

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. ____

FOR
SIMPSON PAPER COMPANY
FOR
POST-CLOSURE MAINTENANCE OF DERSCH ROAD CLASS III LANDFILL
SHASTA COUNTY

Compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements (WDR) Order No. _____. Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements dated April 2000, constitutes noncompliance 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 that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance 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 that it clearly illustrates compliance with the waste discharge requirements or the lack thereof. Historical and current monitoring data shall be graphed for each semiannual monitoring event. 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. Data shall also be submitted in a digital format acceptable to the Executive Officer

Method detection limits and practical quantitation limits shall be reported. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required. Field and laboratory tests shall be reported in the quarterly monitoring reports. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Board.

B. REQUIRED MONITORING REPORTS AND SUBMITTAL DATES

The following required monitoring reports shall be submitted in accordance with the schedule and due dates listed below in Table B-1, Report Submittal Requirements:

1. Semiannual Groundwater and Unsaturated Zone Monitoring Reports

Semiannual monitoring reports shall include all observations and water quality data collected during the reporting period. Data collected through the groundwater

monitoring program, unsaturated zone monitoring program, and gas condensate monitoring program shall be provided as required.

2. Annual Monitoring Summary Report

The Discharger shall submit an Annual Monitoring Summary Report to the Regional Water Board covering the previous monitoring year. The annual report shall contain the information specified in Reporting Requirements E.5 below, and a discussion of compliance with the WDRs and the Water Quality Protection Standard.

3. Facility Monitoring

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the Facility. The inspection shall assess damage to the drainage control system, gas extraction and monitoring equipment, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Reporting Requirements E.3f below. Any necessary construction, maintenance, or repairs shall be completed by 31 October annually. Results of the Facility monitoring shall be included with the second semiannual monitoring report and the Annual Monitoring Summary Report each year.

a. Storm Events

A Facility inspection, including the Standard Observations, shall also occur within 2 days after each major storm event of 1.5 inches or greater of precipitation within a 24 hour period. Necessary repairs shall be completed within 30 days of the inspection. If additional time is needed to complete the repairs, then the Discharger shall request in writing an extension for completing the work and provide details of the reason why the extension is necessary. Storm event monitoring results shall be included with each corresponding semiannual monitoring report. Storm event monitoring shall include the inspection date(s), name of the person conducting the inspection, and the amount of precipitation received within the 24 hour period. If no precipitation event of 1.5 inches or greater within a 24 hour period occur during the reporting period, then the storm event monitoring results shall state such.

4. Response to a Release

If the Discharger determines that there is significant statistical evidence of a release (i.e. the initial statistical comparison or non-statistical comparison indicates, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified), the Discharger shall immediately notify the Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination and implement Response to Release section of the Standard Provisions and Reporting Requirements (April 2000).

TABLE B-1, REPORT SUBMITTAL REQUIREMENTS

Reporting Type	Sampling or Observation Frequency	Reporting Period	Report Date Due
Groundwater and Unsaturated Zone Monitoring Report	Semiannually	1 January – 30 June 1 July – 31 December	31 July 31 January
Facility Monitoring Report	Annually	By 30 September annually	31 January
Storm Event Monitoring	As needed (see B.3.a above)	1 January – 30 June 1 July – 31 December	31 July 31 January
Annual Monitoring Summary Report	Annually	1 January – 31 December	31 January
Response to a Release	As necessary	As necessary	As necessary

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

The Discharger shall submit a Water Quality Protection Standard Report in accordance with Discharge and Facility Specifications B.10 of WDR Order No. R5-2008-_____. For the Unit, the Water Quality Protection Standard (WQPS) shall consist of all monitoring parameters and constituents of concern, the concentration limits for each monitoring parameter and constituent of concern, the point of compliance, and all water quality monitoring points for each monitored medium. The WQPS, or any modification thereto, shall be submitted in a report to the Executive Officer for review and approval.

The WQPS Report shall include, at a minimum, the following information:

1. Water Quality Protection Standard Report

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

The report shall:

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

- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

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

2. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for the Unit at the Facility are those listed in Tables D-1 through D-3 for the specified monitored medium.

3. Monitoring Parameters

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables D-1 through D-3 for the specified monitored medium.

4. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27; or
- b. By an alternate statistical method acceptable to the Executive Officer in accordance with §20415 of Title 27.

For non-naturally occurring constituents of concern, the concentration limit shall be the analytical reporting limit of each respective constituent.

5. Point of Compliance

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

6. Compliance Period

The compliance period for the Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during

which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an Evaluation Monitoring Program.

D. MONITORING

The Discharger shall comply with the monitoring program provisions of Title 27 for groundwater and the unsaturated zone, in accordance with Monitoring Specifications in the Standard Provisions and Reporting Requirements (April 2000). All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells and unsaturated zone monitoring devices shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables D-1 and D-2. Method detection limits and practical quantitation limits shall be reported.

The Discharger may, after receiving approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater

The Discharger shall operate and maintain a groundwater monitoring system that complies with the applicable provisions of §20415 of Title 27 in accordance with a Monitoring Program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared semiannually and submitted with each Annual Monitoring Summary Report.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring

system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table D-1.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schoeller plot.

The existing groundwater monitoring system at Simpson Dersch Road Class III Landfill consists of six monitoring wells, with two background up-gradient wells (OB-2 and OB-6), and four compliance or down-gradient wells (OB-3, OB-7, OB-8, and OB-9). These wells shall be sampled semiannually for the parameters and constituents of concern and at the frequencies listed in Table D-1 below.

Table D-1 - Groundwater Monitoring		
<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Groundwater Elevation	Ft., & hundredths, MSL	Semiannually
Temperature	°C & °F	Semiannually
Turbidity	NTUs	Semiannually
Specific Conductance	µmhos/cm	Semiannually
pH	pH Units	Semiannually
<u>Monitoring Parameters</u>		
Total Dissolved Solids	mg/L	Semiannually
Chloride	mg/L	Semiannually
Nitrate – Nitrogen	mg/L	Semiannually
Chemical Oxygen Demand	mg/L	Semiannually
Tannins and Lignins	mg/L	Semiannually
Sulfates	mg/L	Semiannually
Calcium	mg/L	Semiannually
Magnesium	mg/L	Semiannually
Potassium	mg/L	Semiannually
Sodium	mg/L	Semiannually
Total Alkalinity	mg/L	Semiannually
<u>Constituents of Concern</u>		
Phenols	µg/L	5-Years
Dioxins, Furans, & Congeners ¹	pg/L	5-Years
Dissolved Metals ² (EPA Method 6010 and 7000 series)	µg/L	5-Years

¹ Toxicity Equivalent Quotients for Dioxins, Furans, and 17 Congeners shall be calculated using 2005 or more recent World Health Organization procedures.

² Metals include Arsenic, Barium, Cadmium, Chromium, Chromium VI, Iron, Lead, Manganese, Mercury, Nickel, Selenium, and Silver

2. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of §20415 of Title 27 in accordance with a monitoring plan approved by the Executive Officer. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in an approved Sample Collection and Analysis Plan.

Unsaturated zone monitoring reports shall be included with the corresponding semiannual groundwater monitoring report and shall include an evaluation of potential impacts of the Facility on the unsaturated zone and compliance with the Water Quality Protection Standard. All monitoring parameters shall be graphed to show historical trends at each monitoring point.

After the Discharger abandons five of the existing suction lysimeters, there will still be four remaining lysimeters making up the unsaturated zone monitoring system. The four remaining lysimeters consist of L-2B located 27 feet below old Trench 5 in the eastern portion of the site, L-8B located 45 feet below Trench 5, L-9C located 64 feet below Trench 5, and L-12 located outside of the waste disposal area in the southeast corner of the site. These lysimeters shall be sampled and analyzed for the monitoring parameters and constituents of concern and at the frequencies listed in Table D-2 below.

Table D-2 - Unsaturated Zone Monitoring		
<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Groundwater Elevation	Ft., & hundredths, MSL	Semiannually
Temperature		Semiannually
Turbidity	°C & °F	Semiannually
Specific Conductance	NTUs	Semiannually
pH	µmhos/cm	Semiannually
	pH Units	Semiannually
<u>Monitoring Parameters</u>		
Total Dissolved Solids		Semiannually
Chloride	mg/L	Semiannually
Nitrate – Nitrogen	mg/L	Semiannually
Chemical Oxygen Demand	mg/L	Semiannually
Tannins and Lignins	mg/L	Semiannually
Sulfates	mg/L	Semiannually
Calcium	mg/L	Semiannually
Magnesium	mg/L	Semiannually
Potassium	mg/L	Semiannually
Sodium	mg/L	Semiannually
Total Alkalinity	mg/L	Semiannually

Table D-2 - Unsaturated Zone Monitoring		
<u>Constituents of Concern</u>	mg/L	Semiannually
Phenols		
Dioxins, Furans, & Congeners ¹	µg/L	5-Years
Dissolved Metals ² (EPA Method 6010 and 7000 series)	pg/L	5-Years
	µg/L	5-Years

¹ Toxicity Equivalent Quotients for Dioxins, Furans, and 17 Congeners shall be calculated using 2005 or more recent World Health Organization procedures.

² Metals include Arsenic, Barium, Cadmium, Chromium, Chromium VI, Iron, Lead, Manganese, Mercury, Nickel, Selenium, and Silver

3. Gas Condensate Monitoring

The gas extraction system condensate sumps shall be inspected at least semiannually for liquid. Liquids shall be transferred from the sumps to the above ground storage tanks near the blower building as needed. The total volume of liquids removed from the sumps shall be reported in each corresponding semiannual monitoring report. Gas condensate shall be sampled and analyzed for the following constituents prior to discharging through the land application sprinkler system:

Table D-3 – Gas Condensate Monitoring		
<u>Parameters</u>	<u>Units</u>	<u>Frequency</u>
<u>Field Parameter</u>		
Volume collected from sumps	gallons	As needed
Temperature	°C	As needed
Specific Conductance	µmhos/cm	As needed
pH	pH number	As needed
<u>Monitoring Parameters</u>		
Total Dissolved Solids	mg/L	Prior to land application
Chloride	mg/L	
Nitrate – Nitrogen	mg/L	*
Chemical Oxygen Demand	mg/L	*
Tannins and Lignins	mg/L	*
Sulfates	mg/L	*
Calcium	mg/L	*
Magnesium	mg/L	*
Potassium	mg/L	*
Sodium	mg/L	*
Total Alkalinity	mg/L	*

Table D-3 – Gas Condensate Monitoring		
<u>Constituents of Concern</u> Phenols Dioxins, Furans, & Congeners ¹ Dissolved Metals ² (EPA Method 6010 and 7000 series)	µg/L pg/L µg/L	Prior to land application

¹ Toxicity Equivalent Quotients for Dioxins, Furans, and 17 Congeners shall be calculated using 2005 or more recent World Health Organization procedures.

² Metals include Arsenic, Barium, Cadmium, Chromium, Chromium VI, Iron, Lead, Manganese, Mercury, Nickel, Selenium, and Silver

Gas condensate sample results shall be submitted to the Executive Officer for review and approval prior to discharging liquids at the Facility. If the concentration of gas condensate constituents of concern remains below laboratory reporting limits for three consecutive sampling events (three years minimum), then the Discharger may request revision of this Monitoring and Reporting Program to eliminate sampling for those constituents.

E. REPORTING REQUIREMENTS

1. 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 post-closure 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.

2. 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.
3. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:
 - a. For each monitoring point and background monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;
 - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 5) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan.
 - b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
 - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
 - d. Laboratory statements of results of all analyses evaluating compliance with requirements.
 - e. An evaluation of the effectiveness of the run-off/run-on control facilities.
 - f. A summary and certification of completion of all **Standard Observations** for the Unit(s) and for the perimeter of the Unit. Standard observations for inactive or closed landfill units shall be conducted **monthly** during the wet season (1 October to 30 April) and **quarterly** during the dry

season (1 May to 30 September). 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.
4. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Water 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 Monitoring Parameters and Constituents of Concern listed in Table D-I of this MRP, and an estimated date that the results will be submitted to the Regional Water Board; and
 - e. Corrective measures underway or proposed, and corresponding time schedule.
5. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Water 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 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 down-gradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.

- b. All historical monitoring data, including data for the previous year, shall be submitted in tabular form as well as in a digital file format. The Regional Water 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 Water 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 written summary of the monitoring results, indicating any changes made or observed since the previous annual report.

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

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

Date

DPS/KLC: sae
4/24/2008