map and/or groundwater flow net for the site.

UNSATURATED ZONE MONITORING

The following unsaturated zone monitoring program shall be implemented at the facility to determine if there is leakage of waste constituents from the WMUs into the unsaturated zone. The unsaturated zone monitoring network shall consist of background suction lysimeter L-1, compliance suction lysimeters L-3, L-5, and L-6, and pan lysimeters L-2, L-4, L-7, LII-1, and LII-2. Lysimeters LII-1 and LII-2 in WMU No. 2 shall undergo a minimum of two sampling events prior to waste being placed in the WMU.

Additional lysimeters installed to comply with Order No. R5-2004-0708 shall be included as they are installed and as waste is placed into the WMU that they monitor. Samples from all lysimeters shall be analyzed for the parameters and at the frequencies listed in Table 2.

Table 2 Unsaturated Zone Monitoring Parameters/Frequency		
Parameter	Units	Frequency ¹
Field Parameters		
Specific Conductance	µmhos/cm	Semiannually
pH	pH units	Semiannually
Monitoring Parameters		
Total Dissolved Solids	mg/L	Semiannually
Chloride	mg/L	Semiannually
Chemical Oxygen Demand	mg/L	Semiannually
Constituents of Concern		
Volatile Organics ²	µg/L	Annually
Semi-Volatiles ³	µg/L	Annually
Metals ⁴	mg/L	Annually
2,3,7,8-TCDD ⁵	picograms/L	5 years
2,3,7,8-TCDF ⁶	picograms/L	5 years

- ¹ Semiannual samples shall be collected in February and August of each year.
- ² EPA Method 8260 shall be used. All peaks shall be reported.
- ³ EPA Method 8270 shall be used. All peaks shall be reported.
- ⁴ Metals shall include arsenic, cadmium, chromium VI, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc analyzed by ICAP or AA. Arsenic, mercury, and selenium analyses shall be analyzed by AA.
- ⁵ 2,3,7,8-Tetrachloro-dibenzo-p-dioxin
- ⁶ 2,3,7,8-Tetrachloro-dibenzo-p-furan

The Discharger shall determine at each sampling whether there is a statistically significant increase for each parameter and constituent analyzed.

LEACHATE MONITORING

All landfill leachate discharge pipes, sumps, and landfill slopes shall be inspected monthly for leachate generation. Upon detection of leachate, the Discharger shall immediately sample the leachate and shall continue to sample and analyze the leachate for the Monitoring Parameters, and Constituents of Concern at the frequencies listed in Table 1 for groundwater monitoring. Leachate flow rate (measured in gallons/day) and the quantity of leachate removed from the Class II surface impoundment (measured in total gallons) for off-site disposal in accordance with an approved leachate management contingency plan shall be reported in monthly monitoring reports.

SURFACE WATER MONITORING

The Discharger shall establish surface water monitoring stations on Dry Creek above and below the point where runoff from the WMUs enters the stream channel. The monitoring station shall be located as follows:

- R1 200 feet upstream from the point of discharge
- R2 200 feet downstream from the point of discharge

An additional surface water monitoring station (R3) shall be established at the point where surface water from on and around the WMUs leaves the facility boundary.

Surface water samples shall be obtained from R1, R2, and R3 during the first storm of the rainy season that produces significant flows. Surface water samples shall be analyzed for the constituents and at the frequency described in Table 3, and weekly thereafter during significant storm events (1 inch or greater in 24 hours).

<u>Parameters/Constituent</u>	<u>Units</u>	<u>Frequency</u>
Specific Conductance	µmhos/cm	Weekly
pH	pH Units	Weekly
Total Dissolved Solids	mg/L	Weekly
Turbidity	NTUs	Weekly
Suspended Matter	mg/L	Weekly

COVER AND LINER MONITORING

The landfill cover and side slopes shall be inspected semiannually for erosion, cracks, fissures, and subsidence. Erosion gullies, cracks, and fissures, or areas of subsidence that have the potential to pond water shall be repaired, filled, and regraded as necessary no later than **15 October** of each year. Also by **15 October** of each year, any necessary erosion control measures shall be in-place to prevent further erosion of the facility during the upcoming winter season.

All visible portions of synthetic liners shall be inspected on a weekly basis and their condition reported monthly to the Regional Board.

A summary of the inspections and repairs shall be submitted to the Regional Board in the Annual Monitoring Summary Report.

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

Ordered By: _____
THOMAS R. PINKOS, Executive Officer

(Date)

