CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0100

NPDES NO. CA0082066

WASTE DISCHARGE REQUIREMENTS FOR SIERRA PACIFIC INDUSTRIES ANDERSON DIVISION SHASTA COUNTY

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

1. Sierra Pacific Industries, (hereafter Discharger), submitted a Report of Waste Discharge (RWD), dated 4 November 2002, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES).

2. The Discharger operates a 150 million board foot sawmill complex approximately one mile northwest of the City of Anderson in Section 9, T30N. R4W, MDB&M, as shown on Attachment A, a part of this Order. The property, (Assessor's Parcel Nos. 050-100-15, 050-110-23, and 050-110-25) is owned by the Discharger. The discharge is presently regulated under waste discharge requirements Order No 98-126, (CA0082066), adopted by the Board on 5 June 1998.

3. The Discharger's facility consists of sawmill, planer mill, millwork, drying kilns, wood fired co-generation boiler for generation of electric power and steam for kiln heating, unpaved log unloading and scaling yard, rough cut lumber storage area, bark processing and storage area, chip loading area, log deck, pole log deck, fabrication shop, truck shop, paved finished lumber storage areas and separate pole handling facilities which include a scaling yard and log deck. These facilities are shown on Attachment B, a part of this Order. The sawmill's primary functions are the processing of Douglass Fir and pine to dimensioned lumber and the production of untreated power poles. Wastes generated include boiler blowdown, steam condensate, boiler feedwater treatment system effluent, log deck spray runoff, wood waste, wood ash, and storm water runoff.

4. Process wastewater and storm water runoff generated from the sawmill portion of the facility are managed by means of four ponds. The ponds and discharges described below are shown on Attachment B.

   Fire Pond – The 4.5 acre Fire Pond receives boiler feedwater treatment system effluent from the reverse osmosis system, runoff from the chip loading area and pole log deck, ash quench water, cooling tower blowdown, and runoff from adjacent areas. The Fire Pond is hydraulically connected to a smaller 0.75 acre Fire Pond, which discharges to the S.P. Ditch, formerly called the "Old Champion Ditch". (This discharge was designated as SW-1 in the previous permit). Water from the Fire Pond is also used for dust control.

S.P. Ditch – The S.P. Ditch receives overflow from the smaller Fire Pond, a portion of the recycled water from log deck sprinkling (approximately 15 %), and storm water discharge from two other off site industrial facilities, Siskiyou Forest Products and Wheelabrator Hudson. Storm water discharges from the two offsite facilities are covered under the General Industrial Storm Water Permit, Order No. 97-03-DWQ (General Permit No. CAS000001). Excess water in the S.P. Ditch is diverted north into a 25 acre Retention Pond through a 24 inch sub grade steel culvert which passes under the ACID Canal. The S.P. Ditch continues past the point of diversion to the Retention Pond, and flows toward the Sacramento River. Under normal rainfall conditions, the entire flow in the S.P. Ditch discharges to the Retention Pond, but under heavy rainfall conditions water can enter a ditch leading to the Log Deck Recycle Pond. Under very heavy rainfall conditions the S.P. Ditch can also discharge to the Sacramento River, a water of the United States, at Discharge 001; however, this discharge is currently sealed.

Log Deck Recycle Pond (LDRP) - Approximately 85% of the water sprinkled on logs is routed back to a 0.85 acre LDRP. When freeboard in the LDRP is limited its contents can be pumped to the large Retention Pond through a 6 inch steel pipe that is sub grade for approximately 180 feet and aboveground for approximately 210 feet. Transfer from the LDRP is achieved by two 75 horsepower turbine pumps, each rated at 1000 gpm. Boiler blowdown is also discharged to the LDRP and water from the Fire Pond can also be pumped to the LDRP.

Retention Pond – The 25 acre Retention Pond receives all the excess process water and storm water runoff discharged to the S.P. Ditch. There is currently no discharge from the Retention Pond and, as a result of its capacity and percolation, all process and storm water has been retained and no discharges to the Sacramento River have occurred from Discharge 001 for over 20 years. The Discharger in the Report of Waste Discharge indicated that should a discharge to the Sacramento River be necessary, water from the Retention Pond or S.P. Ditch would be discharged to the Sacramento River at Discharge 001. This discharge is currently sealed, however, the Discharger wishes to retain this discharge point if excessive rainfall occurs that cannot be retained by the Retention Pond.

5. Storm water runoff and roof drainage from the Planer Mill, Stacker, Cooling Shed, and Drying Kilns enters the Sacramento River immediately upstream of the confluence with Spring Gulch Creek as shown on Attachment B (Discharge 002). The drainage area for Discharge 002 also contains finished lumber and temporary wood waste storage. Discharge 002 was designated as SW-2 in the previous Permit.

6. The Discharger dries dimensioned lumber in steam heated drying kilns. Steam is supplied by a diesel fueled fire tube boiler with a capacity of 80,000 lbs of steam per hour. Wastes generated by the operation of the boiler include sodium chloride solution from the regeneration of the ion exchange boiler feedwater treatment system, blowdown resulting from the cleaning of the tubes, and condensate containing additives to prevent scaling. Chemicals used in the operation of the boiler include sodium chloride, sodium hydroxide, water soluble polymer, anhydrous ammonia, potassium hydroxide, sodium metabisulfite, diethyl amino

ethanol, cyclohexyl amine, morpholine, sodium nitrite, sodium borate, and sodium hypochlorite. Wastewater containing these chemicals is discharged to the Fire Pond.

7. Storm water from the central plant area enters the Sacramento River through a 12 inch corrugated metal pipe, designated as Discharge 003, as shown on Attachment B. The Discharger is proposing to eliminate Discharger 003 by the end of the year (2004).

8. The Discharger recently installed a Sapstain Control System at the east end of the planer building. This is a closed loop spray system used to prevent stain, mold, and decay of freshly cut lumber. Lumber is sprayed with a mixture containing a "wood preservative", "lumber brightener", mildew control agent, and moisture controller. These materials are proprietary formulations of Kop-Coat Inc., and do not contain pentachlorophenol or other persistent chlorinated materials. Any excess material, which drips from the lumber, is collected in a catch basin and recycled. Materials safety data sheets for all materials used in the process are held by the Discharger.

9. Water for the plant is supplied from two on-site wells. Well No. 1 was drilled in 1948 and was completed at 225 feet below ground surface (bgs). Well No. 2a was completed at 340 feet bgs and was drilled in 1997. The Discharger also has a riparian water right for Sacramento River water.

10. Domestic wastewater is discharged to septic tank leachfield systems. The locations of the five leachfields are shown on Attachment B.

11. The property is in the Redding Hydrologic Area (No. 508.10), as depicted on interagency hydrologic maps prepared by the Department of Water Resources (DWR) in August 1986. The mean annual rainfall is approximately 38 inches and the 10-year 24-hour storm is 4.6 inches. The pan evaporation rate is approximately 60 inches per year, based on information obtained from DWR Bulletin 73-79 (November 1979).

12. The Discharger has submitted a storage statement and fee to the State Water Resources Control Board and obtained coverage under the Aboveground Petroleum Storage Act. A Spill Prevention Control and Countermeasure, (SPCC) Plan dated January 2004, as required by the Act, has been prepared which identifies the petroleum product, quantity, storage location and containment. Products stored include diesel, (20,000 gallons), gasoline, (10,000 gallons), motor oil, (1,000 gallons), hydraulic oil, (1,000 gallons), and waste oil, (800 gallons).

13. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.

14. The Board adopted a *Water Quality Control Plan*, *Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and describes an implementation program and policies to achieve water quality objectives for all waters of the Basin. This includes plans and policies adopted by the SWRCB and incorporated by reference, such as Resolution No. 68-16,

Statement of Policy with Respect to Maintaining High Quality of Waters in California. These requirements implement the Basin Plan.

15. U.S. EPA adopted the *National Toxics Rule* (NTR) on 22 December 1992, which was amended on 4 May 1995 and 9 November 1999, and the *California Toxics Rule* (CTR) on 18 May 2000, which was amended on 13 February 2001. These Rules contain water quality standards applicable to this discharge. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP) on 2 March 2000, which contains policies and procedures for implementation of the NTR and the CTR.

16. The Basin Plan identifies the following beneficial uses for the Sacramento River: municipal and domestic supply; agricultural supply; water contact and noncontact recreation; warm and cold freshwater habitat, migration of aquatic organisms; spawning, reproduction, and/or early development of fish; esthetic enjoyment; groundwater recharge; freshwater replenishment; and preservation and enhancement of fish, wildlife and other aquatic resources.

17. The beneficial uses of groundwater are municipal and domestic supply (MUN), industrial service supply (IND), industrial process supply (PRO) and agricultural supply (AGR).

18. Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. The NTR and CTR contain water quality standards applicable to this discharge. On 8 December 2000, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent and receiving water monitoring to perform a reasonable potential analysis to determine if pollutants are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. The Discharger sampled the effluent from Discharge 002 and receiving water on 7 November 2002 to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticides, metals, asbestos, 2,3,7,8-TCDD dioxin, and sixteen other dioxin congeners. The methodology described in Section 1.3 of the State Implementation Policy (SIP) was used to evaluate the Discharger's monitoring data and determine reasonable potential. Cadmium, copper, lead, zinc and bis(2-ethylhexyl) phthalate were detected in the effluent from Discharge 002 at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective. The Discharger sampled the Retention Pond on 12 May 2003 and the S.P. Ditch on 3 November 2003 to determine if the priority pollutants established in the CTR and NTR were detected. Priority pollutant substances were not detected in the Retention Pond or S.P. Ditch at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective for a discharge from Discharge 001.

19. The Basin Plan contains a narrative standard for toxicity, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, or aquatic life". The Discharger has had episodic violations of the acute toxicity limit in undiluted effluent for Discharge 002, (formerly SW-2), since the early 1990s. In addition the concentration of zinc in the discharge from Discharge 002 has been high, particularly during rainfall after a prolonged dry spell. Zinc concentrations have been measured as high as 1,150 ug/L total zinc. The high zinc levels and toxicity are correlated but the Discharger's consultant has determined that there are additional correlative factors including concentration of wood resin acids. The Discharger conducted a Toxicity Reduction Evaluation for zinc and has implemented numerous source control measures in an effort to reduce the toxicity. These measures have reduced the zinc concentrations in the discharge, however, periodic toxicity violations have continued and zinc concentrations have remained high. Samples collected from 2001 to 2003 have contained varying concentrations of total zinc ranging from 149 to 707 ug/L.

20. The Sacramento River from Shasta Dam to Red Bluff was previously listed as an impaired waterbody pursuant to Section 303(d) of the Clean Water Act for cadmium, copper, zinc and unknown toxicity. The listing for metals was mainly a result of long term affects of mining operations at Iron Mountain Mine (located along this reach of river) in addition to other mines upstream of Shasta Dam. Regional Board staff developed a Total Maximum Daily Loads (TMDL) water management strategy for cadmium, copper and zinc loading into the upper Sacramento River. The Board has adopted the technical report, *Upper Sacramento River TMDL for Cadmium, Copper and Zinc*, dated April 2002. There has been a great deal of physical corrective work done at Iron Mountain Mine in the recent years with more work planned in the next few years. An interim TMDL has been developed that focuses on additional copper, cadmium, and zinc removal from Iron Mountain Mine. Five years from development of the interim TMDL a final TMDL, if necessary, will be developed for these metals. The TMDL requires NPDES permitted dischargers to monitor for dissolved metals and Staff is to evaluate the monitoring results and assign wasteload allocations as needed to ensure that the Sacramento River between Keswick Dam and Red Bluff complies with the proposed numeric targets. The newly adopted 303(d) listing does not include this reach of the river as impaired for these metals.

21. In determining whether a discharge has the reasonable potential to contribute to an in-stream excursion above a narrative or numerical water quality standard (reasonable potential analysis), the dilution of the effluent in receiving water may be considered where areas of dilution are defined. The available dilution may also be used to calculate protective effluent limitations by applying water quality criteria at the edge of the defined mixing zone. In situations where receiving water flows are substantially greater than effluent flows and there is available assimilative capacity, dilution may be considered in establishing effluent limitations.

22. The Discharger's consultant conducted a mixing zone study to evaluate attenuation of potential impacts of toxicity and total zinc concentrations from Discharge 002 to the Sacramento River receiving water. The consultant used the CORMIX 3 version 3.01Hydrodynamic Mixing Zone Model to estimate the size and rate of the mixing under

worst-case conditions of low flow and high discharge rate. The 7Q10 flow used for the modeling is 2840 cfs. Peak storm water runoff rates for the 2-year, 24-hour event (4,250 gpm), 5-year, 24-hour event (5100 gpm), and the 25-year, 24-hour storm event (6900 gpm) were estimated for modeling different storm intensities and volumes. The mixing zone modeling results indicated there is rapid initial mixing in the near field zone of initial dilution, quickly reducing potential toxicity effects by reducing the discharge strength by 1:3 or approximately 25 percent of original strength within a few seconds. Based on the modeling results, a mixing zone approximately 5 meters wide by 10 meters long within the receiving water would achieve dilution of the effluent to 25 percent of its initial concentration at the outer edge. The far-field mixing zone produces a dilution of 1:40 or approximately 2.5 percent of original strength approximately 140 to 170 meters downstream, with a plume ranging from 20 to 30 meters. Based on the mixing zone study the Discharger is requesting dilution credits for both acute toxicity and zinc concentrations. Based on the dilution study and toxicity results, the Discharger determined a dilution of 1:10 should consistently yield a survival rate above 90 percent. The Discharger is requesting that the Regional Board grant a dilution credit associated with a zone of initial dilution resulting in a 1:10 dilution level. Based on a total zinc concentration of 623 ug/L the Discharger determined a 1:40 dilution is required to meet the receiving water objective at the edge of the mixing zone. Therefore the Discharger is requesting that the Regional Board grant a dilution credit for zinc associated with a mixing zone resulting in a 1:40 dilution level.

23. The Discharger's facility is one of four facilities that Discharge to the Sacramento River between Redding and Anderson. The Regional Board on 5 September 2003 adopted Waste Discharge Requirements, Order No. R5-2003-0130 for the City of Redding (City), Clear Creek Wastewater Treatment Plant, located approximately two miles above the Dischargers property. The Regional Board granted the City a dilution credit for copper and zinc, however the Regional Board only allotted the City 20 percent of the assimilative capacity of the River in establishing effluent limits. This allows for the four dischargers in this reach of the river to share the assimilative capacity (20 percent each) and gives a 20 percent allowance for municipal storm water discharges and other unknown discharges. Therefore, in this Order the Regional Board is only allotting the Discharger 20 percent of the assimilative capacity.

24. Water quality criteria and objectives for metals in the CTR and Basin Plan are presented as dissolved concentrations for cadmium, copper, and zinc and are hardness dependent. Based on receiving water information available for the Sacramento River for the past three years, the minimum hardness during the period of discharge from the Dischargers facility is 44 mg/L. Lacking site-specific data, the USEPA recommends conversion factors (translators) to translate dissolved concentrations to total concentrations. The USEPA conversion factor for copper in freshwater is 0.960 for both the acute and the chronic criteria. The USEPA conversion factors for zinc in freshwater are 0.978 for the acute and 0.986 for the chronic criteria. The Regional Board in adopting Order No. R5-2003-0130 for the City used site-specific translators for copper and zinc for this reach of the Sacramento River based on receiving water data provided by the City. Using this data it was determined that the EPA standard conversion factors (translators) may not be representative of the dissolved fraction of copper and zinc in this reach of the Sacramento River during the period of discharge. The SIP

contains guidance on the development of translators. The median and 90th percentile values are used for the chronic and acute translators in accordance with Section 1.4.1 of the SIP. The following translators were used to determine the applicable water quality criteria for copper and zinc:

	Chronic	Acute
Copper	0.666	0.711
Zinc	0.723	0.780

The USEPA conversion factors for cadmium and lead were used to determine applicable water quality criteria for these metals. The conversion factors for cadmium and lead are hardness dependent and are calculated for a hardness of 44 mg/L using the following equations:

Cadmium:

$CF_{Chronic}$ = 1.101672 - [(ln {hardness})(0.041838)], at 44 mg/L hardness = 0.9433
CF_{Acute} = 1.136672 - [(ln {hardness})(0.041838)], at 44 mg/L hardness = 0.9783

Lead:

$CF_{Chronic}$ = 1.46203 - [(ln {hardness})(0.145712)], at 44 mg/L hardness = 0.9106
CF_{Acute} = 1.46203 - [(ln {hardness})(0.145712)], at 44 mg/L hardness = 0.9106

25. In studies conducted by the Discharger and sampling by Regional Board staff, the Maximum Effluent Concentration (MEC) for total copper was reported as 37 ug/L. The CTR acute aquatic life criterion for copper is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for copper is 8.62 ug/L (total recoverable, after adjusting for minimum hardness of 44 mg/L and applying the site specific translator of 0.711). The CTR aquatic life chronic criterion for copper is applicable and is 6.67 µg/L (for minimum receiving water hardness and applying the site specific translator of 0.666). In determining the Effluent Concentration Allowance (ECA) a dilution credit of 40 was used. For calculation of effluent limits the difference between the river dissolved concentrations and calculated criterion for the measured hardness was evaluated during the period of discharge and the minimum value used for "C-B" in the ECA equation in step No. 2 of SIP section 1.4.B. This "C-B" value represents the critical condition assimilative capacity in this reach of the river. A safety factor of five (5) was applied to the "C-B" value such that 20 percent of the assimilative capacity of the river was used to calculate an effluent limit. An effluent limitation for copper is included in this Order based on the CTR chronic toxicity criterion and is established as 10.8 µg/L as a monthly average and 21.6 µg/L as a daily maximum, calculated as shown in the Information Sheet, a part of this Order.

26. In studies conducted by the Discharger and sampling by Regional Board staff, the MEC for total zinc was reported as 707 ug/L. The CTR acute aquatic life criterion for zinc is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for zinc is 22.2 ug/L (total recoverable, after adjusting for minimum hardness of 44 mg/L and applying the site specific translator of 0.780).

The CTR chronic aquatic life criterion is applicable and is 81.5 ug/L (total recoverable for a minimum receiving water hardness and applying the site specific translator of 0.723). In determining the ECA a dilution credit of 40 was used. The ECA and effluent limits were calculated using the same approach as presented for copper. An effluent limitation for zinc is included in this Order based on the CTR chronic toxicity criterion and is established as 59.3µg/L as a monthly average and 120.2 µg/L as a daily maximum, calculated as shown in the Information Sheet, a part of this Order.

27. In studies conducted by the Discharger and sampling by Regional Board staff, the MEC for total cadmium was reported as 3.1 ug/L. The CTR acute aquatic life criterion for cadmium is not applicable to the Sacramento River or its tributaries above Hamilton City. For these areas, the Basin Plan instantaneous water quality objective for cadmium is 0.245 ug/L (total recoverable, after adjusting for hardness and applying the USEPA translator of 0.9783). The CTR chronic aquatic life criterion is applicable and is 0.292 ug/L (total recoverable for a minimum receiving water hardness of 44 mg/L and applying the USEPA translator of 0.9433). In determining the ECA a dilution credit of 40 was used. The ECA and effluent limits were calculated using the same approach as presented for copper. An effluent limitation for cadmium is included in this Order based on the CTR chronic toxicity criterion and is established as 0.138 µg/L as a monthly average and 0.277 µg/L as a daily maximum, calculated as shown in the Information Sheet, a part of this Order.

28. In studies conducted by the Discharger and sampling by Regional Board staff, the MEC for total lead was reported as 11.1 ug/L. The CTR acute and chronic aquatic life criterion for lead are applicable to these discharges and are given by the following formulas:

$$Pb_{acute} = e^{1.273\,(\ln Hardness) - 1.460} \times (1.46203 - \ln hardness \times .145712)$$
$$Pb_{chronic} = e^{1.273\,(\ln Hardness) - 4.705} \times (1.46203 - \ln hardness \times .145712)$$

The lowest observed, representative hardness measurement of the receiving water for the discharge period was 44 mg/l. When this value for hardness is used in the formulas and the USEPA conversion factor is applied, the Pb_{acute} criterion/objective is determined to be 28.71 µg/L, (dissolved) and the $Pb_{chronic}$ criterion/objective is determined to be 1.12 µg/L (dissolved). In determining the ECA a dilution credit of 40 was used. The ECA and effluent limits were calculated using the same approach as presented for copper. An effluent limitation for lead is included in this Order based on the CTR chronic toxicity criterion and is established as 4.93 µg/L as a monthly average and 9.89 µg/L as a daily maximum, calculated as shown in the Information Sheet, a part of this Order.

29. Based on the results of effluent monitoring, the Discharger cannot currently comply with the new effluent limitations for copper, cadmium, zinc and lead. The effluent limits for copper, cadmium and zinc are based on previously existing Basin Plan water quality objectives and therefore are fully applicable upon adoption of this Order by the Regional Board. A time schedule for compliance with these effluent limits is not provided by this Order. However, the Regional Board may adopt other Orders allowing the Discharger a period of time to fully comply with effluent limits for copper, cadmium and zinc. The effluent limits for lead are

based on more recently adopted water quality criteria contained in the CTR. Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *…"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to provide this information.

30. The SIP, Section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Board shall establish interim limitations and dates for their achievement in the NPDES permit. The interim limitations must: be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year, and; be included in the Provisions. The interim limitations in this Order are based on the current performance. In developing the interim limitations, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean. Where actual sampling shows an exceedance of the proposed 3.3-standard deviation interim limit, the maximum detected concentration is established as the interim limitation. When there are less than ten sampling data points available, the *Technical Support Document for Water Quality Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed sampling point to obtain the daily maximum interim limitation.

31. Lead was detected in effluent from the Facility at a concentration of 11.1 ug/L in Discharge 002. Since the number of samples taken was less than 10, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for lead is 34.5 ug/L. The long-term average objective is to maintain the current level of pollutant concentrations or better. Therefore, the monthly average interim limit for lead cannot exceed the maximum detected concentration that is 11.1 ug/L.

32. The Discharger sampled Discharge 002 once for bis(2-ethylhexyl) phthalate and reported 5 ug/L. A human health criterion for bis(2-ethylhexyl) phthalate of 1.8 µg/L, for consumption

of both water and organisms, was established in the NTR. Concerning calculation of final effluent limitations for bis(2-ethylhexyl) phthalate for discharge to the Sacramento River, the SIP provides in Section 1.4 that "*If data are insufficient to calculate the effluent limitation, the RWQCB shall establish interim requirements in accordance with Section 2.2.2*." There is insufficient effluent and receiving water data for proper calculation of final effluent limitations. Therefore, this Order includes a time schedule for the Discharger to collect sufficient information for the calculation of final effluent limitations for discharge to the Sacramento River. When sufficient data are collected, it is the intent of the Regional Board to include final water quality-based effluent limitations for bis(2-ethylhexyl) phthalate as enforceable limitations.

In accordance with the SIP, Sections 2.2.1 and 2.2.2, for discharge to the Sacramento River, a numeric interim limitation for bis(2-ethylhexyl) phthalate has been established in this Order based upon current performance. Bis(2-ethylhexyl) phthalate was detected at 5.0 µg/L in a single effluent sample. As described above for lead, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for bis(2-ethylhexyl) phthalate is 15.6 µg/L (total recoverable). The Order may be reopened to include a new interim or final effluent limitation for bis(2-ethylhexyl) phthalate after additional effluent data have been collected.

33. The Discharger operates a "wet deck" log storage operation and a "sawmills and planing mills" operation, therefore, effluent limitations established in Timber Products Processing Point Source Category Code of Federal Regulations (40 CFR Part 429) are applicable to the discharge. Specifically, Subpart I (Wet Storage Subcategory) and Subpart K (Sawmills and Planing Mills Subcategory) apply. Effluent guidelines for wet log storage are based on "best practicable control technology currently available". The effluent limitation states that there shall be no debris discharged and the pH shall be within the range of 6.0 to 9.0. CFR Part 429.11(i) defines debris as woody material such as bark, twigs, branches, heartwood or sapwood that will not pass through a one inch diameter round opening. It is the intent of this permit to prohibit the discharge of sawdust to receiving waters. However, it is impractical to eliminate all sawdust discharges beyond that which would occur with implementation of Best Management Practices (BMPs). Numeric effluent limits were not established for sawdust, as a numeric limit is infeasible. Instead, per 40 CFR 122.44 (k), a discharge specification is established to require implementation and maintenance of BMPs to reduce sawdust discharges to the maximum extent practicable. CFR Parts 429.20, 429.124 and 429.134 contain a narrative effluent guideline for the sawmill operations, which states that there shall be no discharge of process wastewater pollutants into navigable waters. Effluent limits for pH and settleable matter are included in this Order.

34. Federal Regulations for storm water discharges were promulgated by USEPA on 16 November 1990 (40 CFR Parts 122,123, and 124). The regulations require specific categories of facilities, which discharge storm water associated with industrial activity (storm water), to obtain NPDES permits and to implement Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to reduce or eliminate industrial storm water pollution.

35. State Water Resources Control Board (SWRCB) Order No. 97-03-DWQ (General Permit No. CAS000001) specifies storm water waste discharge requirements associated with industrial activities, excluding construction activities, and requires either coverage under General Permit No. CAS000001 or an individual permit adopted for storm water runoff. This individual permit and the provisions and monitoring it contains concerning storm water relieve the Discharger from seeking coverage under General Permit No. CAS000001. The General Permit, Table D, requires sawmill facilities to sample for additional constituents. Specifically, the category "General Sawmills and Planing Mills" and "Log Storage and Handling" requires chemical oxygen demand (COD), total suspended solids (TSS), and zinc to be monitored. This individual permit and the provisions and monitoring it contains concerning storm water relieve the Discharger from seeking coverage under the General Permit.

36. This Order establishes concentration-based effluent limits. Mass-based effluent limits are also required to be established, however it is not possible to establish the mass-based effluent limits at this time due to lack of effluent flow information. This Order requires the Discharger to construct, maintain, and operate a weir or other flow measurement device to accurately measure the flow of Discharge 002. The flow in the Sacramento River is available from the California Department of Water Resources web site, and the discharge at Discharge 001 is so infrequent that an estimate of flow will be accepted. Upon review of sufficient flow information, the Regional Board may reopen this Order and establish mass-based effluent limits and an effluent flow limit.

37. Resolution No. 68-16 requires the Regional Board, in regulating the discharge of waste, to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies (e.g., quality that exceeds water quality objectives). Resolution No. 68-16 applies to both surface water and groundwater. The Regional Board finds that discharge in compliance with the prohibitions, limitations, specifications, and provisions in this Order is consistent with Resolution No. 68-16. The impact on water quality will be insignificant.

38. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.

39. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

40. The Regional Board has considered the information in the attached Information Sheet in developing the findings in this Order. The attached Information Sheet is part of this Order.

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

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

43. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 10 days from the date of hearing, provided USEPA has no objections.

IT IS HEREBY ORDERED that Order No. 98-126 is rescinded and Sierra Pacific Industries, Anderson Division, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastewater, including storm water, at locations or in a manner different from that described in Finding Nos. 4, 5, 6, and 7 is prohibited.

2. Discharge of wood treatment chemicals or stain control fungicides to surface waters or to groundwater is prohibited.

3. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13. (See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)").

4. Discharge of woody debris is prohibited. For the purposes of this prohibition "woody debris" is defined as woody material such as bark, twigs, branches, heartwood, sapwood, or wood chips that will not pass through a one-inch diameter round opening.

5. Discharge of woody material such as ash, sawdust, wood chips, bark, or other woody debris that will pass through a one-inch diameter round opening is prohibited except as specified in Discharge Specification C.4.

6. Discharge of waste classified as "hazardous" as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510, et seq., (hereafter Chapter 15) or "designated", as defined in Section 13173 of the California Water Code, is prohibited.

B. Effluent Limitations (Discharges 001, 002, and 003)

1. The discharge of wastewater to the Sacramento River in excess of the following limits is prohibited:

Constituent	Unit	Average Monthly Effluent Limit (AMEL)	Maximum Daily Effluent Limit (MDEL)
Settleable Solids	ml/L	0.1	0.2
Cadmium (Total Recoverable)	µg/L	0.138	0.277
Copper (Total Recoverable)	µg/L	10.8	21.6
Zinc (Total Recoverable)	µg/L	59.3	120.2
Lead (Total Recoverable) [1]	µg/L	4.93	9.89

[1] Final effluent limit. Interim effluent limits may supercede as described in this Order.

2. Interim effluent limits have been established for the following constituents. The interim effluent limits for lead may supercede the above final effluent limits as described in this Order. The interim discharge of wastewater to the Sacramento River in excess of the following is prohibited:

Parameter	Unit	30-Day Average	Daily Maximum
Lead (total recoverable)	µg /L	11.1	34.5
Bis(2-Ethylhexyl)phthalate	µg /L	--	15.6

3. The discharge shall not have a pH less than 6.0 or greater than 9.0, except during discharges associated with a 10-year 24-hour rainfall event.

4. Survival of aquatic organisms in 96-hour bioassays of a 1:10 dilution of waste to receiving water shall be no less than:
   Minimum for any one bioassay - - - - - - - - - - - - - - - - - - -70%
   Median for any three or more consecutive bioassays - - - - - -90%

C. Discharge Specifications

1. Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the California Water Code, Section 13050.

2. The discharge shall not cause degradation of any water supply.

3. The dissolved oxygen content in the upper one (1) foot of the log deck recycle pond, the retention pond and the fire ponds shall not be less than 1.0 mg/L.

4. The discharge of woody material such as ash, sawdust, wood chips, bark, or other woody debris that will pass through a one-inch diameter round opening shall be reduced to the maximum extent practicable by the implementation of BMPs approved by the Executive Officer.

D. Sludge, Wood Waste, and Ash Management

1. Collected screenings, sludge, wood ash, and other solids removed from liquid wastes, recycle ponds, retention ponds, recycle return ditches, oil/water separators, catch basins, or other applicable sources shall be disposed of in a manner approved by the Executive Officer and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq.

2. Any proposed change in sludge or ash use or disposal practice shall be reported to the Executive Officer at least **30 days** in advance of the change.

3. Wood ash removed from the facility shall be:

   a. Tilled into agricultural fields for soil amendment if it is non-hazardous; or

   b. Disposed in a dedicated unit consistent with Title 27, Section 20200(b); or

   c. Disposed in a Class III landfill consistent with Title 27, Section 20220(d).

   Any other use shall constitute disposal and shall be subject to Title 27, CCR requirements.

E. Receiving Water Limitations

Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the Sacramento River:

1. Concentrations of dissolved oxygen to fall below 9.0 mg/L. When natural conditions lower dissolved Oxygen below this level, the concentrations shall be maintained at or above 95 percent of saturation.

2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.

4. Aesthetically undesirable discoloration.

5. Fungi, slimes, or other objectionable growths.

6. The turbidity to increase as follows:

    a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.

    b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.

    c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.

    d. More than 10 percent where natural turbidity is greater than 100 NTUs.

    In determining compliance with the above limits, appropriate averaging periods may be applied upon approval by the Executive Officer.

7. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

8. Deposition of material that causes nuisance or adversely affects beneficial uses.

9. The normal ambient temperature to be increased more than 5°F, or to higher than 56°F when such an increase will be detrimental to the fishery, whichever is more restrictive.

10. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

11. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

12. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

13. Violations of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

14. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

F. Groundwater Limitation

1. The discharge, in combination with other sources, shall not cause usable groundwater underlying the facility to contain waste constituents statistically greater than background water quality.

G. Provisions

1. The Discharger shall comply with all items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)," dated February 2004, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)."

2. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2004-0100, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

   When requested, the Discharger shall complete and submit Discharge Monitoring Reports to USEPA. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

3. Should any of the analyses required in the Monitoring and Reporting Program No. R5-2004-0100 be performed by the Discharger or at a non-certified laboratory, the Discharger shall comply with all applicable parts of the Standard Provisions, Section C., Provisions for Monitoring including implementation of a Quality Assurance-Quality Control (QA-QC) Program and preparation of a QA-QC Plan. The QA-QC Program must conform to US EPA guidelines or to procedures approved by the Executive Officer. The QA-QC Plan must be prepared at least **one month** prior to on-site analysis, and reviewed and updated, if necessary, at a frequency not less than every 3 years.

4. The Discharger shall conduct chronic toxicity testing as specified in Monitoring and Reporting Program No. R5-2004-0100. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity at the edge of the approved mixing zone (40:1 dilution credit), the Discharger shall initiate a Toxicity Identification Evaluation

(TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a toxicity reduction evaluation (TRE), and upon approval conduct the TRE. This Order will be reopened to include a chronic toxicity limitation and/or a limitation for the specific toxicant identified in the TRE. Additionally, if a chronic toxicity water quality objective is adopted by the SWRCB, this Order may be reopened and a limitation based on that objective included.

5. **Within 60 days** after adoption of this Order, the Discharger shall complete and submit a compliance time schedule justification for lead. The compliance schedule justification shall include all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d)). The final water quality based effluent limitations for lead become effective **60 days** after adoption of this Order unless an acceptable compliance schedule justification meeting the requirements of Section 2.1 of the SIP is completed and submitted by the Discharger. If an acceptable compliance schedule justification is submitted, the interim effluent limits described in this Order for lead will supercede the final effluent limits until **60 months** after adoption of this Order. At that time the final effluent limits will be fully applicable. As this schedule is greater than one year, the Discharger shall submit annual progress reports on **1 July** each year until the Discharger achieves compliance with the final water quality based effluent limitations for lead. Within **12 months** of adoption of this Order, the Discharger shall either (1) submit a workplan for reducing the concentrations of pollutants in the discharge to levels that will comply with the final effluent limits, or (2) submit a workplan(s) for studies that will prove that the final effluent limits should be modified based on site-specific conditions. The Discharger must take such actions necessary to comply with the final effluent limits. The Regional Board may reopen this Order and modify the final effluent limits if appropriate, based on results of studies the Discharger may conduct.

6. Bis(2-ethylhexyl) phthalate has been detected in one sampling event of effluent from the Facility. There is insufficient effluent and receiving water data for proper calculation of final effluent limits. The Discharger shall comply with monitoring for bis(2-ethylhexyl) phthalate as specified in Monitoring and Reporting Program No. R5-2004-0100 to collect sufficient information for the calculation of final effluent limitations for discharge to the Sacramento River. This Order may be reopened to include a new interim or final effluent limitation for bis(2-ethylhexyl)phthalate after additional effluent data have been collected. It is possible that sources of the detected bis(2-ethylhexyl) phthalate are from plastics used for sampling or analytical equipment. If changes in sampling and/or analytical procedures and equipment indicate that bis(2-ethylhexyl) phthalate is not truly present in the effluent, then the Regional Board may reopen this Order and remove the interim effluent limits for bis(2-ethylhexyl) phthalate.

7. The Discharger shall comply with the standards contained in the Health and Safety Code, Chapter 6.67, Aboveground Storage of Petroleum. A spill prevention control

and countermeasure plan, prepared and certified by a registered professional engineer has been submitted by the Discharger.

8. The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPPP) containing BMPs to reduce pollutants in the storm water discharges. The Discharger shall review and amend as appropriate the SWPPP whenever there is a change in construction, site operation, or maintenance that may affect the discharge of significant quantities of pollutants to surface water, if there are violations of this permit, or if the general objective of controlling pollutants in the storm water discharges has not been achieved. The amended SWPPP shall be submitted prior to **15 October** in the year in which it was prepared.

9. By **15 October 2004,** the Discharger shall submit a list of BMPs to reduce, to the maximum extent practicable, the discharge of woody material such as ash, sawdust, wood chips, bark, or other woody debris that will pass through a one-inch diameter round opening. Once approved, the list of BMPs must be implemented to the maximum extent practicable. The Discharger may seek changes or add to the list of approved BMPs by submitting a written request for approval by the Executive Officer.

10. The Discharger shall submit a report prepared by a professional civil engineer registered in the State of California, which shall include a design for a flow measurement device for Discharge 002. The device shall include provision for recording of instantaneous and total daily flows. The report shall be submitted to the Redding Office by **15 September 2004**, and the recommendations implemented by **15 November 2004**. No requirement is included for the measurement of flows from Discharge 001 at this time. However, if discharge from Discharge 001 occurs on a continuous basis a device for recording of instantaneous and total daily flows will be required.

11. The Discharger shall immediately report to the Regional Board any spill that potentially degrades surface water quality.

12. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

13. The Discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.

14. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

15. This Order expires on **1 July 2009** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than **180 days** in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

16. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

    To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name, address, and the telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 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 shall be approved or disapproved in writing by the Executive Officer.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify 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 9 July 2004.

_____
THOMAS R. PINKOS, Executive Office

JFR:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

NPDES NO. CA0082066

MONITORING AND REPORTING PROGRAM NO. R5-2004-0100

FOR
SIERRA PACIFIC INDUSTRIES
ANDERSON DIVISION
SHASTA COUNTY

This Monitoring and Reporting Program is issued pursuant to California Water Code §13383 and §13267 and includes: monitoring of discharges to waters of the United States and waters of the State, receiving water monitoring, and precipitation monitoring. All water quality samples shall be representative of the volume and nature of the discharge, or representative of the matrix of material sampled. The time, date, and location of sample collection shall be recorded on a chain of custody (COC) form. COC forms shall be completed for each sample collected and copies provided to the Regional Board with the monthly monitoring reports. The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program.

PRECIPITATION MONITORING

The daily precipitation at the facility shall be recorded on weekdays and weekends. The reading shall be taken at the same time each day, and discharge monitoring should be conducted as soon as possible after one inch of rainfall has occurred. The following precipitation information shall be submitted with the monthly monitoring report:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Precipitation	Inches/tenths	Visual	Daily	Monthly

EFFLUENT MONITORING (DISCHARGE 001, 002 and 003)

Effluent samples from Discharge 001, 002 and 003 shall be collected downstream from the last connection through which wastewater can be admitted into the outfall. Effluent samples should be representative of the volume and nature of the discharge. The time of collection of a grab sample shall be recorded. The following shall constitute the monitoring program:

Constituent	Unit	Type of Sample	Sampling[1] Frequency
Discharge Flow	cfs	Visual	Daily
Precipitation	inches/tenths	Visual	Daily
pH	pH units	Grab	Two per month[2]
Settleable Solids	ml/L	Grab	Two per month[2]
Turbidity	NTU	Grab	Two per month[2]
Electrical Conductivity	µS/cm at 25°C	Grab	Two per month[2]
Total Suspended Solids	mg/L	Grab	Two per month[2]
Chemical Oxygen Demand	mg/L	Grab	Two per month[2]
Tannins and Lignins	mg/L	Grab	Two per month[2]
Hardness	mg/L	Grab	Two per month[2]
Cadmium (Total Recoverable)	ug/L	Grab	Two per month[2]
Copper (Total Recoverable)	ug/L	Grab	Two per month[2]
Lead (Total Recoverable)	ug/L	Grab	Two per month[2]
Zinc (Total Recoverable)	ug/L	Grab	Two per month[2]
Oil and Grease	mg/L	Grab	Two per month[2]
bis-2-Ethylhexylphthalate (EPA 8270)	ug/L	Grab	Two per month[2,3]
Cyanide	ug/L	Grab	Annually
Priority Pollutant Metals[4]	ug/L	Grab	Annually
Priority Pollutant Organics	ug/L	Grab	Annually

1 Samples shall be collected during the first hour from the first discharge after the dry season and according to sampling frequency thereafter.

2 The first day of each intermittent discharge shall be monitored in any consecutive 14-day period.

3 Frequency may be reduced to Annually as part of Priority Pollutant Organics upon approval of the Executive Officer after sufficient data is submitted to comply with Provision No. 6.

4 Arsenic, Antimony, Beryllium, Nickel, Selenium, Silver, Thallium, Total Chromium, Chromium VI, Mercury (CVAA-*EPA Method 1631*).

TOXICITY MONITORING

Acute Toxicity

Acute toxicity monitoring using a sample collected during the first hour from the first discharge from Discharge 001, 002 and 003 after the dry season and monthly thereafter shall be used to determine compliance with the effluent limitation of 70 % survival for any one bioassay, 90% survival as the median for any three or more consecutive bioassays in a 1:10 dilution of effluent with receiving water. The testing shall be conducted using EPA/821-R-02-012 or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of the bioassay sample collection and each day of the test. Test species shall be rainbow trout. Percent survival for the following dilutions and receiving water shall be submitted.

	Dilutions		**Control**
	100%	**10%(1:10)**[1]	**Receiving Water**
% Discharge Effluent	100	10	--
% Dilution Water[2]	--	90	100

[1] Compliance with effluent limitation requires 70% survival for any one bioassay, 90% survival as the median for three or more consecutive bioassays in a 1:10 dilution.

[2] Sacramento River Water

Chronic Toxicity

Chronic toxicity monitoring using a sample collected during the first hour from the first discharge from Discharge 001, 002 and 003 after a dry season shall be conducted **annually** to determine whether the effluent is contributing chronic toxicity at a dilution of 1:40, effluent to receiving water. The sample shall be representative of the initial discharge of the wet season. The testing shall be conducted as specified in EPA 600/4-91-002, or latest edition. Chronic toxicity samples shall be collected at the discharge prior to its entering the Sacramento River. Individual grab samples shall be representative of the volume and quality of the discharge. Date and time of sample collection shall be recorded. The results shall be submitted with the monitoring report and include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum

	Dilutions (%)					**Controls**	
	10.0	**7.5**	**5.0**	**2.5**	**1.25**	**Receiving Water**	**Lab Water**
% Discharge Effluent	10	7.5	5.0	2.5	1.25	0	0
% Dilution Water[1]	90	92.5	95.0	97.5	98.75	100	0
% Lab Water	0	0	0	0	0	0	100

[1] Sacramento River Water

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water samples shall be collected from the following stations during discharge from Discharge 001, 002 and 003.

Station	Description
R-1	Sacramento River 50 feet upstream of Discharge 001.
R-2	Sacramento River approximately 50 feet downstream of Discharge 002.

Constituent	Station	Unit	Type of Sample	Sampling Frequency[1]
Flow	R-1	cfs	Visual	Weekly
pH	R-1, R-2	pH Units	Grab	Two per month[2]
Turbidity	R-1, R-2	NTU	Grab	Two per month[2]
Hardness	R-1[3], R-2	mg/L	Grab	Two per month[2]
Cadmium (Total and Dissolved)	R-1[3], R-2	µg/L	Grab	Two per month[2]
Copper (Total and Dissolved)	R-1[3], R-2	µg/L	Grab	Two per month[2]
Lead (Total and Dissolved)	R-1[3], R-2	µg/L	Grab	Two per month[2]
Zinc (Total and Dissolved)	R-1[3], R-2	µg/L	Grab	Two per month[2]
bis-2-Ethylhexylphthalate	R-1[3], R-2	µg/L	Grab	Two per month[2,4]

[1] Samples shall be collected during the same sampling event as the effluent discharge samples.
[2] The first day of each intermittent discharge shall be monitored in any consecutive two-week period at the same time as effluent samples.
[3] The receiving water monitoring data collected by the City of Redding upstream of the discharge may be used for the R-1 receiving water samples. However, results must be submitted as part of the Dischargers Monitoring and Reporting Program.
[4] Frequency may be reduced to Annually upon approval of the Executive Officer after sufficient data is submitted to comply with Provision No. 6.

In conducting the receiving water sampling, a log should be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention should be given to the presence or absence of:

a. Bark or sawdust
b. Floating or suspended matter
c. Oil sheen or slick
d. Discoloration
e. Scum or foam
f. Bottom deposits
g. Aquatic life
h. Upstream flow

Notes on receiving water conditions shall be summarized in the monitoring report.

ABOVEGROUND PETROLEUM STORAGE MONITORING

The Discharger shall visually inspect the aboveground petroleum storage tanks, as required by the facility's Spill Prevention Control and Countermeasure Plan. A report of the inspection shall be submitted stating whether a spill or leakage has been detected. In the event of a petroleum release, a report shall be submitted describing the corrective action that was taken to remediate and dispose of the contaminated area. The results shall be submitted with the monthly monitoring report.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **1st day of the second month** following sample collection. (i.e., the January report is due by 1 March).

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provisions D.6.

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

Ordered by:_____
THOMAS R. PINKOS, Executive Officer

9 July 2004

JFR:

INFORMATION SHEET

ORDER NO. R5-2004-0100
SIERRA PACIFIC INDUSTRIES
ANDERSON DIVISION
SHASTA COUNTY

GENERAL INFORMATION

Sierra Pacific Industries, (hereafter Discharger), submitted a Report of Waste Discharge (RWD), dated 4 November 2002, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES). The Discharger operates a 150 million board foot sawmill complex approximately one mile northwest of the City of Anderson in Section 9, T30N. R4W, MDB&M, as shown on Attachment A. The property (Assessor's Parcel Nos. 050-100-15, 050-110-23,and 050-110-25) is owned by the Discharger. The discharge is presently regulated under waste discharge requirements Order No 98-126, (CA0082066), adopted by the Board on 5 June 1998.

The Discharger's facility consists of sawmill, planer mill, millwork, drying kilns, wood fired co-gen boiler for generation of electric power and steam for kiln heating, unpaved log unloading and scaling yard, rough cut lumber storage area, bark processing and storage area, chip loading area log deck, pole log deck, fabrication shop, truck shop, paved finished lumber storage areas and separate pole handling facilities which include a scaling yard and log deck. The sawmill's primary functions are the processing of Douglass Fir and pine to dimensioned lumber and the production of untreated power poles.

Operation of the plant is as follows: Raw logs are delivered to the log yard where they are scaled or weighed and sent on to the log deck. The logs are de-barked and delivered to the sawmill where they are rough sawn into boards. Boards are kiln dried and planed. Lumber from the planer mill is graded, packaged for sale and taken to the shipping yard. From the shipping yard packaged lumber can be placed on either rail cars, or trucks for final delivery to customers. In addition to lumber the facility produces untreated power poles. Poles are weighed, delivered to the pole yard for scaling and placed in the pole log deck. Poles are then peeled, graded and delivered via rail or trucks to customers. No chemical treatment of the poles takes place on site. Sawdust and chips are stored to the northwest of the boiler. Pine bark is used as fuel and fir bark is used for landscape mulch.

Process wastewater and storm water runoff generated from the sawmill portion of the facility are managed by means of four ponds. The ponds and discharges described below are shown on Attachment B.

> Fire Pond – The 4.5 acre Fire Pond receives boiler feedwater treatment system effluent from the reverse osmosis system, runoff from the chip loading area and pole log deck, ash quench water, cooling tower blowdown, and runoff from adjacent areas. The Fire Pond is hydraulically connected to a smaller 0.75 acre Fire Pond, which discharges to the S.P. Ditch, formerly called the "Old Champion Ditch". (This discharge was

designated as SW-1 in the previous permit). Water from the Fire Pond is also used for dust control.

S.P. Ditch – The S.P. Ditch receives overflow from the smaller Fire Pond, a portion of the recycled water from log deck sprinkling (approximately 15%), and storm water discharge from two other off site industrial facilities, Siskiyou Forest Products and Wheelabrator Hudson. Storm water discharges from the two offsite facilities are covered under the General Industrial Storm Water Permit, Order No. 97-03-DWQ (General Permit No. CAS000001). Excess water in the S.P. Ditch is diverted north into a 25 acre Retention Pond through a 24 inch sub grade steel culvert which passes under the ACID Canal. The S.P. Ditch continues past the point of diversion to the Retention Pond, and flows toward the Sacramento River. Under normal rainfall conditions, the entire flow in the S.P. Ditch discharges to the Retention Pond, but under heavy rainfall conditions water can enter a ditch leading to the Log Deck Recycle Pond. Under very heavy rainfall conditions the S.P. Ditch can also discharge to the Sacramento River, a water of the United States, at Discharge 001, however, this discharge is currently sealed.

Log Deck Recycle Pond (LDRP) - Approximately 85% of the water sprinkled on logs is routed back to a 0.85 acre LDRP. When freeboard in the LDRP is limited its contents can be pumped to the large Retention Pond through a 6 inch steel pipe that is sub grade for approximately 180 feet and aboveground for approximately 210 feet. Transfer from the LDRP is achieved by two 75 horsepower turbine pumps, each rated at 1000 gpm. Boiler blowdown is also discharged to the LDRP and water from the Fire Pond can also be pumped to the LDRP.

Retention Pond – The 25 acre Retention Pond receives all the excess process water and storm water runoff discharged to the S.P. Ditch. There is currently no discharge from the Retention Pond and, as a result of its capacity and percolation, all process and storm water has been retained and no discharges to the Sacramento River have occurred from Discharge 001 for over 20 years. The Discharger in the Report of Waste Discharge indicated that should a discharge to the Sacramento River be necessary, water from the Retention Pond or S.P. Ditch would be discharged to the Sacramento River at Discharge 001. This discharge is currently sealed, however, the Discharger wishes to retain this discharge point if excessive rainfall occurs that cannot be retained by the Retention Pond.

Storm water runoff and roof drainage from the Planer Mill, Stacker, Cooling Shed, and Drying Kilns enters the Sacramento River immediately upstream of the confluence with Spring Gulch Creek as shown on Attachment B (Discharge 002). The drainage area for Discharge 002 also contains finished lumber and temporary wood waste storage. Discharge 002 was designated as SW-2 in the previous Permit.

Discharge 003 is a minor discharge of storm water from the central plant area which enters the Sacramento River via a 12 inch corrugated metal pipe, approximately 100 yards upstream of Discharge 002 as shown on Attachment B, a part of this Order. The Discharger is proposing to eliminate Discharge 003 by the end of the year (2004).

The Discharger dries dimensioned lumber in steam heated drying kilns. Steam is supplied by a diesel fueled fire tube boiler with a capacity of 80,000 lbs of steam per hour. Wastes generated by the operation of the boiler include sodium chloride solution from the regeneration of the ion exchange boiler feedwater treatment system, blowdown resulting from the cleaning of the tubes, and condensate containing additives to prevent scaling. Chemicals used in the operation of the boiler include sodium chloride, sodium hydroxide, water soluble polymer, anhydrous ammonia, potassium hydroxide, sodium metabisulfite, diethyl amino ethanol, cyclohexyl amine, morpholine, sodium nitrite, sodium borate, and sodium hypochlorite. Wastewater containing these chemicals is discharged to the Fire Pond.

The Discharger recently installed a Sapstain Control System at the east end of the planer building. This is a closed loop spray system used to prevent stain, mold, and decay of freshly cut lumber. Lumber is sprayed with a mixture containing a "wood preservative", "lumber brightener", mildew control agent, and moisture controller. These materials are proprietary formulations of Kop-Coat Inc., and do not contain pentachlorophenol or other persistent chlorinated materials. Any excess material, which drips from the lumber, is collected in a catch basin and recycled. Material safety data sheets for all materials used in the process are held by the Discharger.

Domestic wastewater is discharged to one of five septic tank leachfield systems as shown on Attachment B.

Water for the plant is supplied from two on-site wells. Well No. 1 was drilled in 1948 and was completed at 225 feet below ground surface (bgs). Well No. 2a was completed at 340 feet bgs and was drilled in 1997. The Discharger also has a riparian water right for Sacramento River water.

The property is in the Redding Hydrologic Area (No. 508.10), as depicted on interagency hydrologic maps prepared by the Department of Water Resources (DWR) in August 1986. The mean annual rainfall is approximately 38 inches and the 10-year 24-hour storm is 4.6 inches. The pan evaporation rate is approximately 60 inches per year, based on information obtained from DWR Bulletin 73-79 (November 1979).

The Discharger has submitted a storage statement and fee to the State Water Resources Control Board and obtained coverage under the Aboveground Petroleum Storage Act. A Spill Prevention Control and Countermeasure (SPCC) Plan dated January 2004, was submitted as required by the Act, and identifies the petroleum product, quantity, storage location and containment. Products stored include diesel, (20,000 gallons), gasoline, (10,000 gallons), motor oil, (1,000 gallons), hydraulic oil, (1,000 gallons), and waste oil, (800 gallons).

BENEFICIAL USES

The Basin Plan identifies the following beneficial uses for the Sacramento River: municipal and domestic supply; agricultural supply; water contact and noncontact recreation; warm and cold freshwater habitat, migration of aquatic organisms; spawning, reproduction, and/or early development of fish; esthetic enjoyment; groundwater recharge; freshwater replenishment; and preservation and enhancement of fish, wildlife and other aquatic resources. The beneficial uses of groundwater are municipal and domestic supply (MUN), industrial service supply (IND), industrial process supply (PRO) and agricultural supply (AGR).

ANTIDEGRADATION

Resolution No. 68-16 requires the Regional Board, in regulating the discharge of waste, to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies (e.g., quality that exceeds water quality objectives). Resolution No. 68-16 applies to both surface water and groundwater. The Regional Board finds that discharge in compliance with the prohibitions, limitations, specifications, and provisions in this Order is consistent with Resolution No. 68-16. The impact on water quality will be insignificant.

REASONABLE POTENTIAL ANALYSIS

Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. U.S. EPA adopted the *National Toxics Rule* (NTR) on 22 December 1992, which was amended on 4 May 1995 and 9 November 1999, and the *California Toxics Rule* (CTR) on 18 May 2000, which was amended on 13 February 2001. These Rules contain water quality standards applicable to this discharge. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP) on 2 March 2000, which contains policies and procedures for implementation of the NTR and the CTR.

On 8 December 2000, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent and receiving water monitoring to perform a reasonable potential analysis to determine if pollutants are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. The Discharger sampled the effluent from Discharge 002 and receiving water on 7 November 2002 to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticides, metals, asbestos, 2,3,7,8-TCDD dioxin, and sixteen other dioxin congeners. The methodology described in Section 1.3 of the SIP was used to evaluate the Discharger's monitoring data and determine reasonable potential. Cadmium, copper, lead, zinc, and

bis(2-ethylhexyl) phthalate were detected in the effluent from Discharge 002 at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective. The Discharger sampled the Retention Pond on 12 May 2003 and the S.P. Ditch on 3 November 2003 to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticides, metals, asbestos, and dioxin. Priority pollutant substances were not detected in the Retention Pond or S.P. Ditch at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective for a discharge from Discharge 001.

BASIS FOR PERMIT CONDITIONS

The Sacramento River from Shasta Dam to Red Bluff was previously listed as an impaired water body pursuant to Section 303(d) of the Clean Water Act for cadmium, copper, zinc, and unknown toxicity. The listing for metals was mainly a result of long term affects of mining operations at Iron Mountain Mine (located along this reach of river) in addition to other mines upstream of Shasta Dam. Regional Board staff developed a Total Maximum Daily Loads (TMDL) water management strategy for cadmium, copper and zinc loading into the upper Sacramento River. The Board has adopted the technical report, *Upper Sacramento River TMDL for Cadmium, Copper and Zinc*, dated April 2002. There has been a great deal of physical corrective work done at Iron Mountain Mine in the recent years with more work planned in the next few years. An interim TMDL has been developed that focuses on additional copper, cadmium, and zinc removal from Iron Mountain Mine. Five years from development of the interim TMDL a final TMDL, if necessary, will be developed for these metals. The newly adopted 303(d) listing does not include this reach of the river as impaired for these metals.

In determining whether a discharge has the reasonable potential to contribute to an in-stream excursion above a narrative or numerical water quality standard (reasonable potential analysis), the dilution of the effluent in receiving water may be considered where areas of dilution are defined. The available dilution may also be used to calculate protective effluent limitations by applying water quality criteria at the edge of the defined mixing zone. In situations where receiving water flows are substantially greater than effluent flows and there is available assimilative capacity, dilution may be considered in establishing effluent limitations.

Mixing Zone and Assimilative Capacity

The Discharger's consultant conducted a mixing zone study to evaluate attenuation of potential impacts of toxicity and total zinc concentrations from Discharge 002 to the Sacramento River receiving water. The consultant used the CORMIX 3 version 3.01 Hydrodynamic Mixing Zone Model to estimate the size and rate of the mixing under worst-case conditions of low flow and high discharge rate. The 7Q10 flow used for the modeling is 2840 cfs. Peak storm water runoff rates for the 2-year, 24-hour event (4,250 gpm), 5-year, 24-hour event (5100 gpm), and the 25-year, 24-hour storm event (6900 gpm) were estimated for modeling different storm intensities and volumes. The mixing zone modeling results indicated there is rapid initial mixing in the near field zone of initial

dilution, quickly reducing potential toxicity effects by reducing the discharge strength by 1:3 or approximately 25 percent of original strength within a few seconds. Based on the modeling results, a mixing zone approximately 5 meters wide by 10 meters long within the receiving water would achieve dilution of the effluent to 25 percent of its initial concentration at the outer edge. The far-field mixing zone produces a dilution of 1:40 or approximately 2.5 percent of original strength approximately 140 to 170 meters downstream, with a plume ranging from 20 to 30 meters. Based on the mixing zone study the Discharger is requesting dilution credits for both acute toxicity and zinc concentrations.

Based on the dilution study and toxicity results, the Discharger determined a dilution of 1:10 waste to receiving water should consistently yield a survival rate above 90 percent. The Discharger is requesting that the Regional Board grant a dilution credit associated with a zone of initial dilution resulting in a 1:10 dilution level for acute toxicity.

Based on a total zinc concentration of 623 ug/L the Discharger determined a 1:40 dilution is required to meet the receiving water objective at the edge of the mixing zone. Therefore the Discharger is requesting that the Regional Board grant a dilution credit for zinc associated with a mixing zone resulting in a 1:40 dilution level.

The Discharger's facility is one of four facilities that Discharge to the Sacramento River between Redding and Anderson. The Regional Board on 5 September 2003 adopted Waste Discharge Requirements, Order No. R5-2003-0130 for the City of Redding (City), Clear Creek Wastewater Treatment Plant, located approximately two miles above the Dischargers property. The Regional Board granted the City a dilution credit for copper and zinc, however the Regional Board only allotted the City 20 percent of the assimilative capacity of the Sacramento River in establishing effluent limits. This allows for the four dischargers in this reach of the river (City Clear Creek WWTP, Anderson WWTP, City Stillwater WWTP, and the Dischargers facility). to share the assimilative capacity (20 percent each) and gives a 20 percent allowance for municipal storm water discharges and other unknown discharges. Therefore, in this Order the Regional Board is only allotting the Discharger 20 percent of the assimilative capacity.

Metals Translators

Water quality criteria and objectives for metals in the CTR and Basin Plan are presented as dissolved concentrations and for cadmium, copper, and zinc and are hardness dependent. Based on receiving water information available for the Sacramento River for the past three years, the minimum hardness during the period of discharge from the Dischargers facility is 44 mg/L. Lacking site-specific data, the USEPA recommends conversion factors (translators) to translate dissolved concentrations to total concentrations. The USEPA conversion factor for copper in freshwater is 0.960 for both the acute and the chronic criteria. The USEPA conversion factor for zinc in freshwater is 0.978 for the acute and 0.986 for the chronic criteria. The Regional Board in adopting Order No. R5-2003-0130 for Clear Creek WWTP used site-specific translators for copper and zinc for this reach of the Sacramento River based on receiving water data provided by the City. Using this data it was determined that the EPA standard conversion factors (translators) may not be

representative of the dissolved fraction of copper and zinc in this reach of the Sacramento River during high flow, high turbidity events that occur during the winter months. The SIP contains guidance on the development of translators. The median and 90th percentile values are used for the chronic and acute translators in accordance with Section 1.4.1 of the SIP. The following translators were used to determine the applicable water quality criteria for copper and zinc:

	Chronic	Acute
Copper	0.666	0.711
Zinc	0.723	0.780

The USEPA conversion factors for cadmium and lead were used to determine applicable water quality criteria for these metals. The conversion factors for cadmium and lead are hardness dependent and are calculated for a hardness of 44 mg/L using the following equations:

Cadmium:
$CF_{Chronic}$ = 1.101672 - [(ln {hardness})(0.041838)], at 44 mg/L hardness = 0.9433
CF_{Acute} = 1.136672 - [(ln {hardness})(0.041838)], at 44 mg/L hardness = 0.9783

Lead:
$CF_{Chronic}$ = 1.46203 - [(ln {hardness})(0.145712)], at 44 mg/L hardness = 0.9106
CF_{Acute} = 1.46203 - [(ln {hardness})(0.145712)], at 44 mg/L hardness = 0.9106

Effluent Limitations

Copper:

Based on analytical results of effluent samples collected by the Discharger and Regional Board staff and the procedures presented in the SIP, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for copper; therefore, effluent limitations for copper are included in the Order. Effluent and receiving water concentrations are summarized in Table 1.

Table 1. Copper Concentrations (µg/L)

	SPI Discharge 002		Sacramento River at Caldwell Park[1]	
	Total Recoverable	Dissolved	Total Recoverable	Dissolved
Minimum	8.0	--	0.91	0.71
Maximum	37.0	--	7.28	4.91
Average	24.3	--	3.26	2.18
No. of Samples	3	--	17	17
Standard Deviation	14.84	--	--	--
Coefficient of Variation	0.610	--	--	--

[1] City of Redding Receiving Water Monitoring Data

Copper toxicity is hardness dependent. Table 2 presents the hardness values monitored in the Sacramento River at Caldwell Park during the period of discharge, upstream of the Clear Creek WWTP by the City (Order No. R5-2003-0130). Table 2 also presents the CTR chronic criteria and Basin Plan objectives associated with the given hardness. The dissolved concentration of copper in the river did not exceed the CTR chronic criteria in 2000 through 2002. When the river dissolved copper concentration was higher, the hardness was also higher, resulting in a higher criterion. Based on receiving water information available for the Sacramento River for the past three years, the minimum hardness during the period of discharge from the Dischargers facility is 44 mg/L (discarding the high and low measurements). Effluent limitations for copper are determined on the basis of the Effluent Concentration Allowance which is calculated using the formula ECA = C + D (C-B) where D = Dilution Credit, C = Applicable Water Quality Criterion, and B = Background Concentration. The term (C-B) is referred to as the "Assimilative Capacity". For copper, the value of the Assimilative Capacity has been determined by calculating (C-B) for each of 17, paired sets of dissolved concentration/hardness data for copper in the Sacramento River during the period of discharge. The B used in the calculations is the dissolved concentration of copper in the river and the C is the CTR chronic dissolved criterion calculated on the basis of the hardness for that particular sample. The resulting 17 values for assimilative capacity were compared and the lowest chosen for calculation of the effluent limit. For copper the minimum assimilative capacities were found to be 0.548 µg/L (CTR Chronic dissolved) and 2.09, (Basin Plan Dissolved). For calculation of effluent limits the difference between the river dissolved concentrations and calculated criterion for the measured hardness was evaluated and the minimum value was used for "C-B" in the ECA equation in step No. 2 of SIP section 1.4.B. This "C-B" value represents the critical condition assimilative capacity in this reach of the river. A safety factor of five (5) was applied to the "C-B" value such that 20 percent of the assimilative capacity of the river is used to calculate an effluent limit. This allows for the four dischargers in this reach of the river to share the assimilative capacity (20 percent each) and gives a 20 percent allowance for municipal storm water discharges and other unknown discharges.

Table 2 – Receiving Water Criteria/Objectives for Copper

		CTR Chronic Criteria (µg/L)		Basin Plan Objective (µg/L)	
	Hardness (mg/L)	Total Recoverable[a]	Dissolved	Total Recoverable[a]	Dissolved
Minimum	32	5.08	3.38	6.46	4.59
Maximum	87	11.91	7.95	15.94	11.3
Average	49	7.27	4.84	9.46	6.73
No. of Samples	17	17	17	17	17

[a] Using site specific translator

Following are the steps, as presented in section 1.4.B of the SIP, to calculate the effluent limits for copper:

Step 1: Applicable water quality criteria (C)

CTR criteria are a function of receiving water hardness and are given by the following equation for criterion continuous concentration (CCC):

CCC (chronic) = $e^{(0.8545*\ln(\text{hardness})-1.702)}$ * (0.960) as dissolved fraction

The CTR criterion maximum concentration (CMC) does not apply in this reach of the Sacramento River. Using the river hardness data for the past three years and discarding the high and low readings, the minimum hardness of 44 mg/L gives the following criterion:

CCC = 4.44 µg/L

The basin Plan objective for copper is hardness dependant also and is given by:

Basin Plan = $e^{(0.905*\ln(\text{hardness})-1.612)}$ as dissolved fraction

Basin Plan = 6.13 µg/L

Applying the translators developed by the Discharger of 0.666 for chronic and 0.711 for acute:

CCC = 6.67 µg/L

Basin Plan = 8.62 µg/L

Step 2: Calculate the ECA

ECA = Effluent Concentration Allowance = C + D*(C-B)

Where D = dilution credit =40 and B = background

Minimum C-B = 0.548 dissolved for CCC; 0.820 µg/L total / 5 SF = 0.16 µg/L

= 2.10 dissolved for Basin Plan; 2.95 µg/L total / 5 SF = 0.59 µg/L

ECA_{CCC} = 6.67 + 40 * (0.16) = 13.2 µg/L

ECA_{BP} = 8.62 + 40 * (0.59) = 32.2

Step 3: Determine long-term average (LTA)

C_V = 0.6; ECA $multiplier_{chronic99}$ = 0.527

ECA $multiplier_{acute99}$ = 0.321

LTA_{CCC} = 6.96 µg/L

Using acute multiplier for Basin Plan objective; LTA_{BP} = 10.34 µg/L

Step 4: Select lowest LTA

LTA_{BP} = 6.96 µg/L

Step 5: Calculate water quality based effluent limits

C_V = 0.6; AMEL $multiplier_{95}$ = 1.55 (n=4 for less than 4 samples per month)

MDEL $multiplier_{99}$ = 3.11

Average Monthly Effluent Limit for Copper = 10.8 µg/L

Maximum Daily Effluent Limit for Copper = 21.6 µg/L

Based on the results of effluent monitoring, the Discharger cannot currently comply with these new effluent limitations. The effluent limits for copper are based on previously existing Basin Plan water quality objectives and therefore are fully applicable upon adoption of this Order by the Regional Board. A time schedule for compliance with these effluent limits is not provided by this Order. However, the Regional Board may adopt other Orders (Cease and Desist Order) allowing the Discharger a period of time to fully comply with these effluent limits.

Zinc:

Based on analytical results of effluent samples collected by the Discharger and Regional Board staff and the procedures presented in the SIP, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for zinc; therefore, effluent limitations for zinc are included in the Order. Effluent and receiving water concentrations are summarized in Table 3.

Table 3. Zinc Concentrations (µg/L)

	SPI Discharge 002		Sacramento River at Caldwell Park[1]	
	Total Recoverable	Dissolved	Total Recoverable	Dissolved
Minimum	89	--	1.69	1.12
Maximum	707	--	10.85	9.19
Average	279	--	5.4	3.92
No. of Samples	18	--	17	17
Standard Deviation	170	--	--	--
Coefficient of Variation	0.61	--	--	--

[1] City of Redding Receiving Water Monitoring Data

Zinc toxicity is hardness dependent. Table 4 presents the hardness values in the Sacramento River at Caldwell Park, upstream of the Clear Creek WWTP. Table 4 also presents the CTR chronic criteria and Basin Plan objectives associated with the given hardness. The dissolved concentration of zinc in the river did not exceed the Basin Plan objective in 1998 through 2002. Based on receiving water information available for the Sacramento River for the past three years, the minimum hardness during the period of discharge from the Dischargers facility is 44 mg/L (discarding the high and low measurements). Effluent limitations for zinc are determined as were done for copper on the basis of the Effluent Concentration Allowance which is calculated using the formula ECA = C + D (C-B). For zinc, the value of the Assimilative Capacity has been determined by calculating (C-B) for each of 17, paired sets of dissolved concentration/hardness data for zinc in the Sacramento River during the period of discharge. The B used in the calculations is the

dissolved concentration of zinc in the river and the C is the CTR chronic dissolved criterion calculated on the basis of the hardness for that particular sample. The resulting 17 values for assimilative capacity were compared and the lowest chosen for calculation of the effluent limit. For zinc the values were 41.2 µg/L (CTR Chronic dissolved) and 9.54 µg/L, (Basin Plan Dissolved). As was done for copper, for calculation of zinc effluent limits the difference between the Sacramento River dissolved concentrations and calculated criterion for the measured hardness was evaluated and the minimum value was used for "C-B" in the ECA equation in step No. 2 of SIP section 1.4.B. And as was done for copper, a safety factor of 5 will be applied to the "C-B" value such that only 20 percent of the assimilative capacity of the river is used to calculate an effluent limit.

Table-4 – Receiving Water Criteria/Objectives for Zinc

		CTR Chronic Criteria (µg/L)		Basin Plan Objective (µg/L)	
	Hardness (mg/L)	Total Recoverable[a]	Dissolved	Total Recoverable[a]	Dissolved
Minimum	32	81.5	45.0	17.1	13.3
Maximum	87	145	105	39.0	30.4
Average	49	88.9	64.2	24.1	18.8
No. of Samples	17	17	17	17	17

[a] Using site specific translator

The Basin Plan objective for dissolved zinc was not exceeded in the Sacramento River samples analyzed over the period from January 1998 to August 2002. Following are the steps, as presented in section 1.4.B of the SIP, to calculate the effluent limits for zinc:

Step 1: Applicable water quality criteria (C)

CTR criteria are a function of receiving water hardness and are given by the following equation:
CCC (chronic) = $e^{(0.8473*\ln(\text{hardness})+0.884)}$ * (0.986) as dissolved fraction

The CTR CMC criterion does not apply in this reach of the River. Using the river hardness data for the past three years and discarding the high and low readings, the minimum hardness of 44 mg/L gives the following criteria:

CCC = 58.9 µg/L

The basin Plan objective for zinc is hardness dependant also and is given by:

Basin Plan = $e^{(0.830*\ln(\text{hardness})-0.289)}$ as dissolved fraction

Basin Plan = 17.3 µg/L

Applying the site specific translators of 0.723 for chronic, and 0.780 for acute:

CCC = 81.5 µg/L

Basin Plan = 22.2 µg/L

Step 2: Calculate the ECA

ECA = Effluent Concentration Allowance = C + D*(C-B)

Where D = dilution credit =40 and B = background

Minimum C-B = 41.24 dissolved for CCC; 57.0 µg/L total / 5 SF = 11.4 µg/L

= 9.54 dissolved for Basin Plan; 12.2 µg/L total / 5 SF = 2.4 µg/L

ECA_{CCC} = 81.5 + 40 * (11.4) = 538 µg/L

ECA_{BP} = 22.2 + 40 * (2.4) = 120 µg/L

Step 3: Determine long-term average (LTA)

C_V = 0.61; ECA $multiplier_{chronic99}$ = 0.522

ECA $multiplier_{acute99}$ = 0.317

LTA_{CCC} = 280.8 µg/L

Using acute multiplier for Basin Plan objective; LTA_{BP} = 38.04 µg/L

Step 4: Select lowest LTA

LTA_{BP} = 38.04 µg/L

Step 5: Calculate water quality based effluent limits

C_V = 0.61; AMEL $multiplier_{95}$ = 1.56 (n=4 for less than 4 samples per month)

MDEL $multiplier_{99}$ = 3.16

Average Monthly Effluent Limit for Zinc = 59.3 µg/L

Maximum Daily Effluent Limit for Zinc = 120.2 µg/L

Based on the results of effluent monitoring, the Discharger cannot currently comply with these new effluent limitations. The effluent limits for zinc are based on previously existing Basin Plan water quality objectives and therefore are fully applicable upon adoption of this Order by the Regional Board. A time schedule for compliance with these effluent limits is not provided by this Order. However, the Regional Board may adopt other Orders allowing the Discharger a period of time to fully comply with these effluent limits.

Cadmium:

Based on analytical results of effluent samples collected by the Discharger and Regional Board staff and the procedures presented in the SIP, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for cadmium; therefore, effluent limitations for cadmium are included in the Order. Effluent and receiving water concentrations are summarized in Table 5.

Table 5 Cadmium Concentrations (µg/L)

	SPI Discharge 002		Sacramento River at Caldwell Park	
	Total Recoverable	Dissolved	Total Recoverable	Dissolved
Minimum	0.56	--	0.015	0.012
Maximum	3.1	--	0.086	0.075
Average	1.55	--	0.042	0.031
No. of Samples	3	--	16	16
Standard Deviation	1.357	--	--	--
Coefficient of Variation	0.876	--	--	--

Cadmium toxicity is hardness dependent. The dissolved concentration of cadmium in the river did not exceed the CTR chronic criteria in 2000 through 2002. When the river dissolved cadmium concentration was higher, the hardness was also higher, resulting in a higher criterion. Based on receiving water information available for the Sacramento River for the past three years, the minimum hardness during the period of discharge from the Dischargers facility is 44 mg/L. As was done for copper and zinc for calculation of cadmium effluent limits the difference between the river dissolved concentrations and calculated criterion for the measured hardness was evaluated and the minimum value was used for "C-B" in the ECA equation in step No. 2 of SIP section 1.4.B. And as was done for copper and zinc, a safety factor of 5 will be applied to the "C-B" value such that only 20 percent of the assimilative capacity of the river is used to calculate an effluent limit.

Step 1: Applicable water quality criteria (C)

CTR criteria are a function of receiving water hardness and are given by the following equation for criterion continuous concentration (CCC):
CCC (chronic) = $(e^{(0.7852*\ln(\text{hardness})-2.715)})$ (1.101672- (ln hardness)(0.041838) as dissolved fraction

The CTR criterion maximum concentration (CMC) does not apply in this reach of the Sacramento River. Using the river hardness data for the past three years and discarding the high and low readings, the minimum hardness of 44 mg/L gives the following criterion:

CCC = 1.219 µg/L

The basin Plan objective for cadmium is hardness dependant also and is given by:

Basin Plan = $e^{(1.160*\ln(\text{hardness})-5.777)}$ as dissolved fraction

Basin Plan = 0.245 µg/L

Applying the USEPA translators of 0.9433 for chronic and 0.9783 for acute:

CCC = 1.292 µg/L

Basin Plan = 0.245 µg/L

Step 2: Calculate the ECA

ECA = Effluent Concentration Allowance = C + D*(C-B)(0.2)

Where D = dilution credit = 40

B = background = 0.086

C = Criteria = 0.245 and 1.292

ECA_{CCC} = 1.292 + 0.241 = 1.533 µg/L

ECA_{BP} = 0.245 + 0.032 = 0.277 µg/L

Step 3: Determine long-term average (LTA)

C_V = 0.6; ECA $multiplier_{chronic99}$ = 0.527

ECA $multiplier_{acute99}$ = 0.321

LTA_{CCC} = .808 µg/L

Using acute multiplier for Basin Plan objective; LTA_{BP} = 0.089 µg/L

Step 4: Select lowest LTA

LTA_{BP} = 0.089 µg/L

Step 5: Calculate water quality based effluent limits

C_V = 0.6; AMEL $multiplier_{95}$ = 1.55 (n=4 for less than 4 samples per month)

MDEL $multiplier_{99}$ = 3.11

Average Monthly Effluent Limit for Cadmium = 0.138 µg/L

Maximum Daily Effluent Limit for Cadmium = 0.277 µg/L

Based on the results of effluent monitoring, the Discharger cannot currently comply with these new effluent limitations. The effluent limits for cadmium are based on previously existing Basin Plan water quality objectives and therefore are fully applicable upon adoption of this Order by the Regional Board. A time schedule for compliance with these effluent limits is not provided by this Order. However, the Regional Board may adopt other Orders allowing the Discharger a period of time to fully comply with these effluent limits.

Lead:

Based on analytical results of effluent samples collected by the Discharger and the procedures presented in the SIP, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for lead; therefore, effluent limitations for lead are included in the Order. Effluent and receiving water concentrations are summarized in Table 6.

Table 6 Lead Concentrations (µg/L)

	Discharge 002, (SW-2)		Sacramento River at Caldwell Park	
	Total Recoverable	Dissolved	Total Recoverable	Dissolved
Minimum	3.0	--	0.015	0.0035
Maximum	11.1	--	0.505	0.125
Average	8.03	--	0.142	0.035
No. of Samples	3	--	19	19
Standard Deviation	4.39	--	--	--
Coefficient of Variation	0.547	--	--	--

Step 1: Applicable water quality criteria (C)

CTR criteria are a function of receiving water hardness and are given by the following equations for criterion continuous concentration (CCC), and criteria maximum concentration:

CCC (chronic) = $(e^{(1.273*\ln(\text{hardness})-4.705)})$ (1.46203- (ln hardness)(0.145712) as dissolved fraction
And for Criteria Maximum Concentration (CMC):

CMC (acute) = $(e^{(1.273*\ln(\text{hardness})-1.460)})$ (1.46203- (ln hardness)(0.145712) as dissolved fraction

Using the river hardness data for the past three years and discarding the high and low readings, the minimum hardness of 44 mg/L gives the following criterion:

CCC = 1.019 µg/L

CMC = 26.144 µg/L

Applying the USEPA correction factor which is the same for both chronic and acute and is 0.9106 gives:

CCC = 1.12 µg/L

CMC = 28.71 µg/L

Step 2: Calculate the ECA

ECA = Effluent Concentration Allowance = C + D*(C-B)(0.2)

Where D = dilution credit = 40

B = background = 0.505

C = Criteria = 1.119 and 28.711

ECA_{CCC} = 1.119 + 4.912 = 6.031 µg/L

ECA_{CMC} = 28.711 + 225.648 = 254.359 µg/L

Step 3: Determine long-term average (LTA)

C_V = 0.6; ECA $multiplier_{chronic99}$ = 0.527

ECA $multiplier_{acute99}$ = 0.321

LTA_{CCC} = 3.18 µg/L

LTA_{CMC} = 81.65 µg/L

Step 4: Select lowest LTA

LTA_{CMC} = 3.18 µg/L

Step 5: Calculate water quality based effluent limits

C_V = 0.6; AMEL $multiplier_{95}$ = 1.55 (n=4 for less than 4 samples per month)

MDEL $multiplier_{99}$ = 3.11

Average Monthly Effluent Limit for Lead = 4.93 µg/L

Maximum Daily Effluent Limit for Lead = 9.89 µg/L

The Discharger cannot currently meet these limitations for discharge to the Sacramento River. Section 2.1 of the SIP provides that: "*Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit*." As the average monthly and maximum daily effluent limitations for lead are new requirements in this Order, the Discharger has not been afforded an opportunity to submit the compliance schedule justification required by the SIP (Section 2.1). This Order requires the Discharger to provide this information. Implementation of the new water quality based effluent limitations for lead become effective **60 days** after adoption of this Order if a compliance schedule justification is not completed and submitted by the Discharger to the Board. If a compliance schedule justification is completed and submitted by this date, the final water quality based effluent limitations for lead become effective **60 months** after adoption of this Order, and this Order includes a Provision outlining studies and a time schedule for compliance with the new final effluent limitations for lead.

The SIP, Section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Board shall establish interim limitations and dates for their achievement in the NPDES permit. The interim limitations must: be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year; and be included in the Provisions. The interim limitations in this Order are based on the current performance. In developing the interim limitation, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean. Where actual sampling shows an exceedance of the proposed 3.3-standard deviation interim limit, the maximum detected concentration is established as the interim limitation. When there are less than ten sampling data points available, the *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective.

In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed sampling point to obtain the daily maximum interim limitation. The Regional Board finds that the Discharger can undertake source control and other measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with NTR- and CTR-based Effluent Limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final Effluent Limitations, but in compliance with the interim Effluent Limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis.

Calculation of Interim Effluent Limits for Lead

In accordance with the SIP, Sections 2.2.1 and 2.2.2, a numeric interim limitation for lead has been established in this Order based upon current facility performance. Lead was detected in effluent from the facility at a total recoverable concentration of 3.0 to 11.1 µg/L (three samples). As described above, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for lead is 34.5 µg/L (total recoverable). The long-term average objective is to maintain the current level of pollutant concentrations or better. Therefore, the monthly average interim limit for lead cannot exceed the maximum detected concentration, which is 11.1 µg/L (total recoverable). This Order includes new monitoring requirements for lead. The Order may be reopened to include a new interim effluent limitation for lead after additional effluent data have been collected.

Bis-2-ethylhexylphthalate:

A human health criterion for bis(2-ethylhexyl) phthalate of 1.8 µg/L, for consumption of both water and organisms, was established in the NTR. Based on analytical results of a single effluent sample collected by the Discharger, the MEC for bis(2-ethylhexyl) phthalate was reported as 5.0 µg/L. This MEC exceeds the human health criterion for bis(2-ethylhexyl) phthalate established in the NTR. Section 1.3 of the SIP requires water quality-based effluent limitations when the MEC or observed maximum background concentration (B) of a priority pollutant exceeds an appropriate pollutant criterion. Based on limited data, background concentrations in the Sacramento River at Caldwell Park are less than the 1 µg/L detection limit.

Concerning calculation of final effluent limitations for bis(2-ethylhexyl) phthalate for discharge to the Sacramento River, the SIP provides in Section 1.4 that "*If data are insufficient to calculate the effluent limitation, the RWQCB shall establish interim requirements in accordance with Section 2.2.2*." There is insufficient effluent and receiving water data for proper calculation of final effluent limitations. Therefore, this Order includes a time schedule for the Discharger to collect sufficient information for the calculation of final effluent limitations for discharge to the Sacramento River. When sufficient data are collected, it is the intent of the Regional Board to include final water quality-based effluent limitations for bis(2-ethylhexyl) phthalate as enforceable

limitations. If changes in sampling and/or analytical procedures and equipment indicate that bis(2-ethylhexyl) phthalate is not truly present in the effluent, then the Regional Board may reopen this Order and remove the interim effluent limits for bis(2-ethylhexyl) phthalate.

Calculation of Interim Effluent Limit for Bis(2-ethylhexyl) phthalate

In accordance with the SIP, Sections 2.2.1 and 2.2.2, for discharge to the Sacramento River, a numeric interim limitation for bis(2-ethylhexyl) phthalate has been established in this Order based upon current performance. Bis(2-ethylhexyl) phthalate was detected at 5.0 µg/L in a single effluent sample. As described above for lead, the daily maximum interim limit is established as 3.11 times the maximum observed value. Therefore, the daily maximum interim limit for bis(2-ethylhexyl) phthalate is 15.6 µg/L (total recoverable). The Order may be reopened to include a new interim or final effluent limitation for bis(2-ethylhexyl) phthalate after additional effluent data have been collected.

Effluent Limitations for Toxicity

The Basin Plan contains a narrative standard for toxicity, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, or aquatic life". The Discharger has had episodic violations of the acute toxicity limit in undiluted effluent for Discharge 002, (formerly SW-2), since the early 1990s. In addition the concentration of zinc in the discharge from Discharge 002 has been high, particularly during rainfall after a prolonged dry spell. Zinc concentrations have been measured as high as 1,150 ug/L total zinc. The high zinc levels and toxicity are correlated but the Discharger's consultant has determined that there are additional correlative factors including concentration of wood resin acids. The Discharger conducted a Toxicity Reduction Evaluation for zinc and has implemented numerous source control measures in an effort to reduce the toxicity. These measures have reduced the zinc concentrations in the discharge, however, periodic toxicity violations have continued and zinc concentrations have remained high. Samples collected from 2001 to 2003 have contained varying concentrations of total zinc ranging from 149 to 707 ug/L.

Based on the dilution study and toxicity results, the Discharger determined a dilution of 1:10 effluent to receiving water should consistently yield a survival rate above 90 percent. The Discharger is requesting that the Regional Board grant a dilution credit associated with a zone of initial dilution resulting in a 1:10 dilution level for acute toxicity. This Order establishes an effluent limit for acute toxicity based on the 1:10 dilution of effluent to receiving water based on the dilution study and toxicity results provided by the Discharger. The SIP provides in Section 1.4.2.2 that a mixing zone shall not cause acutely toxic conditions defined as lethality that occurs to mobile aquatic organisms that move or drift through the mixing zone. Based on the mixing zone study the acute criteria would be met within a few seconds at the edge of the zone. Exposure to acutely toxic conditions for organisms drifting or swimming through the mixing zone would only be a few seconds. In addition, since discharges from the facility are storm dependent and not continuous, organisms would not be exposed on a continuous basis. This Order includes acute toxicity monitoring requiring a 10 to 1 dilution with upstream Sacramento River water to undiluted effluent

to determine compliance with the effluent limitation. As source control or other measures are implemented to comply with final effluent limits for metals, a corresponding reduction in toxicity may result in the undiluted effluent. Acute toxicity of undiluted effluent is included in the monitoring program.

The existing permit for the Facility has an effluent limit requiring at minimum 70 percent survival, with 90 percent survival over three bioassay tests. This requirement was established before the mixing zone study was conducted therefore the mixing zone information was not available at the time of issuance of the existing permit. Consequently, the toxicity limitation in this permit is consistent with federal and State antidegradation and antibacksliding requirements.

Effluent Limitations for Other Constituents and Parameters

The Discharger operates a “wet deck” log storage operation and a “sawmills and planing mills” operation, therefore, effluent limitations established in Timber Products Processing Point Source Category Code of Federal Regulations (40 CFR Part 429) are applicable to the discharge. Specifically, Subpart I (Wet Storage Subcategory) and Subpart K (Sawmills and Planing Mills Subcategory) apply. Effluent guidelines for wet log storage are based on "best practicable control technology currently available". The effluent limitation states that there shall be no debris discharged and the pH shall be within the range of 6.0 to 9.0. CFR Part 429.11(i) defines debris as woody material such as bark, twigs, branches, heartwood or sapwood that will not pass through a one inch diameter round opening. It is the intent of this permit to prohibit the discharge of sawdust to receiving waters. However, it is impractical to eliminate all sawdust discharges beyond that which would occur with implementation of Best Management Practices (BMPs). Numeric effluent limits were not established for sawdust, as a numeric limit is infeasible. Instead, per 40 CFR 122.44 (k), a discharge specification is established to require implementation and maintenance of BMPs to reduce sawdust discharges to the maximum extent practicable. CFR Parts 429.20, 429.124 and 429.134 contain a narrative effluent guideline for the sawmill operations, which state that there shall be no discharge of process wastewater pollutants into navigable waters. Effluent limits for pH, settleable matter, and suspended matter are included in this Order.

pH Limit:
This Order requires the effluent pH to remain between 6.0 and 9.0 units. These limits are consistent with the limits in the previous Order and Timber Products Processing Point Source Category, Wet Storage Subcategory (40 CFR Part 429, Subpart I)

Settleable Solids:
The Basin Plan states that waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses. The Order contains monthly average and daily maximum settleable solids limits of 0.1 mL/L and 0.2 mL/L respectively. The settleable solids limits in this permit are based on what can reasonably be achieved in well-designed, constructed and operated pollutant control systems. These limits are consistent with the previous Order.

Establishment of Mass-Based Effluent Limits and Effluent Flow Limit

This Order establishes concentration-based effluent limits, as described above. Mass-based effluent limits are also required to be established, however it is not possible to establish the mass-based effluent limits at this time due to lack of effluent flow information. This Order requires the Discharger to submit a report prepared by a professional civil engineer registered in the State of California, which shall include a design for a flow measurement device for Discharge 002. The device shall include provision for recording of instantaneous and total daily flows. Upon review of sufficient flow information, the Regional Board may reopen this Order and establish mass-based effluent limits and an effluent flow limit.

Compliance Time Schedules

The effluent limits for cadmium, copper, and zinc are based on previously existing Basin Plan water quality objectives and therefore are fully applicable upon adoption of this Order by the Regional Board. A time schedule for compliance with these effluent limits is not provided by this Order. However, the Regional Board may adopt other Orders allowing the Discharger a period of time to fully comply with these effluent limits. A Cease and Desist Order with a time schedule for compliance may be considered by the Regional Board.

The effluent limits for lead are based on more recently adopted water quality criteria contained in the National Toxics Rule and California Toxics Rule. This Order allows a time schedule for full compliance with these effluent limits. Interim effluent limits are included in this Order for lead and are applicable upon adoption of this Order and during the period of the time schedule, provided the Discharger submits a written justification that the compliance time schedule is needed. The justification must be received by the Regional Board within **60 days** of adoption of this Order. Within **12 months** of adoption of this Order, the Discharger shall either (1) submit a workplan for reducing the concentrations of pollutants in the discharge to levels that will comply with the final effluent limits, or (2) submit a workplan(s) for studies that will prove that the final effluent limits should be modified based on site-specific conditions. The Discharger must take such actions necessary to comply with the final effluent limits within 5 years of adoption of this Order, at which time the final effluent limits will become fully applicable. The Regional Board may reopen this Order and modify the final effluent limits if appropriate, based on results of studies the Discharger may conduct.

Permit Reopener

If after a review of any monitoring results, it is determined that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above water quality objectives, this Order may be reopened and limitations based on those objectives included. Additionally, if pollutants are detected in discharges from the Discharger's facility, but insufficient information exists to establish an effluent limit or determine if an effluent limit is necessary, then additional monitoring will be required to provide sufficient information.

RECEIVING WATER LIMITATIONS

The receiving water limitations contained in this Order are based on water quality objectives contained in the Basin Plan for the Sacramento River.

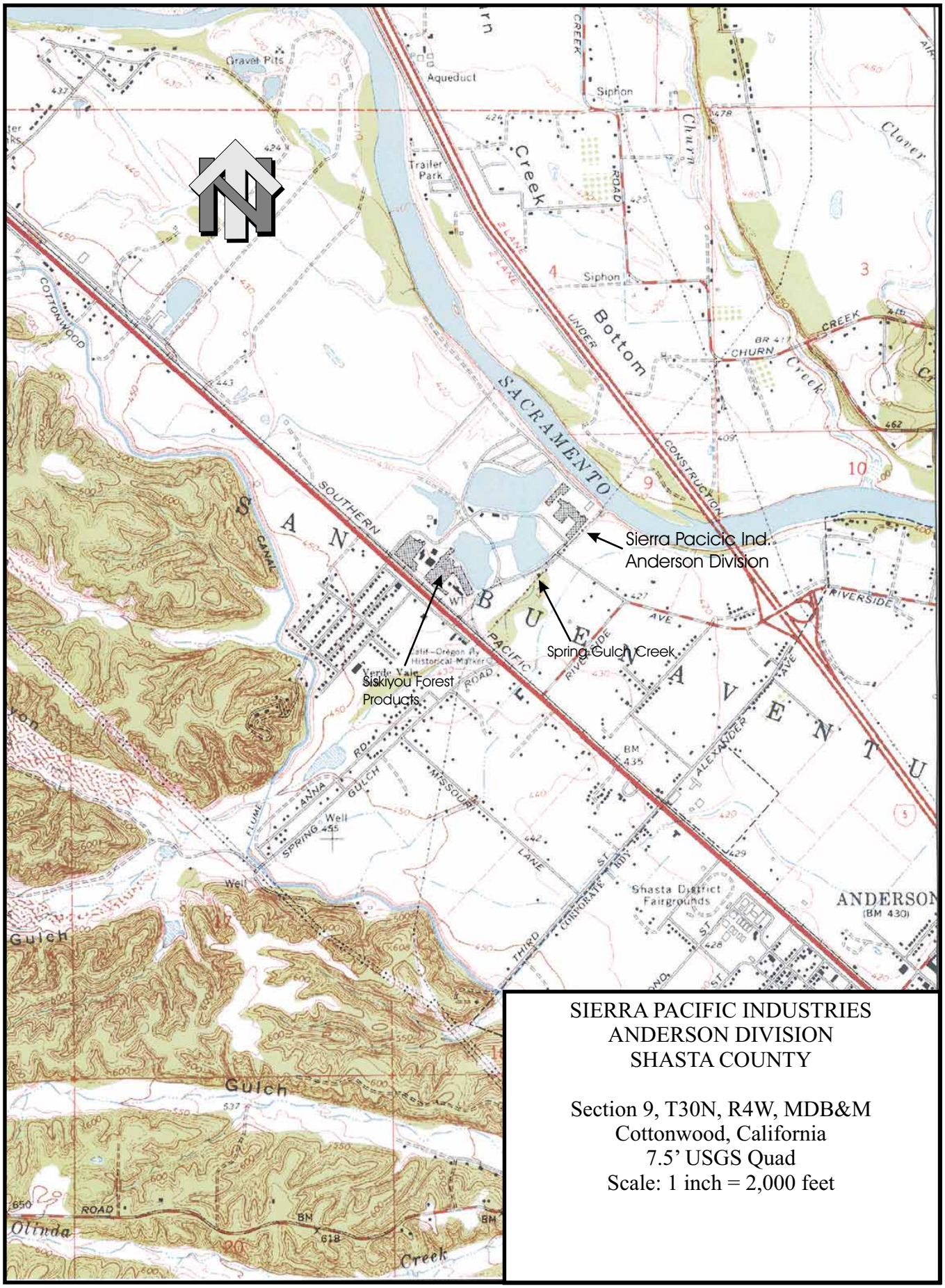
PROCEDURES ON REACHING FINAL DECISION ON DRAFT PERMIT

The tentative waste discharge requirements have been sent to the Discharger and interested parties for review (at least 30 days) prior to formal presentation to the Regional Board. Any contested items on the permit will be heard and considered for change prior to formal adoption at the Board Meeting.

FOR FURTHER INFORMATION

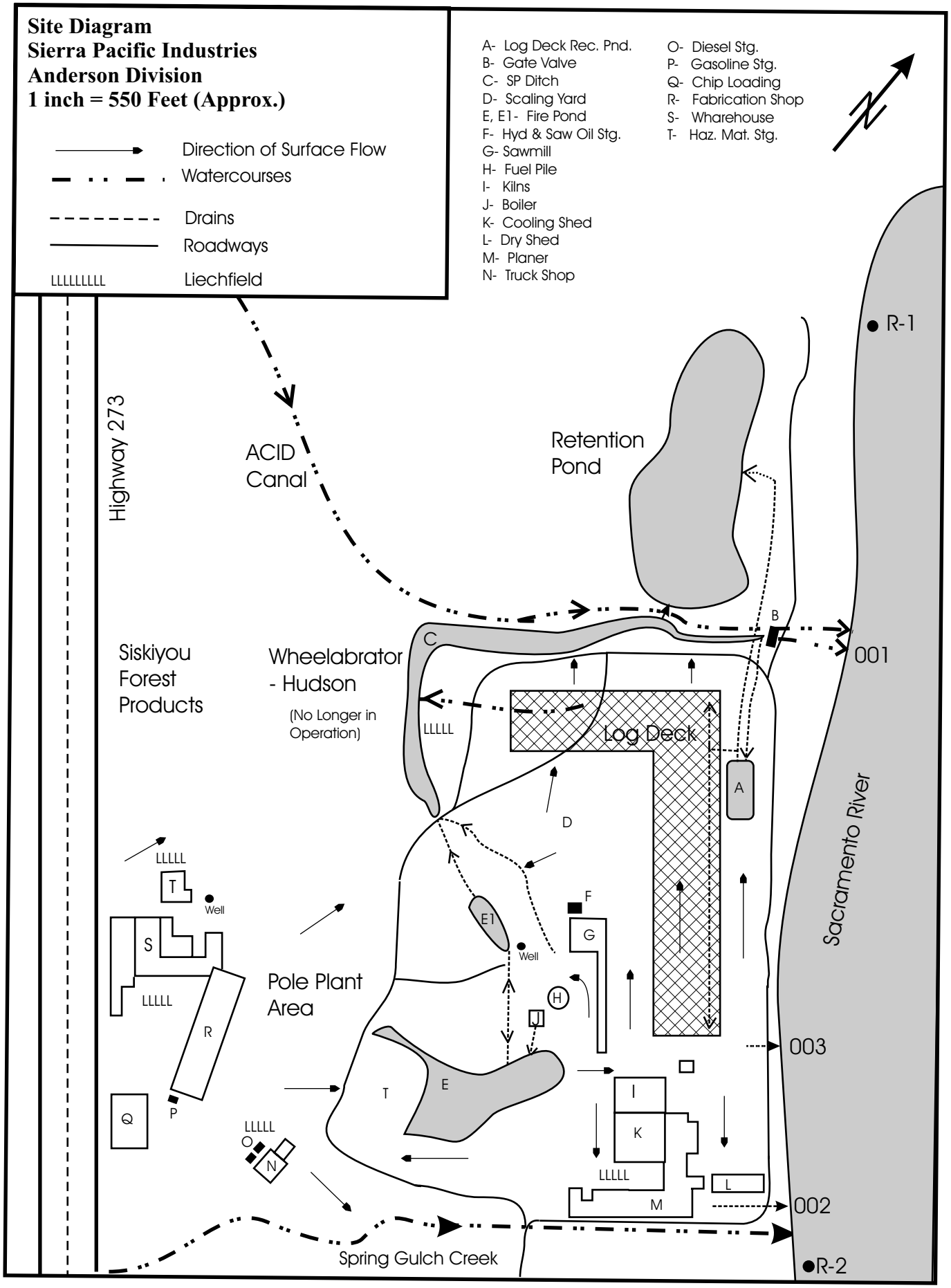
For further information or questions regarding the NPDES permit, contact Jim Rohrbach at the Regional Water Quality Control Board in Redding at (530) 224-4859.

JFR: 9 July 2004



SIERRA PACIFIC INDUSTRIES
ANDERSON DIVISION
SHASTA COUNTY

Section 9, T30N, R4W, MDB&M
Cottonwood, California
7.5' USGS Quad
Scale: 1 inch = 2,000 feet


Site Diagram
Sierra Pacific Industries
Anderson Division
1 inch = 550 Feet (Approx.)
Direction of Surface Flow
Watercourses
Drains
Roadways
Liechfield
A- Log Deck Rec. Pnd.
B- Gate Valve
C- SP Ditch
D- Scaling Yard
E, E1- Fire Pond
F- Hyd & Saw Oil Stg.
G- Sawmill
H- Fuel Pile
I- Kilns
J- Boiler
K- Cooling Shed
L- Dry Shed
M- Planer
N- Truck Shop
O- Diesel Stg.
P- Gasoline Stg.
Q- Chip Loading
R- Fabrication Shop
S- Wharehouse
T- Haz. Mat. Stg.
N
R-1
Highway 273
ACID Canal
Retention Pond
B
001
C
Siskiyou Forest Products
Wheelabrator - Hudson
(No Longer in Operation)
Log Deck
A
D
Sacramento River
T
Well
S
F
E1
G
Well
Pole Plant Area
H
J
003
R
E
T
I
K
Q
P
O
N
L
M
002
Spring Gulch Creek
R-2