CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0081

WASTE DISCHARGE REQUIREMENTS FOR SIERRA PACIFIC INDUSTRIES, SHASTA LAKE DIVISION FOR THE CLOSED CLASS III WOOD WASTE LANDFILL SHASTA COUNTY

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

1. Sierra Pacific Industries, Shasta Lake Division (hereafter Discharger), owns a closed Class III wood waste landfill in the City of Shasta Lake, in Section 36, T33N, R5W, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.

2. The facility consists of an existing unlined waste management unit (Unit) covering approximately 10 acres, as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Number (APN) 006-040-13.

3. The landfill began operations in 1963. Various owners operated the site between 1963 and 1971. No records are available for operations that occurred between 1963 and 1971. Test pits dug in the Unit before closure showed that the pre-1971 waste stream consisted of log yard cleanup materials, wood shavings, and sawdust. Sierra Pacific Industries purchased the landfill and mill in 1971. The current Discharger operated the Unit from 1971 to 1987 for disposal of log yard wastes. Waste disposal activities ceased in 1987. Approximately 81,000 cubic yards of waste materials were disposed in the Unit during its active life.

4. The Discharger initiated site closure activities in 1988 and completed closure in 1990. The closure activities included removing wastes that had been deposited in a five-foot layer along a 2.5 acre southeastern extension and re-depositing them in the northern section of the landfill. The consolidated landfill was re-graded to a minimum three percent slope and a final cover consisting of a one-foot soil foundation layer, a clay barrier layer, and a one-foot earthen vegetative cap, was constructed.

5. Two permanent survey markers were installed by a licensed land surveyor, from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period. The locations of the survey markers are shown on Attachment B.

6. The Discharger installed sedimentation basins to capture any erosion that occurred during placement of the final cover. Currently, the cover is well vegetated and only minor erosion has been noted after severe storms over the last several years. To minimize ponding on the landfill surface, storm water runoff from the eastern portion of the landfill is directed through corrugated metal pipes to an intermittent tributary of Churn Creek. Storm water runoff from the western portion of the landfill is directed through corrugated metal pipes to a separate intermittent tributary of Churn Creek. The two unnamed tributaries of Churn Creek, which is a tributary of the Sacramento River, border along the east and west of the landfill as shown on Attachment B.

7. On 26 July 1991, the Regional Board issued Order No. 91-159, in which the facility was classified as a Class III waste disposal site for the discharge of wood wastes in accordance with the regulations in effect when the order was issued. Order No. 91-159 is not in conformance with Title 27, California Code of Regulations, §20005, et seq. (Title 27). These WDRs are being updated to incorporate the minimum performance goals and prescriptive standards contained in Title 27.

SITE DESCRIPTION

8. Native soils beneath the site consist of approximately 10 to 15 feet of clayey silt underlain by five feet of transition soils comprised of sand and rock with a clayey silt matrix. These transition soils grade downward to highly weathered and fractured bedrock that composes the upper portion of the Copley Greenstone.

9. The Battle Creek fault zone, located approximately 25 miles southeast of the site, is the closest potentially active fault system to the landfill.

10. Land uses within 1,000 feet of the facility are residential and manufacturing.

11. The facility receives an average of approximately 62 inches of precipitation per year and the mean evaporation is approximately 68 inches per year, as measured at Shasta Dam about two miles from the landfill.

12. The 100-year, 24-hour precipitation event is estimated to be approximately 10 inches, based on Department of Water Resources' Bulletin 195 entitled *Rainfall Analysis for Drainage Design-Volume 1*, dated October 1976.

13. The waste management facility is not within a 100-year flood plain.

14. There are 30 municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the site. Two tributaries of Churn Creek are located within 1,000 feet of the landfill.

SURFACE WATER AND GROUNDWATER CONDITIONS

15. Surface drainage is toward Churn Creek, which is a tributary of the Sacramento River, in the Enterprise Flat Hydrologic Area (508.10) of the Sacramento Hydrologic Basin.

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

17. The Basin Plan on page II-2.00 states that: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams." The beneficial uses of Churn Creek and its tributaries are not individually identified in the Basin Plan. Application of the tributary rule requires that the beneficial uses of any specifically identified water body apply to its tributary streams. The Basin Plan does not identify any beneficial uses specifically for Churn Creek and its tributaries, but the Basin Plan does identify present and potential uses for the Sacramento River, to which Churn Creek is tributary.

The Basin Plan identifies the following beneficial uses for the Sacramento River: municipal and domestic supply; agricultural supply; industrial service supply; hydropower generation; water contact and non-contact recreation; warm and cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; wildlife habitat; navigation; ground water recharge; and freshwater replenishment. In addition, State Board Resolution 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

Upon review of the flow conditions, habitat values, and beneficial uses of Churn Creek and its tributaries, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River are applicable to Churn Creek and its tributaries. The Basin Plan defines beneficial uses and with respect to disposal of wastewaters states that "...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses." The Regional Board finds that the beneficial uses identified in the Basin Plan for the Sacramento River are applicable to Churn Creek and its tributaries based upon the following facts:

a. *Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply*

The State Water Resources Control Board (SWRCB) has issued water rights to existing water users along Churn Creek and its tributaries and the Sacramento River downstream of the discharge for multiple uses including domestic, agricultural, and

industrial service supply. Since Churn Creek and its tributaries are intermittent streams, the creeks likely provide groundwater recharge during periods of low flow. Domestic water supply in the area is generally provided by municipal entities using treated surface water. Although the use of area groundwater as domestic supply is limited, the potential for expanded use exists. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, which presents a potential for increased domestic, agricultural, and industrial uses of groundwater and the water in Churn Creek and its tributaries.

b. *Hydropower Generation, and Navigation*

Although no records of existing hydropower generation and navigation uses were found on Churn Creek and its tributaries, these uses do exist in the Sacramento River to which Churn Creek is tributary. The very nature of these uses depends on the presence of flow from tributary streams and therefore these uses are protected by including them as beneficial uses in streams tributary to the Sacramento River. Furthermore, considering the likely future value of electricity generation, it is not unreasonable to expect that new technologies for small hydropower projects may make hydropower generation uses on Churn Creek or its tributaries desirable.

c. *Water Contact and Non-Contact Recreation*

The Regional Board finds that Churn Creek and its tributaries flow through rural and residential areas and that there is ready public access. Contact and non-contact recreational activities exist and are likely to increase as the population in the area grows. Prior to discharge into the Sacramento River, Churn Creek flows through areas of general public access. The Sacramento River also offers recreational opportunities.

d. *Warm and Cold Freshwater Habitat, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development, and Wildlife Habitat*

Churn Creek flows to the Sacramento River. Fish species present in Churn Creek and its tributaries are consistent with both cold and warm water fisheries. There is a potential for anadromous fish migration necessitating a cold water designation and cold water salmonid species have been found in Churn Creek and its tributaries. The Basin Plan (Table II-1) designates the Sacramento River from Shasta Dam to Colusa Basin Drain as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Churn Creek and its tributaries. The cold water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L. The riparian areas along Churn Creek and its tributaries support wildlife habitat.

e. *Groundwater Recharge, and Freshwater Replenishment*

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since Churn Creek and its tributaries are at times dry, it is reasonable to assume that the stream flow is not present at its source, or the water is lost by evaporation, flow downstream, and percolation to groundwater providing a source of municipal and irrigation water supply. When water is present in Churn Creek and its tributaries, there is hydraulic continuity between it and the Sacramento River. During periods of hydraulic continuity, Churn Creek and its tributaries add to the water quantity and may impact the quality of water flowing down stream in the Sacramento River.

The beneficial uses of any specifically identified water body generally apply to its tributary streams. The Regional Board finds that, based on hydraulic continuity, aquatic life migration, existing and potential water rights, and the presence of contact recreational activities, the beneficial uses of the Sacramento River apply to Churn Creek and its tributaries. The Regional Board also finds that based on the available information that Churn Creek and its tributaries are intermittent streams. The intermittent nature of Churn Creek and its tributaries means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available on a year-round basis. Normally, flow in the drainages around the landfill leaves the facility property only after storm events because this flow reflects surface water runoff and not groundwater discharge.

18. The Basin Plan states that "*Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 which is, by reference, a part of this Basin Plan.*" State Water Resources Control Board Resolution No. 88-63 "Sources of Drinking Water" provides that "*All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards...*". The beneficial use of municipal and domestic supply is applicable to the Churn Creek and its tributaries and the west fork of Churn Creek and its tributaries based on Resolution 88-63, the Basin Plan tributary rule, and actual uses.

19. The first encountered groundwater is about 12 to 20 feet below the native ground surface. The direction of groundwater flow is toward the southwest.

20. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 180 and 295 micromhos/cm, with total dissolved solids (TDS) ranging between 120 and 230 mg/l.

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

GROUNDWATER MONITORING

22. Three groundwater monitoring wells were installed on 22 June 1989. Monitoring well MW-1 is located hydraulically up gradient of the Unit along the north fill boundary. Well MW-1 is 40.4 feet deep with a screen interval between 29.5 feet and 37.5 feet below ground surface (BGS). Well MW-2, located along the southwest fill boundary, is hydraulically down gradient of the Unit and 21.1 feet deep with a screen interval between 11 feet and 21 feet BGS. Well MW-3, located along the southeast fill boundary, is hydraulically cross gradient of the Unit and 12.6 feet deep with a screen interval between 8 feet and 12.5 feet BGS.

23. The Discharger's detection monitoring program for groundwater at this Unit does satisfy the requirements contained in Title 27.

24. Volatile organic compounds (VOCs) are often detected in a release from some types of landfills; VOCs are not expected to be found in wood waste. Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a Unit.

25. Sections 20415(e)(8) and (9) of Title 27 provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with §20415(b)(1)(B)2-4 of Title 27. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.

26. The Regional Board may specify a non-statistical data analysis method pursuant to Section 20080(a)(1) of Title 27. Section 13360(a)(1) of the California Water Code allows the Regional Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.

27. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.

28. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one

non-naturally occurring waste constituent detected above it's practical quantitation limit (PQL), may indicate that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

CEQA AND OTHER CONSIDERATIONS

29. 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.

30. This Order implements:

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

    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.

PROCEDURAL REQUIREMENTS

31. 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 discharges of waste to land stated herein.

32. The Regional Board notified the Discharger and interested agencies and persons of its intent to revise waste discharge requirements for this site, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

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

34. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the

State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 91-159 is rescinded, and that Sierra Pacific Industries, Shasta Lake Division, 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 California Water Code, Section 13173.

2. The discharge of solid wastes at this site is prohibited.

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

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

5. The site shall be maintained so that pollutants or waste constituents are not released in a manner that could cause a condition of nuisance, degradation, contamination, or pollution of groundwater or surface water.

B. FACILITY SPECIFICATIONS

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

2. The Discharger shall immediately notify the Regional Board of any flooding, un-permitted discharge of waste, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate 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.

C. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and surface water in accordance with Monitoring and Reporting Program No. R5-2003-0081.

2. The Discharger shall provide Regional Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices.

3. The Discharger shall submit a Water Quality Protection Standard Report in accordance with Title 27 and Monitoring and Reporting Program No. R5-2003-0081. The Water Quality Protection Standard Report shall be submitted to the Executive Officer for review and approval pursuant to the time schedule established in Provisions E.13.A below.

4. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2003-0081, and the Standard Provisions and Reporting Requirements, dated April 2000.

5. The Water Quality Protection Standard for organic compounds that 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., USEPA methods 8260 and 8270). The presence of non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells may be evidence of a release from the Unit.

6. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to the Water Quality Protection Standard and Monitoring and Reporting Program No. R5-2003-0081.

7. 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. R5-2003-0081 and §20415(e) of Title 27.

8. 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.

9. Specific methods of sample 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 Sample Collection and Analysis Plan.

10. The Discharger shall submit a Sample Collection and Analysis Plan for Executive Officer review and approval pursuant to the time schedule established in Provisions E.13.B below. The Sample Collection and Analysis Plan shall at a minimum include:

    a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;

    b. Sample preservation information and shipment procedures;

    c. Sample analytical methods and procedures;

    d. Sample quality assurance/quality control (QA/QC) procedures; and

    e. Chain of Custody control.

11. 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.

12. 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 percent 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.

13. **"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.

14. **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.

15. 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 percent 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.

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

17. 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.

18. 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 non-statistical 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".

19. 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 Regional Board staff.

20. The Discharger shall use the following non-statistical method for the VOC_{water} monitoring parameters and for all constituents of concern that are not amenable to the statistical tests above (i.e., less than 10 percent 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 that contains the largest number of qualifying constituents, where several independent samples have been analyzed for that constituent at a given monitoring point.

    Background for water samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point).

21. 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 percent of background samples).

The Discharger shall conduct verification testing (see Detection Monitoring Specifications C.22 and C.24 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 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 percent of applicable background samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specifications C.22 and C.24 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.

22. **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} and non-statistical 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}.** Because the VOC composite monitoring parameter 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.21.a, 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 that initiated the retest.** Therefore, the list of "qualifying constituents" for use in the retest, under Detection Monitoring Specification E.21.b, above, shall consist of those constituents which provided the original indication at that monitoring point. If the retest meets either triggering condition in either of the two retest samples, the retest shall have validated the original indication.

23. **Response to 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 Regional 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 Regional 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 Regional 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 Regional Board that demonstrates that a source other than the Unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone.

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.

24. 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.

D. REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply with any Prohibition or Specification of this Order for any reason, the Discharger shall notify the appropriate Regional Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.

2. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the 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.

3. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.

4. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:

   a. For each monitoring point and background monitoring point addressed by the report, a description of:

      1) The time of water level measurement;

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

      3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;

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

      5) A statement that the sampling procedure was conducted in accordance with the 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 any 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 waste.

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 waste.

3) For receiving waters:

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

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

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

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

e) Flow rate; and

f) Weather conditions - wind direction and estimated velocity, total precipitation during recent days and on the day of observation.

g. The quantity and types of wastes discharged and the locations in the Unit where waste has been placed since submittal of the last such report.

5. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Board **within seven days**, containing at least the following information:

a. A map showing the location(s) of seepage;

b. An estimate of the flow rate;

c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);

d. Verification that samples have been submitted for analyses of the constituents of concern and monitoring parameters, and an estimated date that the results will be submitted to the Regional Board; and

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

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

a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.

b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the 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 [§20420(h)], in that this facilitates periodic review by the Regional Board.

c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.

d. A site map showing, at a minimum, waste disposal boundaries, all monitoring points, and any area of the cap or drainage conveyance structures that were repaired during the previous year.

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 any leachate monitoring/control facilities.

E. PROVISIONS

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

2. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.

3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2003-0081, 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 Regional Board.

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

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

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

7. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure 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 Regional Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The

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

10. The Discharger shall establish cost estimates for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill, and submit these estimates to the Executive Officer for review and approval. The corrective action cost estimates shall be submitted in accordance with the time schedule established in Provision E.13.C.1 below.

11. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in an amount approved by the Executive Officer, and shall submit the financial assurance mechanism to the Regional Board for review and approval in accordance with the time schedule listed in Provision E.13.C.2 below.

12. The Discharger is required to maintain financial assurances for post-closure maintenance costs as specified in Chapter 6 of Title 27. The Discharger is required to submit the financial assurance mechanism to the Regional Board for review and approval in accordance with the time schedule listed in Provision E.13.C.2 below.

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

Task	Compliance Date
A. Water Quality Protection Standard Report	**1 October 2003**
Submit a Water Quality Protection Standard Report for Executive Officer review and approval. (see Detection Monitoring Specification C.3)	Submitted 12/17/03 DPS
B. Sample Collection and Analysis Plan	**1 October 2003**
Submit a Sample Collection and Analysis Plan for Executive Officer review and approval. (see Detection Monitoring Specification C.10)	Submitted 11/3/04

C. Financial Assurances

1. Corrective Action Cost Estimate Submit a cost estimate for initiating and completing corrective actions associated with known or reasonably foreseeable releases. (see Provision E.11)	**1 October 2003** submitted 12/3/04
2. Financial Assurance Mechanisms Submit separate financial assurance mechanisms demonstrating availability of financial resources for corrective actions associated with known or reasonably foreseeable releases and for post-closure maintenance. (see Provisions E.12 and 13)	**1 January 2004**

I, THOMAS R. PINKOS, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 25 April 2003.

Thomas R Pinkos

THOMAS R. PINKOS, Executive Officer

DPS:klc

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0081
FOR
SIERRA PACIFIC INDUSTRIES, SHASTA LAKE DIVISION
FOR THE
CLOSED CLASS III WOOD WASTE LANDFILL
SHASTA COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2003-0081.

A. REQUIRED MONITORING REPORTS

	Report	Due
1.	Groundwater Monitoring (Section D.1)	**See Table I**
2.	Annual Monitoring Summary Report (Order No. R5-2003-0081, D.6)	**Annually by 31 January**
3.	Annual Facility Inspection Report (Section D.3)	**Annually by 15 November**
4.	Response to a Release (Standard Provisions and Reporting Requirements)	**As necessary**

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2003-0081 and 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 waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to clearly illustrate compliance with the waste discharge requirements or lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in Reporting Requirements D.4 of Order No. R5-2003-0081.

Field and laboratory tests shall be reported in each monitoring report. Semiannual and annual monitoring reports shall be submitted to the Regional Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

Sampling Frequency	Reporting Frequency	Reporting Periods End	Report Date Due
Semiannually	Semiannually	30 June	**31 July**
		31 December	**31 January**
Annually	Annually	31 December	**31 January**

Semiannual samples shall be collected during March and September of each year.

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in Reporting Requirements D.6 of Order No. R5-2003-0081, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be reported to the Regional Board in accordance with the schedule above for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

The Discharger shall submit a Water Quality Protection Standard Report in accordance with the time schedule established in Provisions E.13.A of Order No. R5-2003-0081.

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points. The Executive Officer shall review and approve the Water Quality Protection Standard, or any modification thereto, for each monitored medium.

The report shall:

a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.

b. Include a map showing the monitoring points and background monitoring points for the groundwater 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 all Units at the facility are those listed in Tables I through III for the specified monitored medium. The Discharger shall monitor all constituents of concern at the frequencies listed in Tables I through III, or more frequently as required in accordance with a Corrective Action Program.

a. Monitoring Parameters

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

3. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit 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.

4. Point of Compliance

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

5. Compliance Period

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure and post-closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

D. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and surface water in accordance with Detection Monitoring Specification C.1 and C.4 of Waste Discharge Requirements, Order No. R5-2003-0081. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, that includes quality assurance/quality control standards 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 leachate surface seeps shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated in Tables I through III.

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. Metals shall be analyzed in accordance with the methods listed in Table III.

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

1. Groundwater

Currently, three monitoring wells are utilized for the groundwater detection monitoring program. Well MW-1 is located hydraulically up gradient of the Unit and provides background water quality data. Wells MW-2 and MW-3 are located hydraulically down gradient and cross gradient of the Unit, respectively, and provide point of compliance water quality data.

The Discharger shall operate and maintain the groundwater detection monitoring system in compliance with applicable provisions of §20415 and §20420 of Title 27 in accordance with a detection monitoring program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with an approved Sample Collection and Analysis Plan.

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

Cross sections of the Unit shall be submitted each semiannual reporting period showing each well and the elevation of groundwater with respect to the elevation of the top and bottom of the screened interval and the elevation of the pump intake. **Hydrographs of each well shall be prepared quarterly and submitted annually.**

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters and constituents of concern in accordance with the methods and frequencies specified in Tables I and III.

The monitoring parameters shall also be evaluated once every five years (or more often if there are indicators of a release from the Unit) 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. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table III every five years.

2. Leachate Monitoring

Leachate that seeps to the surface from the Unit shall be sampled and analyzed for the monitoring parameters and constituents of concern listed in Tables II and III upon detection. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

3. Facility Monitoring

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in section D.4.f of Order No. R5-2003-0081. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. Storm Events

The Discharger **shall visually inspect** the landfill cap, storm water discharge points, and tributaries of Churn Creek that surround the site **after each storm event the produces 1.5 inches or more of precipitation within a 24 hour period**. Areas of erosion observed during the inspection(s) shall be flagged and repaired within seven days of identification. If repairs cannot be completed within the seven day time frame, the Discharger shall notify the Regional Board of such and provide a schedule for completing necessary repairs. Visually turbid surface water observed discharging off the landfill cap or in the tributaries of Churn Creek shall be inspected to determine whether the landfill or other off-site impacts are the cause of the turbidity.

The Discharger shall document and report the findings of the surface water inspections in each semiannual monitoring report. Documentation shall include date and time of each inspection, amount of precipitation that prompted the inspection, visual observations, locations of any damage identified during the inspection indicated on a site map, and all repairs completed in response to the inspection. If there are no precipitation events of 1.5 inches or greater within a 24 hour period during

the semiannual reporting period, then the monitoring report shall state such.

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

Ordered by: Thomas R Pinkos
THOMAS R. PINKOS, Executive Officer

25 April 2003
(Date)

DPS:klc

TABLE I

GROUNDWATER DETECTION MONITORING PROGRAM

Parameter	Units	Frequency
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	^{o}C	Semiannual
Electrical Conductivity	μmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Chloride	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Tannins and Lignins	mg/L	Semiannual
Constituents of Concern (see Table III)		
Carbonate	mg/L	5 years
Bicarbonate	mg/L	5 years
Nitrate – Nitrogen	mg/L	5 years
Calcium	mg/L	5 years
Magnesium	mg/L	5 years
Potassium	mg/L	5 years
Sodium	mg/L	5 years
Silica (to assist in ion-balance calculations)	mg/L	5 years
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	μg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	μg/L	5 years

TABLE II

LEACHATE DETECTION MONITORING PROGRAM

Parameter	Units	Frequency
Field Parameters		
Total Flow	Gallons	Monthly
Flow Rate	Gallons/Day	Monthly
Electrical Conductivity	µmhos/cm	Monthly
pH	pH units	Monthly
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Annually
Chloride	mg/L	Annually
Carbonate	mg/L	Annually
Bicarbonate	mg/L	Annually
Nitrate - Nitrogen	mg/L	Annually
Sulfate	mg/L	Annually
Calcium	mg/L	Annually
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Sodium	mg/L	Annually
Tannins and Lignins	mg/L	Annually
Constituents of Concern (see Table III)		
Total Organic Carbon	mg/L	Annually
Inorganics (dissolved)	mg/L	Annually
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	Annually
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	Annually

TABLE III

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Inorganics (dissolved):	USEPA Method
Aluminum	6010
Antimony	7041 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Barium	6010
Beryllium	6010
Cadmium	7131A or 6010 (Trace ICP) and 200.8 (ICP/MS)
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Lead	7421 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Mercury	7470A
Nickel	7521 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Selenium	7742 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Thallium	7841 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Cyanide	9010B
Sulfide	9030B

Volatile Organic Compounds:

USEPA Method 8260

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
2-Dibromoethane (Ethylene dibromide; EDB)

TABLE III

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, l-Dichloroethene; Vinylidene chloride)
cis- l ,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- l ,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- l ,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene

TABLE III

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270 - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methyethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene

TABLE III

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

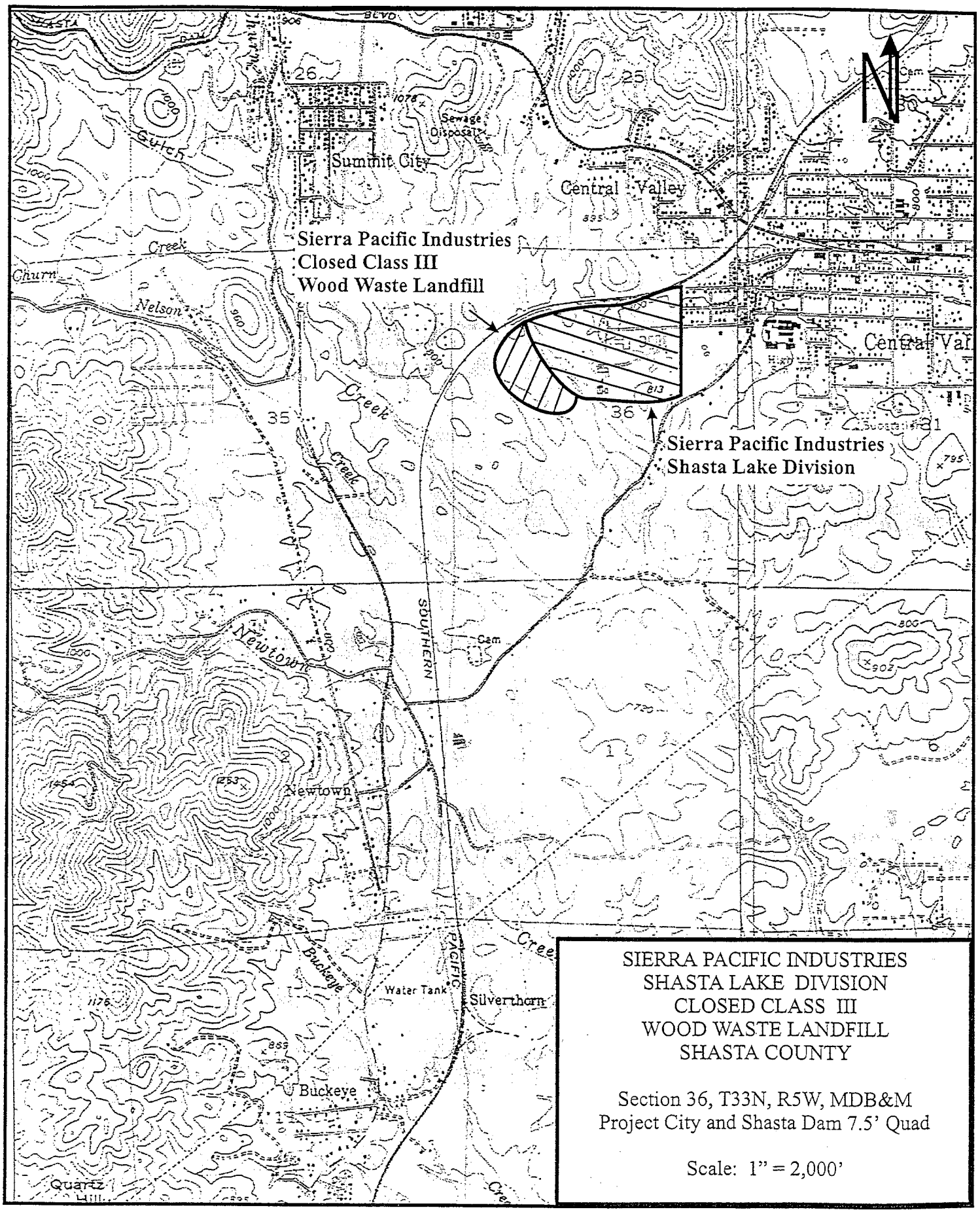
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimehtylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin

TABLE III

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

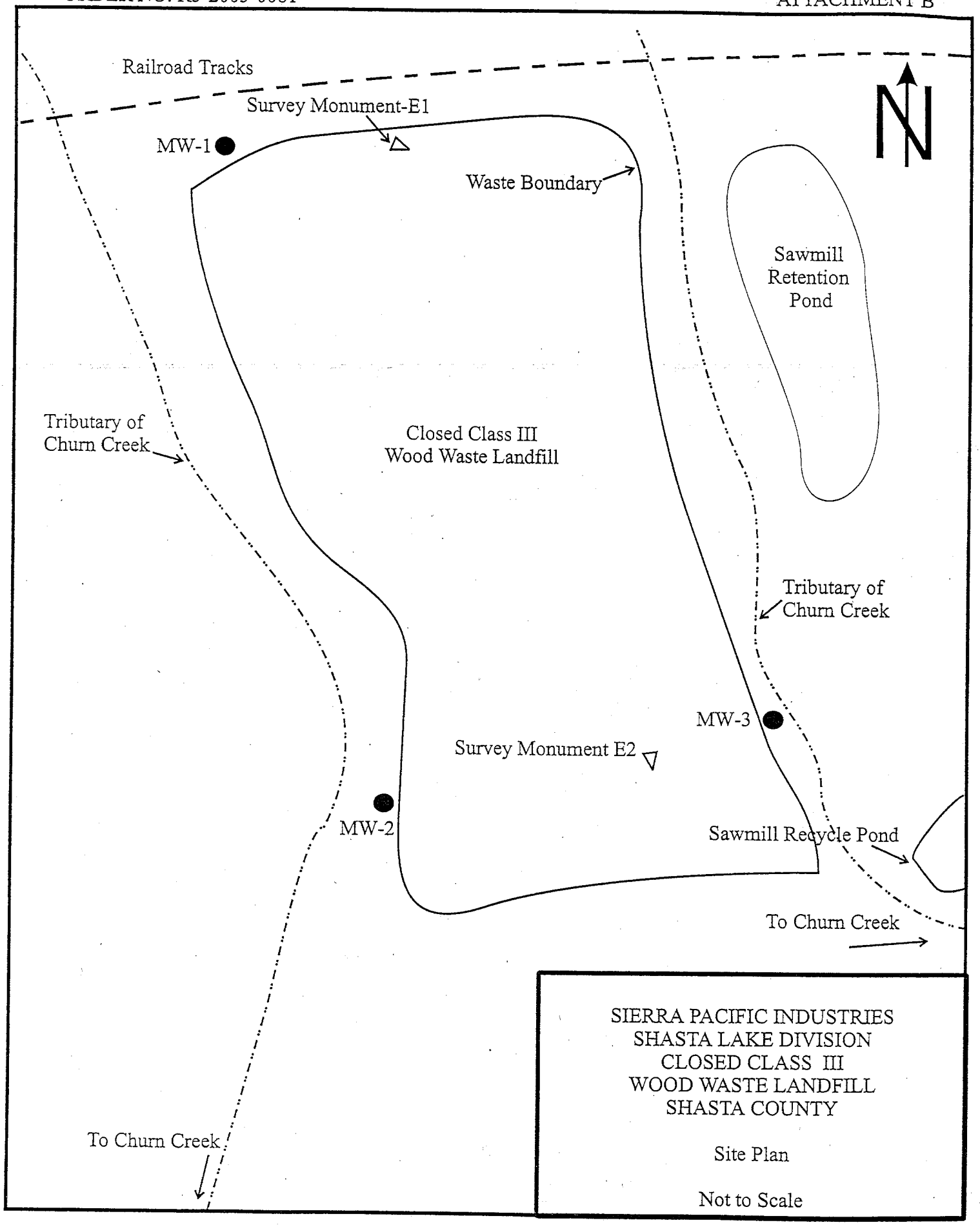
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosospyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene



SIERRA PACIFIC INDUSTRIES
SHASTA LAKE DIVISION
CLOSED CLASS III
WOOD WASTE LANDFILL
SHASTA COUNTY

Section 36, T33N, R5W, MDB&M
Project City and Shasta Dam 7.5' Quad

Scale: 1" = 2,000'


Railroad Tracks
Survey Monument-E1
MW-1
Waste Boundary
N
Sawmill Retention Pond
Tributary of Churn Creek
Closed Class III Wood Waste Landfill
Tributary of Churn Creek
MW-3
Survey Monument E2
MW-2
Sawmill Recycle Pond
To Churn Creek
To Churn Creek
SIERRA PACIFIC INDUSTRIES
SHASTA LAKE DIVISION
CLOSED CLASS III
WOOD WASTE LANDFILL
SHASTA COUNTY
Site Plan
Not to Scale

INFORMATION SHEET

ORDER NO. R5-2003-0081
SIERRA PACIFIC INDUSTRIES, SHASTA LAKE DIVISION
CLOSED CLASS III WOOD WASTE LANDFILL
SHASTA COUNTY

The Sierra Pacific Industries (SPI), Shasta Lake Division, Closed Class III Wood Waste Landfill is located at 3735 El Cajon Avenue, Shasta Lake, on property owned by SPI. The wood waste disposal site ceased operation in 1987 and site closure was completed in 1990.

Various owners operated the landfill between 1963 and 1971. No records are available for operations that occurred between 1963 and 1971. Test pits dug at the site before closure showed that the pre-1971 waste stream consisted of log yard cleanup materials, wood shavings, and sawdust. Sierra Pacific Industries purchased the landfill and adjacent mill in 1971. Log yard waste disposal activities continued until operations ceased in 1987. Approximately 81,000 cubic yards of waste materials were disposed at the site during the active life of the facility.

The landfill consists of one unlined waste management unit that covers approximately 10 acres. At closure, the landfill was graded to a three percent slope and capped with a one foot soil foundation layer, a clay barrier layer, and a one foot earthen vegetative layer. The final cover is well vegetated and only minor erosion has been noted after severe storms over the last several years. Storm water runoff from the eastern portion of the landfill is directed towards an intermittent tributary of Churn Creek, and runoff from the western portion of the landfill is directed to a different tributary of Churn Creek

Native soils beneath the site consist of approximately 10 to 15 feet of clayey silt underlain by five feet of transition soils comprised of sand and rock with a clayey silt matrix. The transition soils grade downward to highly weathered and fractured bedrock that composes the upper portion of the Copley Greenstone.

The groundwater monitoring system at the site consists of three monitoring wells installed between 12 and 40 feet below ground surface. First encountered groundwater is between 12 and 20 feet below ground surface.

This Order revises Waste Discharge Requirements Order No. 91-159 to allow semiannual groundwater monitoring and incorporate provisions of Title 27, California Code of Regulations.

DPS:klc