

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2014-0025
WASTE DISCHARGE REQUIREMENTS
FOR
SIERRA PACIFIC INDUSTRIES - MARTELL DIVISION FACILITY
CLOSURE, AND POST CLOSURE OPERATION AND MAINTENANCE
AMADOR COUNTY

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

1. Sierra Pacific Industries–Martell Division (hereafter Discharger) owns, or owned, property that includes: a former lumber mill, former wood manufacturing operations, a wood waste landfill, an unlined leachate basin, an ash disposal area, a former cogeneration fuel stockpile area, and undeveloped land, which is located at the northwest corner of the intersection of Highway 49 and Highway 88 in the town of Martell. This property is located in the North half of Section 19, Township 6 North, Range 11 East Mount Diablo Baseline and Meridian (MDB&M). The property location is shown on Attachment A, which is attached hereto and made part of this Order by reference.
2. For the purposes of this Order, the Discharger's facility consists of an unlined wood waste landfill covering 15.6 acres, a closed ash disposal landfill covering 5.3 acres, an unlined leachate collection basin covering 2.5 acres, and surface water drainage courses, as shown on Attachment A. The facility is comprised of Assessor's Parcel Nos. 44-010-123-00 and 44-010-125-00.
3. The property was operated as a sawmill from 1941 to 1997. Between 1941 and 1997, the facility was owned and operated by American Forest Products Company. Georgia-Pacific Corporation purchased the property in 1987. Georgia-Pacific informed the Central Valley Water Board in a 13 June 1997 letter that it had sold the property to the Discharger.
4. American Forest Products began lumber milling operations at the facility in 1941. Georgia-Pacific continued milling from 1987 through 1997. In 1972, when burning of excess wood waste was outlawed due to air pollution concerns, American Forest Products began its wood waste landfill operations by filling in a drainage swale with its wood waste. By 1976, American Forest Products was operating an on-site cogeneration facility that consumed most of the wood waste, but still discharged unsuitable wood waste to its wood waste landfill. In 1976, the Central Valley Water Board required American Forest Products to submit a Report of Waste Discharge (ROWD) for the wood waste landfill and the Board adopted Waste Discharge Requirements (WDRs) Order No. 76-212. Subsequently, based on a ROWD submitted by American Forest Products on

24 March 1987, the Central Valley Water Board adopted WDR Order 87-120 that permitted disposal of wood waste into the originally permitted area.

5. In its 22 March 1993 Clean Closure Plan, Georgia-Pacific stated that it had stopped accepting wood waste in 1987, and intended to clean close the wood waste landfill. Georgia-Pacific began clean closure of the wood waste landfill between 1993 and 1997. On 1 October 1997, the Discharger submitted a ROWD for the facility. The Central Valley Water Board adopted WDRs Order No. 98-094 on 17 April 1998.
6. On 8 October 2009, the Central Valley Water Board issued Order No. R5-2009-0110 in which the waste in the Ash Disposal Area and the leachate in the Leachate Basin were classified as designated waste. The Wood Waste Landfill was determined to be a threat to water quality. Therefore, the Order required that the Ash Disposal Area, the Leachate Basin and the Wood Waste Landfill be closed in accordance with California Code of Regulations, title 27 (Title 27).
7. The Discharger is closing the Wood Waste Landfill according to the 22 March 1993 “Clean Closure Plan for Georgia Pacific Corporation’s Solid Waste Disposal Site” and the 1 October 1997 “Report of Waste Discharge and Modification of the Wood Waste Landfill Clean Closure Plan.” The Discharger submitted a second addendum to the 1993 clean closure plan on 30 April 2009.
8. On 29 November 2010, the Discharger submitted an amended Report of Waste Discharge (ROWD). The information in the ROWD along with WDRs Order No. R5-2009-0110 and the reports listed below has been used in revising these waste discharge requirements (WDR’s).
 - Evaluation of Groundwater Levels Beneath the Ash Disposal Area – 30 July 2010
 - Request to Amend Waste Discharge Requirements (WDR’s) Order No. R5-2009-0110 – 4 April 2012
 - Final Closure and Post-Closure Maintenance Plan Former Ash Disposal Area – 22 June 2012
 - Revised Final Post-Closure Maintenance and Monitoring Plan for Ash Disposal Area – 20 September 2012
 - Updated Short-Term Contingency Plan for Leachate Basin – 12 October 2012
9. The ROWD, combined with the other reports mentioned above, contains the applicable information required in Title 27. The ROWD and supporting documents contain information related to this revision of the WDR’s including:
 - a. The Discharger’s closure design for the ash disposal area, which was closed by January 2013. The design included raising the base of the unit to maintain a five foot separation between the ground water and waste, and installing a synthetic low permeable cover with either a vegetative or asphalt upper layer.

- b. An increase in the height of the Leachate Basin containment berms to increase capacity.
- c. Changes to the monitoring location for the runoff from the Wood Waste Landfill to better represent the effectiveness of the Best Management Practices (BMPs) for storm water runoff.

WASTE CLASSIFICATION AND UNIT CLASSIFICATION

Ash Disposal Area

10. The Ash Disposal Area, located northeast of the Wood Waste Landfill and in the central area of the facility, was used as a disposal area for ash generated from Georgia-Pacific's Wellons boiler at the on-site cogeneration plant, and from a suspension burner within a particleboard facility. Georgia-Pacific's 21 June 1990 *Report of Disposal Site Information*, stated that ash from the Wellons boiler and the suspension burner was transported and deposited into a dedicated ash monofill consisting of adjacent piles three to five feet deep, 10 feet wide, and 50 feet long (2,500 cubic feet), which were each covered with one foot of soil. In Table 1 of the *Report of Disposal Site Information*, Georgia-Pacific stated that the 1990 rate of ash discharge was 620 tons per year (1,000 cubic yards), and that after 1990 the rate dropped to 25 tons per year. The Discharger stated in its 30 September 1997 ROWD that Georgia Pacific had stopped placing ash into the Ash Disposal Area in 1990 when the Wellons boiler was converted to natural gas.
11. In association with the 1997 land transfer to the Discharger, three composite samples of the ash material were obtained at depths of one to ten feet below the top of the ash pile. The samples were analyzed for dioxins/furans and polynuclear aromatic hydrocarbons (PAHs). A weighted value, called a Toxicity Equivalence (TEQ), was calculated for each dioxin sample result. In order to calculate a TEQ, a toxic equivalent factor (TEF) is assigned to each member of the dioxin and dioxin-like compound. The TEF is the ratio of the toxicity of one of the compounds in this category to the toxicity of the two most toxic compounds in the category, which are each assigned a TEF of 1. The most toxic compounds are 2,3,7,8-tetrachlorodibenzo-p-dioxin and 1,2,3,7,8-pentachlorodibenzo-p-dioxin. TEFs that have been established through international agreements currently range from 1 to 0.0001. The TEQ of each sample is calculated by multiplying the actual weight of each dioxin and dioxin-like compound by its corresponding TEF and then summing the results to obtain the TEQ. In its 18 May 1999 Waste Characterization Report, the Discharger reported that dioxins/furans were detected in three ash samples at concentrations of 0.16, 0.28, and 0.4 ug/kg TEQ, each exceeding the EPA Regional Screening Levels (RSL) criteria of 0.018 ug/kg TEQ for industrial soils. In addition, all three ash samples contained concentrations of PAHs.
12. In March 2000, Central Valley Water Board staff reviewed the Discharger's first waste characterization report of the ash waste (submitted on 18 May 1999), determined it incomplete, and directed the Discharger to address staff's comments and resubmit a

revised waste characterization report. The Discharger submitted the revised waste characterization report on 1 February 2008. The revised report stated that concentrations of dioxins were detected in all 11 samples of the ash material, all samples were above the RSL for industrial soils, and PAHs were reported in the ash material.

13. In its *Evaluation Monitoring Report*, the Discharger provided data that showed groundwater down gradient of the Ash Disposal Area has been impacted by elevated concentrations of calcium, magnesium, bicarbonate, and total dissolved solids with sporadic detection of dioxins. According to the Water Code section 13173, a designated waste is defined as a "*Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state as contained in the appropriate state water quality control plan.*" Based on the elevated groundwater analytical results for calcium, magnesium, bicarbonate, and total dissolved solids (TDS) in groundwater down gradient of the Ash Disposal Area, the Ash Disposal Area has released inorganic constituent in concentrations to groundwater that exceed the water quality criteria.
14. Based on the analytical results presented in the Discharger's second waste characterization report, historical groundwater monitoring data, and the Discharger's *Evaluation Monitoring Program Report*, the Central Valley Water Board concluded that the ash material was appropriately classified as a designated waste.
15. Based on the waste classification of the ash material in the Ash Disposal Area, the unit is classified as a Class II waste pile.
16. The Ash Disposal Area has been closed in accordance with *Revised Final Post-Closure Maintenance and Monitoring Plan for Ash Disposal Area – 20 September 2012*.

Wood Waste Landfill

17. The Wood Waste Landfill, located along the southern boundary of the site, was used by the former operators to dispose of wood waste, bark, and slash from the log decks that contained too much dirt and debris to be used as fuel in the on-site cogeneration plant. Additionally, wood waste generated off-site, consisting of pallets, scrap lumber, and residential yard waste, was accepted from the general public for disposal in the Wood Waste Landfill.
18. Title 27 defines leachate as any liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. It includes any constituents extracted from the waste and dissolved or suspended in the fluid. During the Discharger's clean closure operations, the working face of the Wood Waste Landfill is open to the environment, and storm water contacts and leaches through the wood waste. The resulting leachate discharges to an unlined basin (Leachate Basin).

19. When rainwater contacts the open face of the Wood Waste Landfill, a leachate is formed that can contain soluble materials extracted from the wood waste. This leachate has the potential to impact water quality in the Leachate Basin and/or in the underlying groundwater. In 2009-2010, the Discharger implemented additional best management practices for the leachate from the Wood Waste Landfill. Since that time, storm water runoff monitoring has shown average TDS concentrations below 500 milligrams per liter (mg/L) and manganese level below 300 micrograms per liter (ug/L), which is above the taste and order threshold but below USEPA Health Advisory for manganese. TDS will be maintained in the leachate below the concentration of 500 mg/L as part of the corrective action measures of the clean closing the Wood Waste Landfill.
20. The Discharger is presently clean closing the Wood Waste Landfill under the requirements found in the 2009 WDRs. Those requirements are continued under these WDRs.
21. Since restarting closure operations in 2002, the Discharger has extracted approximately 500,000 cubic yards of wood waste. Since 2007, the Discharger has clean closed approximately 9.93 acres of the 27 acre Wood Waste Landfill, and performed confirmation sampling and inspections in order to document that the wood waste has been removed down to native soil. This Order requires that the Discharger complete the Wood Waste Landfill closure activities as part of the corrective action and in accordance with section E. Construction Specifications; to comply with the maintenance and monitoring requirements; and to submit the technical reports in accordance with Provisions G.11.

Leachate Basin

22. The Leachate Basin is located adjacent to the northwest toe of the Wood Waste Landfill and down gradient of the Ash Disposal Area. Historically, but not currently, the Discharger pumped the Leachate Basin liquids to Sierra Pine Limited.
23. Leachate from the Wood Waste Landfill, run-off from the Ash Disposal Area, and sediment from the Ash Disposal Area have historically discharged into the Leachate Basin. The Discharger states that currently, only leachate from the Wood Waste Landfill, seeps, and groundwater discharge into the Leachate Basin.
24. In June 2007, water in the Leachate Basin contained concentrations of arsenic (0.00497 mg/L), and manganese (2,510 ug/L), below the California MCL of 0.01 mg/L for arsenic and above the California Secondary Maximum Contaminant Level (MCL) of 50 ug/L for manganese. In January 2008, samples from monitoring well B-14 contained concentrations of arsenic at 0.0079 mg/L (an estimated concentration as reported by the laboratory) and manganese at 3,100 ug/L.
25. Groundwater monitoring well B-14, a corrective action monitoring well, is hydraulically down gradient of the Leachate Basin, and extends into the uppermost aquifer. The lowermost portion of the Leachate Basin also extends into the uppermost aquifer. As

reported by the Discharger, the water levels and water quality in the Leachate Basin and monitoring well B-14 consistently indicates that monitoring well B-14 is in hydraulic communication with the Leachate Basin.

26. During the rainy season, water quality in the Leachate Basin generally improves as leachate from the Wood Waste Landfill and additional storm water from the immediate surrounding area enters the Basin. During this season the TDS generally falls below 500 mg/L. During the dry season, as water levels drop in the Leachate Basin because of evaporation and because it appears groundwater comprises a larger portion of the water in the Leachate Basin, the concentration of TDS in the Leachate Basin generally increases.
27. Due to degraded groundwater inflow into the Leachate Basin, neither the Leachate Basin itself nor monitoring well B-14 are appropriate locations to assess what impacts, if any, the leachate runoff from the Wood Waste Landfill and seeps entering the Leachate Basin may have on groundwater. Rather, the more appropriate approach is to regulate the quality of leachate runoff from the Wood Waste Landfill and seeps entering the Leachate Basin to ensure protection of local groundwater. Continued monitoring of monitoring well B-14 is required by Monitoring and Reporting Program (MRP) R5-2014-0025 for separately imposed corrective action-related requirements.
28. Sediment samples in the Leachate Basin obtained on 29 November 2007, and analyzed for leachate extracted with a citrate buffer, had concentrations of dioxin/furans ranging from 2.9×10^{-5} ug/L to 0.0023 ug/L, however the TEQ for TCDD was less than the water quality criteria of 0.000001 ug/L. In 2008/2009 Discharger removed the bottom sediments from the Leachate Basin, and transported the material to the Ash Disposal Area.

Drainage Channel

29. Erosional sediment from the Ash Disposal Area, Wood Waste Landfill and industrial facilities was deposited into a drainage channel that parallels the Wood Waste Landfill from the Ash Disposal Area to the Leachate Basin. In 2007, samples of this sediment were analyzed. Dioxin congeners 1,2,3,4,6,7,8-HpCDD, OCDD and 1,2,3,4,6,7,8-HpCDF were detected in the sediment at concentrations ranging from 59 to 560 picograms per liter.
30. The 2009 WDRs required the Discharger to sample the sediment in drainage channel, and based on those results, propose a management strategy. The *Drainage Channel Sediment Sampling Report* was submitted to the Central Valley Water Board and CDFW on 4 November 2011 and then resent to the California Department of Fish and Wildlife (CDFW) in 2012.
31. Because some of the Drainage Channel sediment concentration for PCDD/F exceeded the ambient site-specific levels and the screening benchmarks, the CDFW requested that the Central Valley Water Board require that a site-specific ecological and human

health risk assessment be conducted to evaluate potential risk. Specifically, the risk to birds and mammals that may utilize the site would be evaluated. Discharger was requested to submit a report by 31 October 2013 assessing the risk. The Discharger submitted a *Predictive Ecological Risk Assessment* Report on 31 October 2013 as required. Provision G.11.b of these WDRs requires the Discharger to submit a workplan and proposed timeline to resolve any site-specific ecological risk recommendations from the report.

SITE DESCRIPTION

32. The facility is located on fractured and weathered rocks of the Logtown Ridge geological formation in Martell, Amador County, California. A surface water table spring was previously observed adjacent to the southeast side of the Ash Disposal Area. The area was re-graded in connection with corrective actions at the Ash Disposal Area prior to closure.
33. There are 21 municipal, domestic, industrial, or agricultural supply wells within one mile of the site, as stated in the Discharger's 10 December 2008 *Engineering and Feasibility Study*. Locations of these wells relative to the facility are shown on Attachment B, which is incorporated herein and made part of this Order by reference.
34. Annual average precipitation in the Martell area is approximately 29 inches per year, and the 100-year, 24-hour precipitation event is estimated to be 6.5 inches, as reported by the Discharger in its 12 December 2008 conceptual *Closure Plan—Ash Disposal Area*. The 100-year return period total annual precipitation for the nearest station (i.e., the Sutter Hill Station) is 51.29 inches, and the average annual precipitation is 28.35 inches, as reported by the California Department of Water Resources.
35. Land within 1,000 feet of the site is used for commercial, industrial, residential, and agricultural purposes.
36. Based on a site-specific seismic analysis, the controlling maximum credible earthquake (MCE) for the site is a moment of magnitude 7 event along the West Tahoe Fault at the closest rupture distance of 86 kilometers from the site. It is estimated that a MCE event would produce a peak ground acceleration of 0.16 g at the site with a return period of 2,475 years.
37. The waste management facility is not within a 100-year flood plain, based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 06005C0556F.

SURFACE WATER AND GROUNDWATER CONDITIONS

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

39. The facility lies at the head of the drainage basin to Rock Creek, a tributary of the Sacramento-San Joaquin Delta. Surface drainage from the Wood Waste Landfill, the Ash Disposal Area, and the Leachate Basin is toward Rock Creek. The designated beneficial uses for the Sacramento-San Joaquin Delta, as specified in the Basin Plan, are: municipal and domestic supply, agricultural supply, industrial process supply, hydropower generation, water contact recreation, non-contact water recreation, cold freshwater habitat, spawning, reproduction and/or early development, and wildlife habitat.
40. The first encountered groundwater at or directly adjacent to the waste management units ranges from 3 to 58 feet below the native ground surface, with the shallowest groundwater near the Ash Disposal Area and the deepest first groundwater located to the southwest of the Wood Waste Landfill. Groundwater elevations range from 1,344 to 1,522 feet above mean sea level (MSL). The depth to groundwater fluctuates seasonally as much as 18 feet.
41. According to the *2012 First Quarter Monitoring Report*, the direction of shallow groundwater flow is generally to the southwest, at an average hydraulic gradient of 0.056 to 0.057 ft/ft with a velocity of 336 to 342 feet per year.
42. Groundwater quality recorded from 1986 to 2012 at up-gradient monitoring well B1 has ranged historically from 397 to 660 mg/L Total Dissolved Solids (TDS) for first encountered groundwater, and from 448 to 1,286 umohs/cm for electrical conductivity (EC).
43. Groundwater monitoring well B-14 monitors groundwater quality downgradient of the Wood Waste Landfill, the Ash Disposal Area, and the Leachate Basin. The following is a summary of the results from monitoring well B-14 during the 2010 through 2012 time period:
 - a. **PAHs** have not been detected in this monitoring well above the laboratory reporting limit or method detection limit in regular semi-annual sampling conducted since 2008/2009. A potential reason is the detection limit has been elevated since 8 July 2009. These WDRs will require appropriate detection limits for these constituents. Previously, in 2008, and as described in Order No. R5-2009-0110, PAHs were reported only at "J" value concentrations - above the laboratory method detection limit (MDL) and below its practical quantitation limit (PQL).
 - b. **Manganese:** The average concentration of manganese in this monitoring well was 1,900 ug/L with the highest concentration being 3,900 ug/L.
 - c. **TDS** concentration from this monitoring well averaged 797 mg/L, with the highest concentration being 1,200 mg/L. This value exceeds the California and USEPA Secondary MCL of 500 mg/L.

- d. **Electrical Conductivity** at this monitoring well averaged 1251 umhos/cm, with the highest concentration being 1832 umhos/cm. The Agricultural Water Quality Goal is 700 umhos/cm.
 - e. **Iron** concentration reported at this monitoring well for this period averaged 5.6 mg/L, with the highest concentration being 15 mg/L. This is above the California Secondary MCL of 0.3 mg/L.
 - f. **Arsenic** has not been analyzed at this monitoring well in the past four years. In May 2008, a sample from this monitoring well detected arsenic at 0.0079 mg/L, below the California MCL of 0.01 mg/L.
44. Groundwater monitoring well B-2 monitors groundwater quality downgradient of the Wood Waste Landfill. The following is a summary of the results from monitoring well B-2 during the 2010 through 2012 time period.
- a. **Manganese:** The average concentration of manganese in this monitoring well was 9,748 ug/L with the highest concentration being 10,000 ug/L.
 - b. **TDS** concentration from this monitoring well averaged 1,050 mg/L, with the highest concentration being 1,100 mg/L. This value exceeds the California and USEPA Secondary MCL of 500 mg/L.
 - c. **Electrical Conductivity** at this monitoring well averaged 1686 umhos/cm, with the highest concentration being 2,455 umhos/cm. The Agricultural Water Quality Goal is 700 umhos/cm.
 - d. **Iron** concentration reported at this monitoring well for this period averaged 1,350 ug/L, with the highest concentration being 1,890 ug/L. This is above the California Secondary MCL of 300 mg/L.
 - e. **Tannins and Lignins** concentration reported at this monitoring well for this period averaged 4,120 ug/L, with the highest concentration being 5,940 ug/L.
45. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.
46. Groundwater has been degraded (as described in Findings 12, 43 and 44 above) by inorganic and organic waste constituents at this site, including elevated concentrations of TDS, bicarbonate, calcium, chemical oxygen demand (COD), iron, manganese, magnesium, tannins and lignins. PAHs and dioxin/furans have also been detected sporadically in groundwater. The Discharger's *Evaluation Monitoring Program Report* submitted on 30 May 2008 identified pollutant releases to groundwater from the Ash Disposal Area and Wood Waste Landfill.

GROUNDWATER AND UNSATURATED ZONE MONITORING

47. The groundwater monitoring system includes wells: B-1, B-2, B-3, B-5, B-6R, B-8, B-9, B-11, B-13, B-14, B-15, B-16, B-17, and LD-2A, as shown on Attachment B.
48. The Leachate Basin appears to be in hydraulic communication with the uppermost shallow aquifer, as described in Findings 25 and 26.
49. The Discharger's detection monitoring systems at the Ash Disposal Area, Leachate Basin, and Wood Waste Landfill meet the requirements specified in Title 27.
50. The corrective action (Findings 59, 72, 73 and 74) monitoring systems for the Wood Waste Landfill and Leachate Basin consist of monitoring wells B-1, B-2, B-3, B-6R, B-9, B-10, B-11, B-12, B-13, B-14, B-17 and LD-2A. Monitoring Well B-14 is a point of compliance for the Leachate Basin and Wood Waste Landfill, and monitoring wells B-2 and B-11 are the point of compliance monitoring wells for only the Wood Waste Landfill. The Point of Compliance is described in Title 27 Section 20405. Monitoring wells B-6R, B-12, B-13, B-17 and LD-2A are sentry wells to determine during corrective action whether the groundwater plume has moved further downgradient in compliance with State Water Resources Control Board Resolution 68-16 and Title 27.
51. There are no unsaturated zone monitoring locations at the facility. In April 2009, the Discharger installed five temporary piezometers at the Ash Disposal Area to obtain and evaluate the depth to groundwater within the waste. This was done in order to design interceptor drains associated with closure of the Ash Disposal Area. These temporary piezometers were removed during final closure of the Ash Disposal Area.
52. As of January 2013, the Ash Disposal Area has been closed in accordance with the *Revised Closure Plan and Post-Closure Maintenance Plan for Ash Disposal Area, Revision 3 – 21 June 2012*, which was reviewed by Central Valley Water Board staff for compliance with Title 27 requirements. Five new piezometers (PZ-A, PZ-B, PZ-C, PZ-D, and PZ-E), that replace the five temporary piezometers, have been installed into the drainage blanket to document separation between groundwater and the bottom of the waste. *The Revised Closure Plan and Post-Closure Maintenance Plan for Ash Disposal Area, Revision 3 – 21 June 2012* satisfies the requirements for closure, as contained in Title 27.
53. The WDRs require that Ash Disposal Area unit shall be maintained and operated to ensure a minimum separation of five feet between the waste and the highest anticipated elevation of groundwater. However, because piezometer PZ-E (one of five piezometer at this unit located in the northwest corner of the Ash Disposal Area) hit bedrock at 4.5 feet preventing further drilling, if this piezometer remains dry the Board would evaluate this as meeting five-foot separation requirement at that location.
54. Title 27 Sections 20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of

a release from a Unit in accordance with Title 27 Section 20415(b)(1)(B)2-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.

55. PAHs and dioxin/furans are organic waste constituents that may be detected in groundwater at this site. Since most of these organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the evaluation of a release of wastes from the Ash Disposal Area, Wood Waste Landfill, and the Leachate Basin
56. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27 Section 20080(a)(1). Section 13360(a)(1) of the Water Code allows the Central Valley Water Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
57. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.
58. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for evaluating if there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. The specified non-statistical method for evaluation of dioxin and furan monitoring data is the presence of two or more constituents above their respective Method Detection Limit (MDL) level as described in EPA Method 1613B and EPA Method SM 5550B. Following an indication of a release, verification testing will be conducted to assess whether there has been a release from the Unit, or if there is a source of the detected constituents other than the landfill, or if the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL, as a trigger, is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL.

CORRECTIVE ACTION

59. The corrective action for each of the three waste management units is as follows: The Ash Disposal Area closure action is to cap the waste in place, which has been completed. The Wood Waste Landfill and Leachate Basin will be clean closed. The details of the closures for each area are described in the following Findings.

Ash Disposal Area

60. In December 2008, the Discharger submitted a conceptual closure plan for the Ash Disposal Area, *Closure Plan—Former Ash Disposal Area* and on 7 February 2009, submitted additional draft engineering drawings. The closure plan was based on an Engineering Feasibility Study completed in 2008 that evaluated the feasibility of clean closure, demonstrated that clean closure was infeasible, and determined that closure-in-place as a landfill was the most feasible alternative to clean closure. The conceptual closure plan proposed closure-in-place of the Ash Disposal Area, utilizing an engineered alternative cover to cap the upper surface of the unlined facility in order to limit infiltration of storm water into the waste, thereby limiting any associated leaching from the waste material into groundwater.
61. The Discharger states that the objectives of its corrective action are to:
- a. Isolate buried wastes,
 - b. Prevent accumulation of standing water,
 - c. Provide proper drainage to direct surface runoff away from the disposal area,
 - d. Limit surface water infiltration into the waste, and
 - e. Limit surface erosion of the waste due to rainfall or wind.

The Discharger's corrective action method for the Ash Disposal Area does not include groundwater containment or ex-situ water treatment.

62. In June 2011, the Discharger began closure activities at the Ash Disposal Area without an approved work plan, in violation of Provision F.11.d of the 2009 WDRs, which required that a *Final Construction Design and Construction Quality Assurance/Quality Control Plan* be submitted by 30 November 2010. Although a final closure plan was not approved by the Board, the Discharger continued with closure activities, and on 29 September 2011 the Discharger stated that it had excavated 150,000 cubic yards of ash from the entire Ash Disposal Area; stockpiled ash within and outside the Ash Disposal Area; and installed backfill and ash material back into the excavation to raise the ash above groundwater. The Discharger stated that the backfill material consisted of from the bottom up: cobbles and perforated drain pipe as a groundwater drainage layer, crushed rock as a soil filter, compacted soil filter, and ash material.
63. Due to violations of the 2009 WDRs, the Executive Officer issued Cleanup and Abatement Order (CAO) R55-2011-0710 to bring the Discharger into compliance with WDRs R5-2009-0110. In response to the CAO, the Discharger submitted a *Revised Closure Report* on 15 February 2012, an *Ash Excavation Technical Report* on 15 February 2012, and five drawings for the *Revised Closure Report* on 23 February 2012.
64. Title 27, Section 21090 provides the minimum prescriptive final cover components for landfills or waste piles consisting of, in ascending order, the following layers:
- a. Two-foot soil foundation layer.

- b. One-foot soil low flow-hydraulic conductivity layer, less than 1×10^{-6} cm/s or equal to the hydraulic conductivity of any bottom liner system.
 - c. One-foot soil erosion resistant/vegetative layer.
65. Title 27 allows engineered alternative final covers provided the alternative design will provide a correspondingly low flow-through rate throughout the post-closure maintenance period.
66. The Discharger in its *Revised Closure Report* on 15 February 2012 submitted the proposed final cover that includes an analysis of the proposed engineered alternative final cover.
67. The Discharger has demonstrated that the engineered alternative final cover meets the performance goals of Title 27 and that it is equivalent to the prescriptive standard.
68. The Discharger's engineered alternative constructed for the Ash Disposal Area top deck consists of, from the top down:
- a. 3 inches of asphalt;
 - b. 1 foot of base rock;
 - c. 10-ounce non-woven geotextile filter fabric or equivalent;
 - d. A textured 50-mil linear low density polyethylene (LLDPE) Super Gripnet membrane liner with an integral drainage layer; and
 - e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.

The Discharger's engineered alternative constructed for the side-slopes includes a vegetative cover with slopes not exceeding a 3:1 grade, and consisting of, from top to bottom:

- a. Vegetative cover of native grasses seeded at a rate of 34.5 pounds per acre;
 - b. 1-foot cover soil;
 - c. 10-ounce non-woven geotextile filter fabric;
 - d. A textured 50-mil LLDPE Super Gripnet geomembrane liner with integral drainage layer; and
 - e. 2-foot compacted earth layer, with uppermost 6 inches screened to a 1-inch maximum particle size.
69. Side slopes for the closed landfill include 15-foot wide benches every 50 vertical feet as required by Title 27.
70. Section 21750 of Title 27 of the California Code of Regulations requires that landfill slopes must have a calculated safety factor of 1.5 under dynamic pseudo-static

conditions as demonstrated with a critical slope stability analysis. The Discharger has performed critical slope analysis for the final cover using SLOPE W software. Static safety factors of approximately 4.0 against global failure, and 1.6 against surficial veneer cover failure, were calculated for critical sections. A seismic coefficient of 0.16 was applied to the analyzed section. Pseudo-static factors of safety of approximately 2.5 were calculated for global stability and approximately 1.0 for the surficial veneer cover section. The Discharger's critical slope stability analysis demonstrates that the side slopes of the final cover are in accordance with the requirements of Title 27.

71. This Order approves the constructed final cover and finds that the final cover system satisfies the requirements for closure contained in Title 27.

Wood Waste Landfill

72. The Discharger states it will continue to clean close the Wood Waste Landfill consistent with the 22 March 1993 "Clean Closure Plan for Georgia Pacific Corporation's Solid Waste Disposal Site" and the 1 October 1997 "Report of Waste Discharge" and 2009 "Addendum to Clean Closure Plan." This is consistent with the mandatory clean-closure per Title 27 section 21410(a)(1) for a waste pile. The Discharger proposes multiple years to complete the clean closure by excavating and processing the remaining wood waste and associated soils. The clean closure of the Wood Waste Landfill involves excavating and processing the remaining wood waste in the landfill for reuse. At the end of each dry season, all of the area from which wood waste has been removed that year, may be clean closed, graded and hydroseeded, in order to prepare the surface for winter rains. Storm water that contacts the uncovered wood waste area will be collected in unlined drainage ditches and routed to the unlined Leachate Basin. Storm water runoff from the clean closed area will be routed to a drainage ditch that traverses around the Leachate Basin and discharges directly into the tributary to Rock Creek. Water collected in the Leachate Basin will be used for on-site dust control or in wood waste processing.

Leachate Basin

73. The Discharger has raised the berms of the Leachate Basin to provide more capacity for the Basin by constructing 5-foot high berms around the southernmost (lowest) section of the Leachate Basin in order to bring the berm elevation up to approximately 1,399 feet elevation.
74. At the completion of clean closure of the Wood Waste Landfill the Discharger shall clean close the Leachate Basin in accordance with Title 27 Section 21400.

Cogeneration Fuel Stockpile Area

75. The former Cogeneration Fuel Stockpile Area was northeast of the Wood Waste Landfill and covered approximately 4.7 acres. The stockpile was removed to native soils or bedrock with verification sampling as described in "*Revised Verification Report of Partial*

Clean Closure Wood Waste Landfill and Form Cogeneration Fuel Stockpile Area” dated 20 August 2008. The area was then revegetated. The Cogeneration Fuel Stockpile Area has been cleaned closed and the closure complies with Title 27.

POST CLOSURE MAINTENANCE OF ASH DISPOSAL AREA

76. On 21 September 2012, the Discharger submitted the *Revised Final Post-Closure Maintenance and Monitoring Plan (RFPMP)*, *Former Ash Disposal Area* report.
77. On 17 October 2012, Central Valley Water Board staff provided written concurrence with the Final Post-Closure Maintenance and Monitoring Plan, as long as the Discharger incorporated a number of specified conditions. On 1 August 2013, the Discharger submitted an “*Addendum to Revised Final Post Closure Maintenance Plan*” addressing the conditions in 17 October 2012 letter. The Board concurs with the Addendum response to the conditions and this Addendum shall become apart RFPMP and attached to the onsite copy at the facility.

FINANCIAL ASSURANCES

78. Title 27, sections 22207 require a closure cost estimate for Class II and Class III units. The cost estimate must be equal to the cost of closing a unit at the point in its active life when the extent and manner of operation would make closure the most expensive. When closing units in phases, the estimate may account for closing only the maximum area or unit open at any time. The Discharger’s submittals of 30 April 2012 *Financial Assurances – Ash Disposal Area (ADA)*, *Financial Assurance update – WWLF, WDRs R5-2009-0110 – SPI Martell* and 8 May 2012 *Financial Assurances – WWLF WDRs R5-2009-0110 – SPI Martell* includes a cost estimate for closure. The lump sum estimate is for the cost to close largest future area needing closure at any one time. The total amount of the closure cost estimate in 2012 dollars for the Wood Waste Landfill and Detention Pond is \$5,182,667. The Ash Disposal Area landfill has already been closed so financial assurances for closure of this landfill are no longer required. This Order requires that the Discharger maintain financial assurance with the Central Valley Water Board in at least the amount of the annually updated closure cost estimate for the Wood Waste Landfill and Detention Pond until such time as they are closed and closure has been accepted by Central Valley Water Board staff. The Discharger has posted Performance Bond for Closure through Western Surety Company.
79. Title 27, sections 22212 require a cost estimate for Class II and Class III units for post-closure maintenance. The Discharger’s submittal of 30 April 2012 *Financial Assurances – Ash Disposal Area (ADA)*, *Financial Assurance update – WWLF, WDRs R5-2009-0110 – SPI Martell* and 8 May 2012 *Financial Assurances – WWLF WDRs R5-2009-0110 – SPI Martell* includes a cost estimate for landfill post-closure maintenance. The amount of the cost estimate for post-closure maintenance in 2012 dollars is \$646,500 for Ash Disposal Area and \$543,001 for the Wood Waste Landfill and Detention Pond. This Order requires that the Discharger maintain financial assurance with Central Valley

Water Board in at least the amount of the post-closure maintenance cost estimate adjusted annually for inflation. The Discharger has posted Performance Bond for Closure through Western Surety Company.

80. Title 27, section 20380(b) requires per Title 27 a cost estimate for corrective action of all known or reasonably foreseeable releases. The Discharger submitted a letter dated 31 July 2013 titled "*Financial Assurances for Corrective Action Clarification in support of revised WDRs Order R5-2009-0110.*" This letter demonstrated that the Ash Disposal Area post-closure maintenance financial assurance and the Wood Waste Landfill closure financial assurance are sufficient to cover corrective action for any known or reasonably foreseeable releases from those two units. The Ash Disposal Area contains waste that is not mobile unless it is eroded into surface water or water comes in direct contact with waste and the post-closure maintenance cover both of these potential releases. The Wood Waste Landfill corrective action measure is clean closing the site with no potential releases and the closure financial assurances cover the closure of the Wood Waste Landfill. As a result, the financial assurance for the Ash Disposal Area post-closure maintenance and Wood Waste Landfill closure are sufficient to cover any corrective action of all known or reasonably foreseeable releases.

CEQA AND OTHER CONSIDERATIONS

81. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code section 21000, et seq., and the CEQA guidelines, in accordance with California Code of Regulations, title 14, section 15301.
82. This Order implements:
- a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;*
 - b. The prescriptive standards and performance goals of Title 27, effective 18 July 1997, and subsequent revisions;
 - c. The attainment of water quality per State Water Board Resolution 92-49, the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Section 13304 of the California Water Code;* and
 - d. State Water Board Resolution 68-16, the Policy with Respect to Maintaining High Quality Waters of the State
83. Based on the threat and complexity of the discharge, the facility is determined to be classified 2-B as defined below:
- a. Category 2 threat to water quality, defined as, "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."

- b. Category B complexity, defined as, “Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units.”

84. Water Code section 13267(b) provides that: *"In conducting an investigation specified in subdivision (a), the Central Valley Water Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of the waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports."*
85. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2014-0025" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

86. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
87. The Central Valley Water 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 with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
88. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that pursuant to California Water Code sections 13263 and 13267, that Order No. R5-2009-0110 is rescinded except for purposes of enforcement, and that Sierra Pacific Industries - Martel Division, their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The transfer of liquids from the Leachate Basin to Sierra Pine Limited is prohibited.

2. The discharge of designated waste into the Leachate Basin from the Wood Waste Landfill (except for Wood Waste Landfill leachate as described in Findings 18, 19 and 23, and with the limits established in Discharge Specification B.5.) is prohibited.
3. The discharge of “hazardous waste” and “designated waste” at this facility is prohibited (except for Wood Waste Landfill leachate as described in Findings 18, 19 and 23, and with the limits established in Discharge Specification B.5). For the purposes of this Order, the term ‘hazardous waste’ is as defined in California Code of Regulations, title 23, section 2510 et seq., and ‘designated waste’ is as defined in Water Code section 13173.
4. The discharge of solid waste, leachate, or liquid waste to surface waters, surface water drainage courses, or groundwater is prohibited, with the exception of discharges from the Wood Waste Landfill and the Leachate Basin described herein. These discharges shall discontinue by **31 January 2022**.
5. The discharge of waste to the Ash Disposal Area or Wood Waste Landfill is prohibited.
6. The discharge of liquid or semi-solid wastes, or solid wastes containing free liquid or moisture in excess of the moisture holding capacity of the waste is prohibited.
7. In order to reduce the possibility of stormwater infiltration and/or runoff, the area in which active clean closure operations are conducted at the Wood Waste Landfill must not exceed seven acres during the period of the annual rainy season, from 1 October to 30 April.

B. DISCHARGE SPECIFICATIONS

1. The waste management units (Wood Waste Landfill, Ash Disposal Area, and Leachate Basin) shall be maintained to prevent inundation or washout due to floods with a 100-year return period.
2. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
3. Annually, prior to **15 October**, any necessary erosion control measures shall be implemented. Any depressions, potholes, tire tracks, rills, or other blemishes in the Wood Waste Landfill and Ash Disposal Area covers that may retain water must be repaired. If necessary, the covers must be re-graded and the vegetation reestablished in order to shed storm water. Any other construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.

4. Liquid from the Leachate Basin may only be used for on-site dust control on the Wood Waste Landfill and adjacent access roads to and from the Wood Waste Landfill and between the Wood Waste Landfill and the Leachate Basin. This liquid may not be used for dust control from 24 hours before a predicted and 24 hours after an actual 0.25 inch rain event. Liquid in the Leachate Basin may also be used in the wood waste processing at the Wood Waste Landfill. Other uses may be approved by the Executive Officer.
5. Wood Waste Landfill storm water runoff, measured in the leachate basin supply channel upstream of the leachate basin, must not exceed TDS concentration of 500 mg/L.
6. Intrawell limits for TDS, iron, manganese, tannins and lignins, and COD shall be established for monitoring wells B-12, B-13, B-17, LD-2A and B-6R (see description in Finding 50). The data set to be used is samples collected from years 2008 through January 2013. The statistical formula in B.4 of Monitoring and Reporting Program No. R5-2014-0025 (Upper Tolerance Limit = $\bar{X} + KS$) shall be used, and seasonal/spatial variability and outliers evaluations shall be completed per Title 27 Section 20415(e)(9)(F & G). If the concentration exceeds these intrawell limits the discharger shall report the exceedance to the Central Valley Water Board within 72 hours and within 60 days of the reported exceedance submit a report that describes the exceedance and any necessary corrective action measures.
7. The Discharger may use an electrical conductivity (EC) field measurement in place of a laboratory reported TDS value, according to the conversion factor submitted to the Regional Board on 2 December 2009.

$$\text{TDS} = 0.0266 * \text{Ln}(\text{EC}) + 0.5222$$

where: EC = electrical conductivity (umhos/cm); and
TDS = total dissolved solids (mg/L)

C. RECEIVING WATER LIMITATIONS

Water Quality Protection Standards

The concentrations of Constituents of Concern in waters passing through each waste management unit's Point of Compliance shall not exceed the Concentration Limits established for each constituent of concern at each monitoring point (i.e., for each monitoring point/constituent of concern pair) pursuant to Monitoring and Reporting Program Order R5-2014-0025, which is attached to and made part of this Order by reference.

D. FINANCIAL ASSURANCE

1. The financial assurances for the Ash Disposal Area post-closure maintenance and Wood Waste Landfill closure shall be used for assurance for any corrective action of all known or reasonably foreseeable releases.
2. The Discharger shall demonstrate financial responsibility for closure and post-closure maintenance, as described in Findings 78 and 79, and shall submit a report of financial assurances by **June 1st each year** to the Executive Officer for review and approval. The assurances of financial responsibility shall provide that funds for closure and post-closure maintenance shall be available to the Central Valley Water Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. Financial assurance must also include provisions for the cost of closure in-place, as an option, as stated in **Section E.4 Construction Specifications**. The Discharger shall adjust the cost annually to account for inflation as well as any changes in facility design, construction, or operation.

E. CONSTRUCTION SPECIFICATIONS

Closure of the Wood Waste Landfill and Leachate Basin

1. The Wood Waste Landfill and the Leachate Basin must be clean closed according to the time schedule in **Section G., Provisions** of this Order, and the following Specifications.
2. The Wood Waste Landfill shall be clean closed by 31 December 2021. The Discharger must extract and transport from the facility for appropriate disposal a minimum of 40,000-cubic yards of wood waste each calendar year, or a higher volume as necessary to meet the final closure date. Beginning in 2013, a three-year moving average of extraction of wood waste must be a minimum of 55,000 cubic yards. Any extracted material not immediately removed offsite must be handled in accordance with facility SWPPP.
3. Continuing in 2014, the Discharger must perform a topographic survey of the Wood Waste Landfill every three years and then document the volume of wood waste remaining in the landfill. This requirement began in 2010. The 2007 topographic map may be used as a baseline. The topographic maps must be stamped and signed by a California licensed Land Surveyor or Civil Engineer licensed to perform land surveying.
4. At final closure of the Wood Waste Landfill and Leachate Basin, all residual wastes, including liquids, sludge, precipitates, settled solids, and liner materials and adjacent natural geologic materials contaminated by wastes, shall be completely removed and discharged to an appropriate unit or treated to the extent that the Central Valley Water Board staff find they no longer pose a threat to water quality, in conformance with the requirements of Title 27 sections

20950(a)(2)(B) and 21090(f). If after reasonable attempts the Discharger demonstrates that the removal of all remaining contamination is infeasible, the Wood Waste Landfill shall be closed as a landfill no later than 31 December 2021.

5. The closure of the Wood Waste Landfill and Leachate Basin shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.
6. A final verification of clean closure report for the Wood Waste Landfill and the Leachate Basin must be submitted according to the time schedule in **Section G., Provisions** of this Order.

F. CLOSURE AND POST-CLOSURE MAINTENANCE SPECIFICATIONS ASH DISPOSAL AREA

1. The Discharger shall obtain revised WDRs prior to making any changes to the final cover design other than the design or designs approved in this Order.
2. The Discharger shall ensure that the vegetative/erosion resistant layer receives necessary seed, binder, and nutrients to maintain the vegetation approved in the final closure plan. The Discharger shall install and maintain necessary erosion and sedimentation controls to prevent erosion and sediment in runoff from the closed landfill during the period during which the vegetation is not performing as designed in the final closure plan to minimize erosion and protect the final closure cover.
3. The Discharger shall comply with all Standard Closure and Post-Closure Specifications listed in Section XI and all Standard Construction Specifications that are applicable to closure in Section VII of the Standard Provisions and Reporting Requirements dated September 2003 which are attached hereto and made part of this Order by reference.
4. The waste management unit shall be maintained and operated to ensure a minimum separation of five feet between the waste and the highest anticipated elevation of groundwater. Piezometer PZ-E is required to be dry at all times to meet this five foot separation requirement (see Finding 53).
5. Surface drainage shall be diverted from the Unit.
6. The Discharger shall immediately notify Water Board staff of any slope failure and shall construct temporary and permanent repairs as soon as possible.

G. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory personnel.
2. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated September 2003. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these WDR's.
3. The Discharger must comply with Monitoring and Reporting Program Order R5-2014-0025, which is attached to and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities and precipitation and drainage controls and monitoring groundwater throughout the post-closure maintenance period. A violation of Monitoring and Reporting Program Order R5-2014-0025 is a violation of these WDR's.
4. The Discharger has the continuing responsibility to assure protection of waters of the state from discharged wastes, seeps, gases, and leachate generated by discharged waste during the closure and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
5. The Central Valley Water Board will review this Order periodically and may revise requirements when necessary.
6. The Discharger must comply with all local permitting requirements.
7. The Discharger must comply with all conditions of this Order including timely submittal of technical and monitoring reports as directed by the Central Valley Water Board's Executive Officer. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action, imposition of civil monetary liability, or revision or rescission of this Order.
8. All reports and transmittal letters accompanying these reports shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b, or c above if:

- i. The authorization is made in writing by a person described in a, b, or c of this provision;
 - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
 - iii. The written authorization is submitted to the Central Valley Water Board.
- e. Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”
9. In accordance with the California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and stamp of the seal.
10. In the event of any change in control or ownership of the facility, the Discharger must 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 as Discharger 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 telephone number of the persons responsible for contact with the Central Valley Water Board; and a signatory statement. The signatory statement shall comply with the signatory paragraph of the Standard Provisions, and shall 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 Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

11. Pursuant to Water Code section 13267, the Discharger shall submit the following reports:
 - a. **By 3 March 2014** the Discharger must submit a *Topographic Survey Report* that documents the volume of wood waste remaining in the Wood Waste Landfill and estimates the volume that must be removed on a yearly basis in order to submit the final closure report by 31 January 2022 (Provision G.11.e). The survey must be performed, signed, and stamped by a California licensed land surveyor. Thereafter, a topographic map documenting the volume of remaining wood waste must be submitted every third year in the annual monitoring report. Therefore, the next survey is due 31 January 2017.
 - b. **By 3 March 2014**, the Discharger shall submit a workplan and proposed timeline to resolve any site-specific ecological risk recommendations from *Drainage Channel Sediment Risk Assessment Report*.
 - c. **By 15 May 2014**, the Discharger shall submit Water Quality Limits Report for monitoring wells B-12, B-13, B-17, LD-2A and B-6R as described in Finding 50 and meeting the requirements in Discharge Specification B.6.
 - d. **By 31 December 2015**, the Discharger must submit an *Ash Disposal Area Closure Evaluation*. The report shall evaluate whether the closure of the ADA has resulted in a reduction of TDS, calcium, magnesium, and other constituent concentrations in groundwater, and whether water quality goals will be reached in a reasonable length of time. The report shall also evaluate whether a five-foot separation has consistently been maintained between the waste and groundwater. If the report demonstrates that closure has not been effective, or will not be effective in a reasonable timeframe, then the report shall include proposed additional corrective actions.
 - e. **By 31 January 2021**, the Discharger shall submit a *Leachate Basin Clean Closure Workplan* describing how the leachate basin will be clean closed, where the waste will be disposed of, and how the basin will be sampled to verify clean closure.
 - f. **By 31 January 2022**, the Discharger must submit a *Verification of Clean Closure Report for the Wood Waste Landfill and the Leachate Basin* report.

This report shall provide the necessary sampling data with an evaluation demonstrating the closure complies with Title 27 section 21410 for the Wood Waste Landfill and section 21400 for the Leachate Basin.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, Pamela C. Creedon, 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 7 February 2014.

Original signed by

PAMELA C. CREEDON, Executive Officer

Attachments:

Attachment A - Site Location Map

Attachment B - Facility Map and Features

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2014-0025
FOR
SIERRA PACIFIC INDUSTRIES - MARTELL DIVISION FACILITY
CLOSURE, AND POST CLOSURE OPERATION AND MAINTENANCE
AMADOR COUNTY

This Monitoring and Reporting Program (MRP or Order) describes requirements for monitoring a wood waste landfill, an unlined leachate basin associated with the wood waste landfill, an ash disposal area, groundwater, surface water, leachate, and seeps in accordance with the requirements of Waste Discharge Requirements Order No. R5-2014-0025 (WDRs or Order). This MRP is issued pursuant to Section 13267 of the California Water Code. Sierra Pacific Industries Inc. (Discharger) shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

The Discharger must comply with this MRP, the *Standard Provisions and Reporting Requirements* dated January 2003 (Standard Provisions), and Waste Discharge Requirements Order No. R5-2014-0025. The Discharger must fully disclose any monitoring, sampling, and analysis performed at this facility as required in the Standard Provisions, Section VIII. Failure to comply with this MRP constitutes noncompliance with the Water Code, which can result in the imposition of civil monetary liability.

A. MONITORING

The Discharger must conduct all monitoring in accordance with a Sample Collection and Analysis Plan (SAP) acceptable to the Executive Officer, and must include quality assurance and quality control standards as outlined in this MRP, the WDRs, and the Standard Provisions.

All samples must be representative of the volume, nature, or matrix of material sampled. The time, date, and location of each sample must be recorded on the sample chain of custody form. If methods other than U.S. EPA-approved methods or *Standard Methods for the Examination of Water and Wastewater*, latest edition, are used, the exact methodology must be submitted for review and approval. All monitoring points must be sampled and analyzed for the monitoring parameters, which includes the field parameters, and the constituents of concern as indicated and listed herein. Unless otherwise approved by the Regional Water Board, any sampling and monitoring results must be reported. All relevant facts must be fully disclosed.

Monitoring parameters are a select group of constituents that are monitored during each monitoring event which includes the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in Tables 1 through 6 for the specified monitored medium, and Table 7. The Constituent of Concern (COCs) include a larger group of waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit, and are required to be monitored every five years. All groundwater monitoring wells, leachate basin, leachate, seeps, piezometers, and

surface water monitoring points must be sampled and analyzed for the monitoring parameters and COCs as indicated in Tables 1 through 7.

Under the terms of a monitoring program established in 2007, the Discharger installed groundwater monitoring wells B-6R, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-14, B-15, B-16, and B-17 (Attachment B). In addition, in order to monitor the depth of groundwater within the waste at the closed ash disposal area, the Discharger has installed five piezometers PZ-A, PZ-B, PZ-C, PZ-D, and PZ-E. Groundwater monitoring wells B-1, B-2, B-3, and B-5 were installed prior to 2007. Monitoring must continue as required by this MRP until the Executive Officer issues a revised MRP.

1. Monitoring Points

The monitoring system for evaluation, detection, and corrective action for this facility must include the following monitoring points also shown on Attachment B:

Monitoring Points

<u>Media</u>	<u>Location / Identification Number</u>
Groundwater	B-1, B-2, B-3, B-5, B6-R, B-8, B-9, B-10, B-11, B-12, B-13, B-14, B-15, B-16, B-17, LD-2A; and ash disposal area piezometers PZ-A, PZ-B, PZ-C; PZ-D, and PZ-E. Monitoring Well B-9 is the background well for the leachate basin.
Surface Water	Existing locations SW-1 (located adjacent to the open face of the wood waste landfill, see attachment B) and SW-2 (Location shown in Attachment B).
Leachate Basin	Leachate Basin; and
Leachate	Within the drainage course, just before the inlet to the leachate basin.

The Discharger must maintain its storm water monitoring program for industrial activities. The Discharger is regulated under Water Quality Order No. 97-03-DWQ and General Permit No. CAS000001 (General Permit) for Discharges of Storm Water Associated with Industrial Activities, and must submit monitoring data according to the General Permit.

2. Groundwater Monitoring

General

The Discharger must operate and maintain a groundwater monitoring system that complies with this MRP, the Standard Provisions, the WDRs, and a SAP. The Discharger must collect, preserve, transport, and analyze groundwater samples in accordance with a SAP that has been reviewed by, and received concurrence of, the Regional Water Board. Prior to any changes in the monitoring program, the Discharger must submit an addendum to its SAP to the Regional Water Board staff for review and approval. The Discharger must have the changes and the overall monitoring system certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27.

Installation of Any New Wells

Whenever any new wells (including groundwater, gas, soil vapor, piezometers, and similar) are proposed, the Discharger must submit a monitoring well installation work plan that must include the information required by the Regional Water Board. **60-days after installation**, the Discharger must submit a monitoring well installation report that includes the analytical results and well construction details. The monitoring well installation report must include the information required by the Regional Water Board. Whenever any new wells are installed, such wells must be incorporated into this MRP beginning with the quarter in which such wells are installed.

Groundwater Flow Rate and Directions

Once per quarter, the Discharger must determine the groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored pursuant to this MRP. The Discharger states that groundwater monitoring well LD-2A is the only well at this site considered to be in an aquifer deeper than the uppermost aquifer; therefore, the groundwater flow rate and direction are not required for LD-2A.

Sampling and Analysis

Groundwater sampling for field and monitoring parameters required under this MRP must be performed in January and July. In addition, Title 27 §20415(e)(15) requires that the groundwater elevation be measured quarterly.

Groundwater samples must be collected from the existing wells and any additional wells or piezometers that may be installed at the facility in the future. Any groundwater sample obtained for monitoring must have a **turbidity of less than 10 NTUs**.

Samples must be collected and analyzed for the Constituents of Concern in accordance with the methods and frequency specified in the tables of this MRP. Organic Constituents of Concern must be analyzed for "total" concentrations. Filtering of organic samples is prohibited.

Groundwater samples collected for metals analyses listed in Table 7 may be filtered, provided that samples are obtained under anoxic conditions, that the metals samples are obtained prior to samples for other constituents, are immediately preserved and stored, and that a >10 micron polycarbonate membrane-type filter with uniform and sharp size cutoff is used. The monitoring report must document that the above conditions were met for each sample, and that pre-washing or conditioning of filters was routinely performed.

In each monitoring report, the applicable inorganic Constituents of Concern must be evaluated with regards to the cation/anion balance, and the results must be graphically presented using a Stiff diagram. Groundwater samples must be analyzed for the Constituents of Concern specified in Tables 1 and 2, in accordance with the methods listed in Table 7.

**Table 1
 Wood Waste Landfill Groundwater Monitoring Program**

Wood Waste Landfill Groundwater Monitoring Wells

Wells B-1, B-2, B-3, B-6R, B-9, B-10, B-11, B-12, B-13, B-14, B-17, and LD-2A.

<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Groundwater Elevation	ft. & hundredths, MSL	Quarterly
Temperature	°C	Semi-annual (January and July)
Electrical Conductivity	µmhos/cm	Semi-annual (January and July)
pH	pH units	Semi-annual (January and July)
Turbidity	NTU	Semi-annual (January and July)
<u>Monitoring Parameters</u>	<u>Units</u>	<u>Frequency</u>
Total Dissolved Solids	mg/L	Semi-annual (January and July)
General Minerals	mg/L	Semi-annual (January and July)
Dissolved Metals	mg/L	Semi-annual (January and July)
Tannins & Lignins	mg/L	Semi-annual (January and July)

**Table 2
 Ash Disposal Area Groundwater Monitoring Program**

Ash Disposal Area Groundwater Monitoring Wells and Piezometers

B-5, B-8, B-9, B-14, B-15, B-16, and piezometers PZ-A, PZ-B, PZ-C, PZ-D, and PZ-E.

<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Wells B-5, B-8, B-9, B-14, B-15, and B-16, and Piezometers PZ-A through PZ-E		
Groundwater Elevation	ft. & hundredths, MSL	Quarterly
Wells B-5, B-8, B-9, B-14, B-15, and B-16		
Temperature	°C	Semi-annual (January and July)
Electrical Conductivity	µmhos/cm	Semi-annual (January and July)
pH	pH units	Semi-annual (January and July)
Turbidity	NTU	Semi-annual (January and July)
<u>Monitoring Parameters</u>	<u>Units</u>	<u>Frequency</u>
Wells B-5, B-8, B-14, B-15, and B-16		
Total Dissolved Solids	mg/L	Semi-annual (January and July)
General Minerals	mg/L	Semi-annual (January and July)
Dissolved Metals	mg/L	Semi-annual (January and July)
Dioxins and Furans ⁽¹⁾	pg/L	Semi-annual (January and July)
Polynuclear Aromatic Hydrocarbons ⁽¹⁾	ug/L	Semi-annual (January and July)
<u>5-Year Constituents of Concern</u>		
Wells B-5, B-8 B-14, B-15, and B-16		
Polynuclear Aromatic Hydrocarbons ⁽¹⁾	ug/L	5 years (beginning with the January 2020 sampling event, and every 5 years thereafter)
Dioxins and Furans ⁽¹⁾	pg/L	5 years (beginning with the January 2020 sampling event, and every 5 years thereafter)

Notes

⁽¹⁾ Polynuclear Aromatic Hydrocarbons, using EPA Method 8270 Selected Ion Method with low detection limits, and Dioxins and Furans, using EPA Method 1613B total concentrations, shall be sampled and analyzed semi-annually through the end 2015 as long as the detections are sporadic and no concentrations are above the reporting limit. Thereafter, and beginning with the January 2020 sampling event, polynuclear aromatic hydrocarbons (EPA Method 8270, Selected Ion Method) and dioxins and furans (EPA Method 1613B) shall be sampled and analyzed every 5 years during the January sampling event.

3. Wood Waste Landfill Leachate Monitoring

Title 27 defines leachate as any liquid formed by the drainage of liquids from waste or by the percolation or flow of liquid through waste. It includes any constituents extracted from the waste and dissolved or suspended in the fluid. At this site, leachate is formed when rainwater contacts the open face of the wood waste landfill. This leachate may contain soluble constituents extracted from the wood waste, including concentrations of iron, manganese, calcium, total dissolved solids, and tannins and lignins. The leachate generated at the wood waste landfill traverses down an unlined surface water drainage course and into an unlined leachate collection basin. The Discharger must sample this leachate just before the inlet into the leachate collection basin.

Leachate samples must be obtained during the wet season, which is defined as 1 October—30 April. Samples must be obtained during the first storm event, and monthly thereafter, provided storm events occur that produce discharge into the drainage course with sufficient volume to obtain a sample.

Samples must be collected, analyzed, and reported for the Constituents of Concern for all monitoring points assigned to the wood waste landfill leachate monitoring program in accordance with the frequency specified in Table 3 and the analytical methods listed in Table 7. If insufficient rainfall prevents a sample from being collected within a month, then the monitoring report shall include this information.

Table 3

Wood Waste Landfill Leachate and Leachate Basin Monitoring Program

Wood Waste Landfill Leachate Sampling Location

The sample location must be within the drainage course, just before the inlet into the leachate collection basin.

Field Parameters

Temperature

Units

°C

Specific Conductance

µmhos/cm

pH

pH units

TDS

mg/L

Monitoring Frequency

Once during the first storm event of the season, and monthly during the wet season provided surface flow occurs in the drainage course during regular business hours.

Rainfall⁽¹⁾

inches

Daily, October through April

Monitoring Parameters

Total Dissolved Solids

mg/L

Chemical Oxygen Demand

mg/L

Dissolved metals

mg/L

General minerals

mg/L

Tannins and Lignins

mg/L

Monitoring Frequency

Once during the first storm event and once during any other storm event of the season during regular business hours and provided the event produces discharge into the drainage course.

Notes

⁽¹⁾ Rainfall shall be monitored and documented daily using an on-site rain gauge; the Sutter Hill Ranger Station can be used as a secondary rain gauge if necessary.

4. Surface Water Monitoring

All surface water monitoring parameters must be analyzed for total concentrations, including organic and inorganic constituents. The Discharger must sample and analyze surface water at monitoring locations SW-1 and SW-2. Each surface water location must be sampled for two events **during the first hour of discharge during regular business hours** from:

- (1) The first storm event of the wet season, and
- (2) At least one other storm event in the wet season.

If no rain event occurred during a monitoring period, this must be so stated in the monitoring report.

Samples must be collected, analyzed, and reported for the field and monitoring parameters for all monitoring points assigned to surface water monitoring, in accordance with the methods and frequency specified in Table 4.

Table 4		
Surface Water Monitoring Program		
<u>Surface Water Sampling Locations</u>		
Samples to be obtained at locations SW-1 and SW-2		
<u>Field Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>
Temperature	°C	Sample during the first hour of discharge during regular business hours from (1) the first storm event of the season and (2) from at least one other storm event of the season.
Specific Conductance	µmhos/cm	
pH	pH units	
ORP	mv	
<u>Monitoring Parameters</u>		<u>Monitoring Frequency</u>
Total Dissolved Solids	mg/L	Sample during the first hour of discharge during regular business hours from (1) the first storm event of the season and (2) from at least one other storm event of the season.
Total Suspended Solids	mg/L	
Chemical Oxygen Demand	mg/L	
Total iron and manganese	mg/L	
General minerals	mg/L	
Tannins and Lignins	mg/L	

5. Leachate Basin Liquids and Seep Monitoring

Leachate Basin Liquids

The leachate basin freeboard must be recorded weekly during the wet season (1 October—30 April) and monthly during the dry season (1 May—30 September). Whenever the leachate basin is dry, this must be reported in lieu of the freeboard.

Samples shall be collected from the leachate basin, for the parameters indicated in Table 5. Analytical methods must be those listed in Table 7.

Seeps

Any leachate which seeps to the surface from the wood waste landfill, the unlined leachate basin, or the ash disposal area must be immediately sampled and analyzed for the Constituents of Concern, including the Field Parameters and Monitoring Parameters upon detection of any seep. Analytical methods must be those listed in Table 7. The quantity of leachate from any seep must be estimated and reported as Leachate Flow Rate (in gallons/day). After the initial sampling upon detection, any seep must be sampled and monitored at the frequencies listed in Table 6.

**Table 5
 Leachate Basin Liquids Monitoring Program**

<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Freeboard, pond	feet & inches	Wet Season: Weekly Dry Season: Monthly
Specific Conductance	µmhos/cm	Monthly whenever liquids are present
TDS	mg/L	Monthly whenever liquids are present
pH	pH units	Monthly whenever liquids are present
ORP	mv	Monthly whenever liquids are present
<u>Monitoring Parameters</u>	<u>Units</u>	<u>Frequency</u>
Total Dissolved Solids	mg/L	Semiannually (January and July)
General Minerals	mg/L	Semiannually (January and July)
Dissolved metals	mg/L	Semiannually (January and July)
Tannins & Lignins	mg/L	Semiannually (January and July)

**Table 6
 Seep Monitoring Program**

<u>Field Parameters</u>	<u>Units</u>	<u>Frequency</u>
Leachate Flow rate, seep	gallons/day	On detection, then <u>weekly</u> thereafter
Temperature	°C	On detection, then monthly thereafter
Electrical Conductivity	µmhos/cm	On detection, then monthly thereafter
pH	pH units	On detection, then monthly thereafter
<u>Monitoring Parameters</u>	<u>Units</u>	<u>Frequency</u>
Total Dissolved Solids	mg/L	On detection, then quarterly thereafter
General Minerals	mg/L	On detection, then quarterly thereafter
Dissolved metals	mg/L	On detection, then quarterly thereafter
Tannins & Lignins	mg/L	On detection, then quarterly thereafter

6. Facility Monitoring

a. Facility Inspection

Except as indicated in the schedule provided below for the ash disposal area cover (6.c), the discharger shall conduct an inspection of the facility annually, prior to the anticipated rainy season, but no later than **30 September**. The inspection must assess the condition of the groundwater monitoring equipment (including wells, etc.), any damage to the drainage control system, and condition of the interim cover and side slopes of the WWLF. The inspection must include the Standard Observations as defined in Section XII(s) of the Standard Provisions. Any necessary construction, maintenance, or repairs must be completed by **31 October**. By **15 November** of each year, the Discharger must submit an annual report describing the results of the inspection and repair measures implemented, including photographs of any problems encountered and the repairs made.

b. Storm Events

The Discharger must inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events in which precipitation exceeds 2 inches within a 24 hour period*. Drainage systems should be maintained clear of all debris and sediment. Necessary repairs must be completed **within 30 days** of the inspection. The Discharger must report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

c. Ash Disposal Area Cover Inspection

The ash disposal area cover shall be inspected monthly during the years of 2013-2014, quarterly for the years of 2015-2017, and then semi-annually.

d. Survey and Iso-Settlement Map for the Closed Ash Disposal Area

The Discharger shall conduct a survey and submit an iso-settlement map for the closed ash disposal area every five years pursuant to Title 27, section 21090(e). The initial report was due upon closure of the ash disposal area. The next report is due by **31 January 2017**.

B. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit (Wood Waste Landfill, Leachate Basin, and the Ash Disposal Area), the Water Quality Protection Standard shall consist of all COCs, the concentration limit for each constituent of concern, the verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points.

Any proposed changes to the Water Quality Protection Standard other than annual update of the concentration limits shall be submitted in a report for review and approval.

The Water Quality Protection Standard report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a waste management unit or portion of a unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).
- d. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E).
- e. Include a retesting procedure to confirm or deny measurably significant evidence of a release pursuant to Title 27, section 20415(e)(8)(E) and section 20420(j)(1-3).

The Water Quality Protection Standard report shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

The Water Quality Protection Standard shall be updated annually for each monitoring well using new and historical monitoring data.

2. Monitoring Parameters

Monitoring parameters are a select group of constituents that are monitored during each monitoring event that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those constituents listed in Tables 1 through 6 for the specified monitored medium.

3. Constituents of Concern (COCs)

The COCs include a larger group of waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit, and are required to be monitored every five years. The COCs for all waste management units at the facility are those listed in Table 7. The Discharger shall monitor all COCs every five years, or more frequently as required in accordance with any Corrective Action Program. The five year monitoring can coincide with monitoring parameter sampling to avoid duplicative sampling for the same constituent.

4. Concentration Limits

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

- a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or
- b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

The Concentration limit for this site is based on semi-annual groundwater sampling of monitoring well B-9, conducted from January 2008 to July 2012 using the following equation:

$$\text{Upper Tolerance Limit} = \bar{X} + KS$$

This equation is based on a normal distribution of the groundwater data and is calculated using the mean (\bar{X}) and standard deviation (S) of the population and the one-sided normal tolerance factor (K) with a probability level of 95% that 95% of the observations should fall below the calculated tolerance limit. The limits established are the following: TDS concentration of 696 mg/L, Iron concentration of 0.663 mg/L, Manganese concentration of 0.050 mg/L, and Tannins and Lignins concentration 0.694 mg/L. These concentration limits will apply to corrective action and detection monitoring evaluation.

5. Sentry Well Limits

Intrawell limits shall be established for monitoring wells B-12, B-13, LD-2A and B-6R (see WDR Finding 50) to determine during corrective action that groundwater degradation defined in monitoring well B-14 and B-2 (see WDR Finding 43 and 44) is not moving further downgradient. The data set to be used is samples collected from years 2008 through January 2013. The statistical formula in B.4 shall be used, and seasonal/spatial variability and outliers evaluations shall be completed per Title 27 Section 20415(e)(9)(F & G).

6. Monitoring Points

All monitoring wells established for the monitoring program must constitute the monitoring points for the groundwater Water Quality Protection Standard.

7. Point of Compliance

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

8. Compliance Period

The compliance period for the wood waste landfill, unlined leachate basin, and ash disposal area must be the number of years equal to the active life of the wood waste landfill and ash disposal area plus the closure period. The compliance period is the minimum period during which the Discharger must conduct a water quality monitoring program subsequent to a release from any Unit. The compliance period must begin anew each time the Discharger initiates an evaluation monitoring program. For this site, the compliance period is 53 years.

9. Background Monitoring Point

For the facility, the background monitoring point is groundwater monitoring well B-9.

C. REPORTING REQUIREMENTS

1. Record Maintenance

The Discharger must retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records must be maintained throughout the life of the facility including the postclosure period. Such legible records must show the following for each sample:

- a. Sample identification number, the monitoring point or background monitoring point from which it was taken, and the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;
- c. Date and time that analyses were started and completed, and the name of the responsible personnel and laboratory performing each analysis;
- d. Complete procedure used, any deviations from the procedure, and the method of preserving the sample;
- e. Calculation of results; and

- f. Results of analyses, and the method detection limit (MDL), practical quantitation limit (PQL), and trace quantities for each analysis.

2. Transmittal Letter and Certification

A transmittal letter explaining the essential points must accompany each report. The transmittal letter must include the WDR's Order number, and the date of the Standard Provisions. In addition, the transmittal letter must identify and discuss any violations found since the last report was submitted, and if the violations were corrected. The Discharger must reference any previously submitted time schedules for any corrective action, other enforcements, or evaluation monitoring. If no violations have occurred since the last submittal, this must be clearly stated in the transmittal letter. The transmittal letter must contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions, General Reporting Requirements. All reports and transmittal letters must be signed by persons identified below:

- a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
- b. For a partnership or sole proprietorship: by a general partner or the proprietor.
- c. A duly authorized representative of a person designated in a or b above if the authorization is made in writing by a person described in a or b of this provision; the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and the written authorization is submitted to the Board.

3. Report Prepared Under Supervision of Registered Geologist or Civil Engineer

In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments must be performed by, or under the direction of, registered professionals competent and proficient in the fields pertinent to the required activities. All monitoring reports, sampling and analysis plans, and any other reports or plans must be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each monitoring report, other report, or plan submitted by the Discharger must contain the professional's signature and stamp of the seal.

4. Report of Seeps

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

- a. A map showing the location(s) of seepage;
- b. An estimate of the flow rate;
- c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);

- d. Verification that samples have been submitted for analyses of the Constituents of Concern listed in Table 7 of this MRP, and an estimated date that the results will be submitted to the Regional Water Board; and
- e. Corrective measures underway or proposed, and corresponding time schedule.

5. Reporting Schedule

The Discharger must submit reports with the data and information required in this MRP, the WDRs Order No. R5-2014-0025, and the January 2003 Standard Provisions and Reporting Requirements.

Storm water monitoring will be reported annually in accordance with the General Industrial Storm Water Permit. All reports will be sent to the Central Valley Regional Water Board, with copies to the local enforcement agency and CalRecycle.

Monitoring Reports

Any reports for monitoring, sampling, and analysis required under this MRP must be submitted by the Date Due as shown on the table, below:

<u>Monitoring Reports</u>			
<u>Report Type</u>	<u>Sampling Frequency</u>	<u>Reporting Period</u>	<u>Date Due</u>
Semiannual	Weekly, monthly, quarterly, semiannual, annual, and 5-year COC	1 January – 30 June 1 July – 31 December	31 July 31 January

Other Reports

<u>Report Type</u>	<u>Date Due</u>
Annual Monitoring Summary Report	31 January of each year
Facility Monitoring Report	15 November of each year
Response to a Release	As necessary

6. Semiannual Monitoring Reports

Semiannual monitoring reports must include the following information:

- a. Surface water monitoring results must be reported in the semiannual reports. If no surface water was present during the monitoring period, then this must be stated in the report.
- b. The Discharger must determine and report the groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored pursuant to this MRP. Results must be reported semiannually, including the times of highest and lowest elevations of the water levels in the wells. Groundwater flow rate and direction of flow are not required for LD-2A, located in a deeper aquifer as stated by the Discharger.
- c. In reporting the monitoring data, the Discharger must arrange the laboratory-reported data in tables so that the date, the constituents, the concentrations,

units, qualifiers, and compliance or lack thereof is readily discernible. Showing readily discernible compliance or lack thereof must include shading a cell with gray fill or using bold, italics, and underlined font. The data must be summarized in such a manner so as to illustrate clearly the compliance with the WDRs or lack thereof. All historical and current groundwater, leachate, seep, and surface water analytical results must be tabulated and submitted.

- d. Field and laboratory tests must be reported in each monitoring report. Weekly, monthly, quarterly, semiannual, and annual monitoring reports must be submitted in accordance with the schedule, above, for the monitoring period in which samples were taken or observations made.
- e. A discussion of the monitoring results, including notations of any water quality violations must precede any tabular summaries. Increasing and/or decreasing concentration trends must be identified.
- f. For the wood waste landfill, each monitoring report must have a tabulated summary of the monthly total quantity of wood waste hauled off site during the reporting period, the annual quantity of wood waste hauled off-site for each year beginning with 1997, and the total cumulative quantity since the start of this Discharger's clean closure in 1997.
- g. The Discharger must include a site map showing the facility features, existing and historical monitoring wells, direction of groundwater flow, and stormwater and surface water monitoring locations.
- h. The Discharger must include hard copies of all analytical reports as signed by the laboratory's responsible personnel. Alternatively, the discharger may submit a CD with the analytical reports, provided that a summary table is provided that shows the sample location number with each analyte cross-referenced to its laboratory report number, and page number(s) in the laboratory report.
- i. The Discharger must include the monitoring well data sheets, including the date and time, sampling mechanism or type of pump, purging and sampling method, and water disposal method.
- j. The Discharger must provide a description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name, and any other observations).
- k. Each monitoring report must include a compliance evaluation summary. The summary must contain at minimum:
 - 1) Laboratory statements of results of all analyses evaluating compliance with requirements.
 - 2) A technical evaluation of the effectiveness of the leachate monitoring and control facilities.
 - 3) A technical evaluation of the effectiveness of the run-off/run-on control facilities.
 - 4) The quantity and types of wastes discharged into the wood waste landfill, and the locations in the wood waste landfill where waste has been placed since submittal of the last such report.

- 5) A **summary and certification of completion** of all **Standard Observations** for the wood waste landfill and ash disposal area, for the perimeter of the wood waste landfill and ash disposal area, and for the receiving waters. Standard observations must be conducted **weekly** during the wet season (1 October to 30 April) and **monthly** during the dry season (1 May to 30 September). The Standard Observations must include:

For the wood waste landfill, ash disposal area, and associated perimeters:

- a) Evidence of ponded water at any point on the facility (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;
 - c) Evidence of erosion and/or of day-lighted refuse; and
 - d) Evidence of seeps and/or liquid leaving or entering the wood waste landfill and ash disposal area, estimated size of affected area, estimated flow rate, and color of liquids (show affected area on map).
- 6) For each monitoring point and background monitoring point addressed by the report, a description of:
- a) The time of water level measurement;
 - b) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - c) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove of the water that was in the well bore while the sample was being taken;
 - d) The type of pump - or other device - used for sampling, if different than the pump or device used for purging;
 - e) A statement that the sampling procedure was conducted in accordance with the approved SAP;
 - f) A discussion of upward trends in any constituent concentration; and
 - g) A discussion of violations
- I. For polynuclear aromatic hydrocarbons, the Discharger must conclude that a release is tentatively indicated if the data for any Monitoring Point contains either:
- a) Two or more qualifying constituents that equal or exceed their respective MDLs, or
 - b) One qualifying constituent which exceeds its PQL

For dioxins & furans: the Discharger must conclude that a release is tentatively indicated if two or more dioxin or furan constituents are present above their respective minimum levels as described in EPA Method 1613B.

For tannins and lignins: the Discharger shall develop concentration limits (intra-well comparisons) at the points of compliance monitoring wells for the Wood Waste Landfill (B-2, B-3, B-11, and B-14). The Discharger must conclude that a release is tentatively indicated if the tannin and lignin data for any Point of Compliance Monitoring Point exceeds the concentration limit for that Monitoring Point.

Based on the above, if the Discharger determines that there is measurably significant evidence of a release from the wood waste landfill, leachate basin, or ash disposal area at any monitoring point, the Discharger must **immediately** implement the requirements of the **Standard Provisions’ Response to a Release**.

7. Annual Monitoring Report

The Discharger must submit an **Annual Monitoring Summary Report** to the Regional Water Board staff covering the reporting period described in the table, above. This report must contain:

- a. All Constituents of Concern must be graphed so as to show the concentrations and historical trends at each monitoring point and background monitoring point for all historical samples. Each such graph must plot the concentration of one constituent for the period of record for monitoring points or background monitoring point, at a scale appropriate to show trends or variations in water quality. Each concentration line for a specific well must be readily discernable from that of any other well's concentration line. The graphs must plot each laboratory-reported datum, and must **not** plot mean values. For any given constituent or parameter, the scale for background plots must be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
- b. All historical monitoring data, including all data for the previous year, must be submitted in tabular format and in a digital file format (e.g., an electronic file with an Excel spreadsheet) acceptable to the Regional Water Board. The Regional Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Regional Water Board. The electronic Excel spreadsheet must include the location identifier (e.g., well number or other monitoring point), analytical results, units, MDLs, PQLs, trace concentrations, analyte, CAS number, analytical method number, sample date, and laboratory. The acceptable format is shown below:

Sample Location ID	Date Sampled	Analyte	Result	PQL	MDL	Qualifier	Units
Location ID #1	mm/dd/yy	Analyte 1	0.004	0.005	0.0025	J	mg/L
Location ID #1	mm/dd/yy	Analyte 2	ND	0.005	0.0025		mg/L
Location ID #1	mm/dd/yy	Analyte 3	40	25	12		ug/L
Location ID #2	mm/dd/yy	Analyte 1	0.6	0.005	0.0025		mg/L

Sample Location ID	Date Sampled	Analyte	Result	PQL	MDL	Qualifier	Units
Location ID #2	mm/dd/yy	Analyte 2	10	0.005	0.0025		mg/L
Location ID #3	mm/dd/yy	Analyte 1	0.6	0.005	0.0025		mg/L
Location ID #3	mm/dd/yy	Analyte 3	26	25	12		ug/L

- c. A comprehensive evaluation and determination of the Discharger's compliance record, and the result of any corrective actions taken or planned, which may be needed to bring the Discharger into full compliance with the WDRs.
- d. The groundwater flow rate and direction, including the dates of highest and lowest elevations of the water levels in the wells.
- e. Hydrographs of each well must be submitted annually showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well must show the cumulative quarterly data.
- f. The applicable Constituents of Concern must be evaluated with regards to the cation/anion balance, and the results must be graphically presented annually using a Stiff diagram. Plots of each well must be prepared semiannually and submitted annually.
- g. Tabulated data showing the annual historical volume of material extracted and excavated out of any waste management unit (i.e., the wood waste landfill, ash disposal area, and Leachate Basin) and transported off-site.
- h. Tabulated data for the current calendar year showing the monthly and cumulative total quantity of any extracted material that has been transported off-site.
- i. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
- j. A discussion and evaluation of any statistically increasing/decreasing trends in constituent concentrations at any monitoring well must be provided.
- k. Annually beginning with the report due **31 January 2014**, the Discharger must list in tabular format all groundwater monitoring wells (both historical and existing), depth of boring, the horizontal survey coordinate, the vertical survey coordinate, the surveying reference datum (e.g., NAD 83, NVD 88, etc), the date installed, and the date decommissioned.
- l. The Discharger must include all information required to be reported by the Standard Provisions, this MRP, and the Waste Discharge Requirements.
- m. By **3 March 2014**, a topographic map, which includes the **current remaining volume of waste expressed in cubic yards**, must be submitted. Thereafter, a revised topographic, which includes the current remaining volume of waste

expressed in cubic yards, must be included every three years in the annual report starting with 2016 annual report (i.e. 2016, 2019, 2022, etc.).

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

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____ 7 February 2014

(Date)

TABLE 7 CONSTITUENTS OF CONCERN AND ANALYTICAL METHODS*

Field Parameter

Specific conductance
 pH
 Turbidity
 ORP/Dissolved oxygen
 TDS

Method

Calibrated field instrument
 Calibrated field instrument
 Calibrated field instrument
 Calibrated field instrument
 Calibrated field instrument with conversion factor approved by
 Regional Water Board

Monitoring Parameter

Metals, Dissolved**

Iron
 Manganese
 Arsenic

Method

EPA 6020
 EPA 6020
 EPA 7061

General chemistry

Specific conductance
 Tannins & Lignins
 Chemical Oxygen Demand
 Total Dissolved Solids

EPA 120.1
 SM 5550B
 EPA 410.4
 SM2540C

General minerals

Chloride, total
 Sulfate, total
 Carbonate, total
 Bicarbonate, total
 Calcium**EPA 6020**
 Magnesium**
 Sodium** EPA 6020**
 Potassium**

EPA 300
 EPA 300
 2320B
 2320B
 EPA 6020**
 EPA 6020**
 EPA 6020**

Polynuclear Aromatic Hydrocarbons, Selective Ion Monitoring (SIM) USEPA Method 8270C

Naphthalene
 Pyrene
 Acenaphthene
 Acenaphthylene
 Fluorene
 Phenanthrene
 Anthracene
 Fluoranthene
 Benzo(a)anthracene
 Chrysene
 Benzo(b)fluoranthene
 Benzo(k)fluoranthene
 Benzo(a)pyrene
 Indeno(1,2,3-c,d)pyrene
 Dibenzo(a,h)anthracene
 Benzo(g,h,i)perylene

TABLE 7 CONSTITUENTS OF CONCERN AND ANALYTICAL METHODS*

Tetra- through Octa-Chlorinated Dibenzodioxins and Dibenzofurans (dioxins/furans), USEPA Method 1613B, Total Concentrations

2,3,7,8-TCDD
Total TCDD
2,3,7,8-TCDF
Total-TCDF
1,2,3,7,8-PeCDD
Total-PeCDD
1,2,3,7,8-PeCDF
2,3,4,7,8-PeCDF
Total-PeCDF
1,2,3,4,7,8-HxCDD
1,2,3,6,7,8-HxCDD
1,2,3,7,8,9-HxCDD
Total-HxCDD
1,2,3,4,7,8-HxCDF
1,2,3,6,7,8-HxCDF
1,2,3,7,8,9-HxCDF
2,3,4,6,7,8-HxCDF
Total-HxCDF
1,2,3,4,6,7,8-HpCDD
Total-HpCDD
1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8,9-HpCDF
Total-HpCDF
OCDD
OCDF

Acronyms:

TCDD = Tetrachlorodibenzo-*p*-dioxin;
TCDF = Tetrachlorodibenzofuran;
PeCDD = Pentachlorodibenzo-*p*-dioxin;
PeCDF = Pentachlorodibenzofuran;
HxCDD = Hexachlorodibenzo-*p*-dioxin;
HxCDF = Hexachlorodibenzofuran;
HpCDD = Heptachlorodibenzo-*p*-dioxin;
HpCDF = Heptachlorodibenzofuran;
OCDD = Octachlorodibenzo-*p*-dioxin
OCDF = Octachlorodibenzofuran

- * Constituents of Concern must be prepared and analyzed for "total" concentrations unless otherwise approved by the Regional Water Board.
- ** Dissolved metals are to be obtained with a >10 micron filter as required under this Monitoring and Reporting Program. Calcium, magnesium, sodium, and potassium may be field-filtered with a >10 micron filter as required under this Monitoring and Reporting Program.

INFORMATION SHEET

ORDER NO. R5-2014-0025

WASTE DISCHARGE REQUIREMENTS For SIERRA PACIFIC INDUSTRIES-MARTEL DIVISION FACILITY CLOSURE, AND POST CLOSURE OPERATION, MAINTENANCE AND MONITORING AMADOR COUNTY

Background

Sierra Pacific Industries, Martell Division, (Discharger) owns, or owned, a 242-acre former lumber mill located in Martell, California, in Amador County. The facility includes a former Ash Disposal Area covering approximately 5.3 acres, a Class III Wood Waste Landfill covering approximately 15.6 acres, and an unlined leachate basin of approximately 2.5 acres, located on the southern boundary of the property.

These facilities were previously regulated by Waste Discharge Requirements (WDR) Order No. R5-2009-0110, which permitted closure-in-place of the ash disposal area, and clean closure of the wood waste landfill. WDR Order No. R5-2009-0110 required that the clean closure of the wood waste landfill be completed by 2021 and that closure date is continued in these WDRs. This Order requires that the Leachate Basin shall be closed shortly thereafter. The Ash Disposal Area was closed in the year 2012.

Ash Disposal Area

The approximate combined volume of waste and soil in the ash disposal area is 80,000 cubic yards. In the 18 May 1999 Waste Characterization Report, the Discharger reported all samples taken at the ash disposal area contained concentrations of dioxins/furans which exceeded the EPA Industrial Regional Screening Levels. At the request of the Amador County, the ash disposal area was covered with an interim 1-foot clean soil cap, and reseeded to mitigate erosion.

On 12 December 2008 the Discharger submitted a revised Report of Waste Discharge (ROWD) for the facility. The closure plan includes capping the area with an engineered alternative; diverting, repairing and upgrading the drainage courses; and installing interception drains to maintain a minimum separation of five feet between groundwater and the bottom of the waste pile. Because of some technical issues a *Revised Final Post-Closure Maintenance and Monitoring Plan for Ash Disposal Area – 20 September 2012* was submitted and Board staff concurred with the plan. Closure was completed in 2012.

Wood Waste Landfill

The discharger is currently performing clean closure of the wood waste landfill under WDR Order No. R5-2009-0110. Since 2007, the Discharger has clean closed approximately 9.93 acres of the 27 acre Wood Waste Landfill, and performed confirmation sampling and inspections in order to document that the wood waste has been removed down to native soil.

This Order requires that the Discharger complete the Wood Waste Landfill closure activities by 2021.

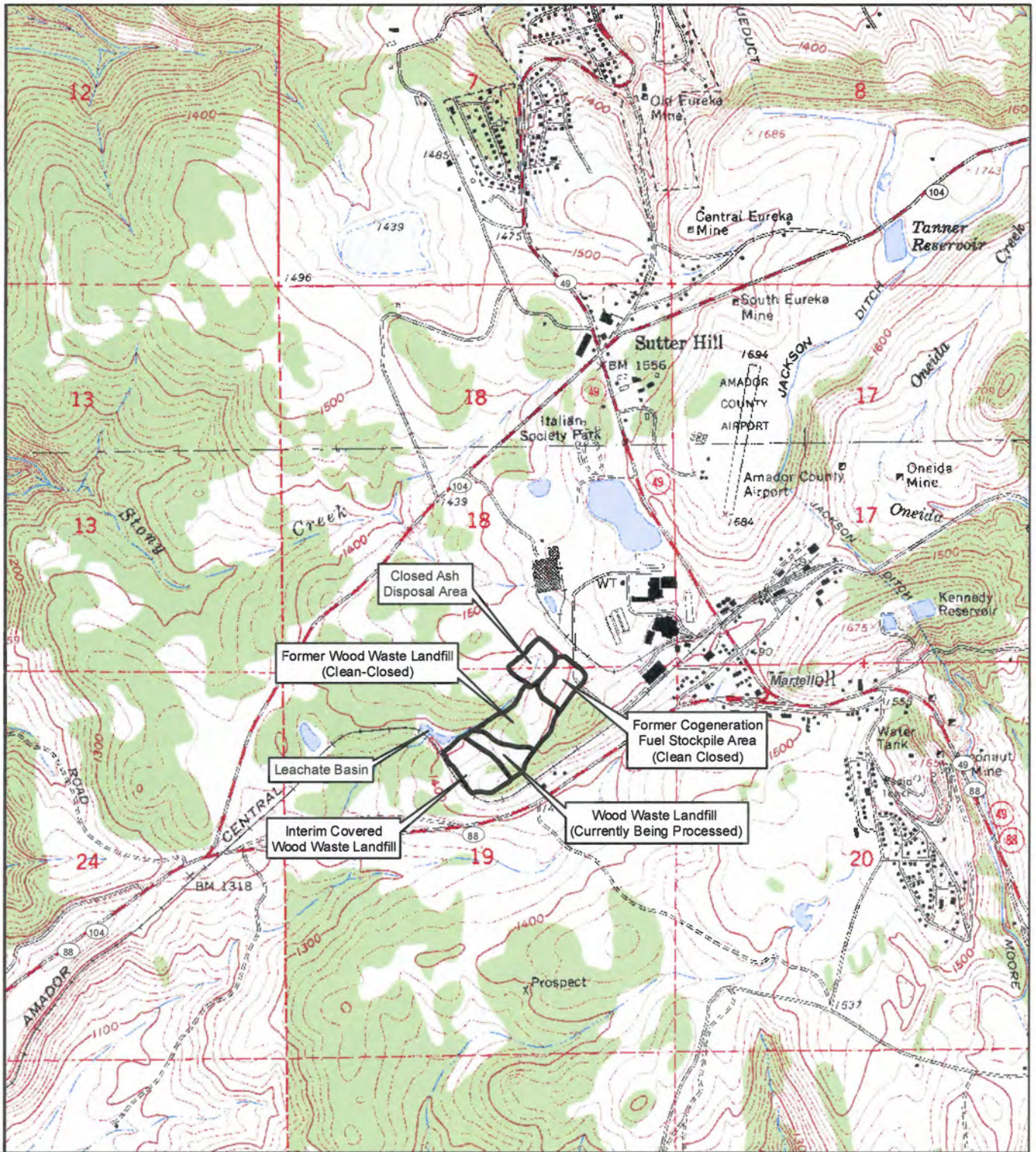
This Order also requires that the Discharger perform a survey of the remaining wood waste volume; clean close the landfill at a rate of a three year average of 55,000 cubic yards per year; and submit verification of clean closure of the entire wood waste landfill.

Leachate Basin

The Leachate Basin is located adjacent to the northwest toe of the Wood Waste Landfill and down gradient of the Ash Disposal Area. Leachate from the Wood Waste Landfill, run-off from the Ash Disposal Area, and sediment from the Ash Disposal Area, have discharged into the Leachate Basin. The Discharger states that currently only leachate from the Wood Waste Landfill, seeps, and groundwater discharge into the Leachate Basin. Groundwater monitoring well B-14, a corrective action monitoring well, is hydraulically down gradient of the Leachate Basin, and extends through the uppermost aquifer. As reported by the Discharger, head gradient between the leachate basin and monitoring well B-14 consistently indicates that well B-14 is in hydraulic communication with the Leachate Basin and it appears groundwater flows into it. These WDRs require that the Leachate Basin will be closed after the Wood Waste Landfill is clean-closed.

Monitoring and Reporting Program

This Order includes a monitoring and reporting program which will begin by March 2014. Monitoring required in Title 27 for evaluation, detection and corrective action will include groundwater sampling, surface water sampling, sampling of the leachate basin, and sampling of leachate within the drainage course prior to reaching the leachate basin. In addition, prior to the anticipated rainy season, the Discharger must conduct a facility inspection to assess the condition of the monitoring system. Reporting must be made both semi-annually and annually.



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California



APPROXIMATE SCALE IN FEET

0 1,000 2,000



0 300 600

APPROXIMATE SCALE IN METERS

Basemap modified from U.S. Geologic Survey (USGS)
Topographic quadrangles: Amador City and Jackson, CA.

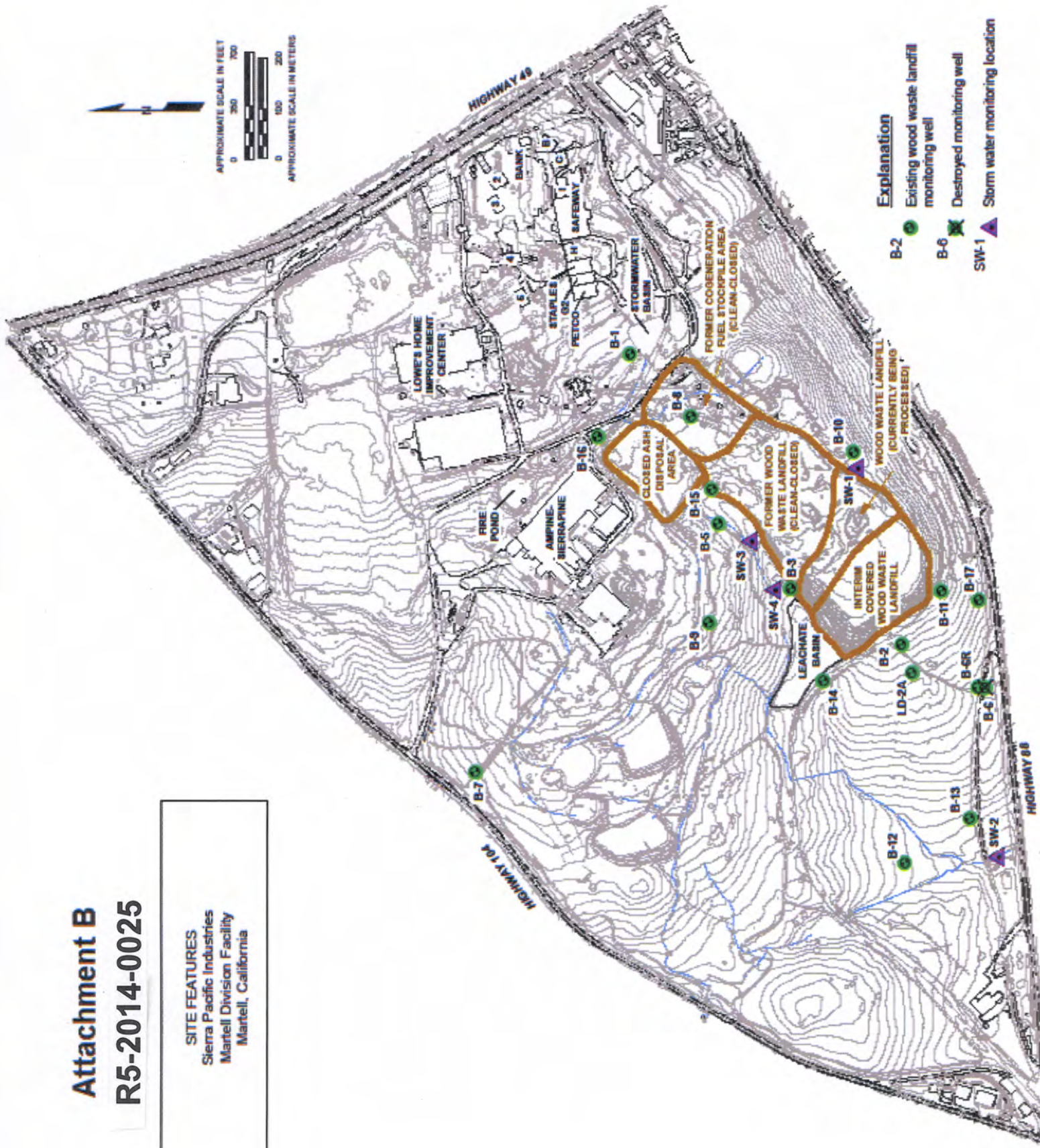
SITE LOCATION MAP
Sierra Pacific Industries
Martell Division Facility
Martell, California

Attachment A
R5-2014-0025

Attachment B

R5-2014-0025

SITE FEATURES
 Sierra Pacific Industries
 Martell Division Facility
 Martell, California



- Explanation**
- B-2 Existing wood waste landfill monitoring well
 - B-6 Destroyed monitoring well
 - SW-1 Storm water monitoring location