

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2016-XXXX

WASTE DISCHARGE REQUIREMENTS

FOR

**SHASTA RENEWABLE REOURCES LLC  
AND  
ANDERSON PLAN LLC**

**ANDERSON BIOMASS PLANT  
SHASTA COUNTY**

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

1. On 18 October 2010, Kiara Solar submitted a Report of Waste Discharge (RWD) to apply for Waste Discharge Requirements (WDRs) for an existing cogeneration plant located in Anderson, Shasta County, as shown on Attachment A. Updated RWD addendums were submitted by Shasta Renewable Resources LLC on 28 August 2013 and 9 January 2014.
2. Shasta Renewable Resources LLC and Anderson Plant LLC (hereafter "Discharger") currently owns and operates the Anderson Biomass Plant (Facility), formerly known as Kiara Solar, and is responsible for compliance with these Waste Discharge Requirements (WDRs). Both entities are subsidiaries of White Oak Global Advisors LLC.
3. The Facility is located at 6309 Highway 273 in Anderson, Shasta County (Section 9, T20N, R4W, MDB&M). The Facility occupies Assessor's Parcel Numbers (APN) 050-110-020, 050-110-022, and 050-010-017, as shown on Attachment B, which is attached hereto and made part of this Order by reference.

**Existing Facility and Discharge**

4. The Facility consists of a Zurn 160 MM Btu/hour, fixed-grate, wood fired boiler previously operated as part of the Wheelabrator Hudson Energy Company, Inc. cogeneration facility until ceasing its operation on 13 October 2013.
5. The boiler is used to drive a steam turbine to generate approximately 6 megawatts (MW) of electrical power, and also provides steam to existing drying kilns operated by Siskiyou Forest Products.
6. The boiler combusts a maximum of 192 bone-dry-tons (BDT)/day of a fuel blend consisting of agricultural waste, mill wood waste, in-forest and biomass waste, and clean urban wood waste. Auxiliary natural gas combustion using an existing low-NOx

burner is also used for startup, shutdown, and flame stabilization. Co-firing with natural gas is not intended at this Facility.

7. Facility effluent water is obtained from two onsite industrial supply wells, Production Wells No. 1 and 2. The following table summarizes source water character from the Production Wells collected in February and May 2011.

Table 1: Source Water Characterization

Constituent	Units	Concentrations	
		Well #1 5/26/11	Well #2 2/10/11
pH	S.U.	6.71	7.42
Electrical Conductivity	umhos/cm	369	720
Total Dissolved Solids	mg/L	-	433
Turbidity	NTU	0.51	8.6
Aluminum, Total	ug/L	<26	68.6
Arsenic, Total	ug/L	<0.61	7.5
Cadmium, Total	ug/L	<0.09	1.27
Chromium, Total	ug/L	<0.82	0.7
Copper, Total	ug/L	1.8	6
Manganese, Total	ug/L	430	4,770
Mercury, Total	ug/L	<0.034	<0.07
Nickel, Total	ug/L	4.8	10.1
Selenium, Total	ug/L	<0.36	<0.4
Silver, Total	ug/L	<0.075	<0.10
Thallium, Total	ug/L	<0.081	<0.2
Zinc, Total	ug/L	7.6	11.7

8. Wastes generated from the Facility include domestic wastewater, cooling tower blow down, boiler blow down, reverse osmosis (RO) reject water, bearing cooling water, steam condensate, wood fly and bottom ash, used oil, and stormwater runoff.
9. Domestic wastewater is routed to an onsite 10,000 gallon septic tank. There is no discharge of domestic wastewater onsite. Wastewater stored in the onsite septic tanks is periodically pumped out when necessary.
10. Boiler blowdown, RO reject and spent bearing-cooling water is routed to the cooling-tower basin and is used in the recirculation cooling tower water system. A portion of

the cooling tower blowdown is bled off and routed to a wastewater oil-water separation sump, and then pumped via underground pipe to infiltration trenches. A process flow diagram is included in Attachment C.

11. Wastewater is discharged to onsite infiltration trenches at a rate of approximately 28,000 gallons per day (gpd) or about 20 gallons per minute (gpm).
12. The effluent character from 2012 to 2014 is summarized in the following table.  
 Table 2: Effluent Characterization

Constituent		Units	Min.	Max.	Avg.
pH		S.U.	7.25	9.48	8.22
Electrical Conductivity		umhos/cm	171	3,020	788
Total Dissolved Solids		mg/L	180	13,000	1,019
Turbidity		NTU	0.21	51	5.76
Aluminum,	Total	ug/L	<14.0	8,900	716
Arsenic,	Total	ug/L	12.0	18.0	14.3
Cadmium,	Total	ug/L	0.20	2.7	1.30
Chromium,	Total	ug/L	1.80	31	10.13
Copper,	Total	ug/L	1.8	650	182
Manganese,	Total	ug/L	49	3,500	487
Mercury,	Total	ng/L	0.0087	0.048	0.023
Nickel,	Total	ug/L	6.6	7.7	7.2
Selenium,	Total	ug/L	<0.19	1.7	0.64
Silver,	Total	ug/L	<0.10	0.28	0.23
Thallium,	Total	ug/L	<0.10	<1.0	--
Zinc,	Total	ug/L	7.6	700	192

13. Effluent from the facility is transferred via a 575 foot, 4 inch diameter steel pipe that runs from the facility to a distribution box before being discharged to one of two infiltration trenches. Details of the wastewater disposal system are included in Attachment D.
14. In April 2012 SRR constructed a series of 5 infiltration trenches approximately 85 feet (ft) long excavated to a depth of approximately 17 feet below ground surface (bgs). SRR began discharging to these trenches during startup in August 2012. Due to the low permeability of underlying soils this infiltration trench failed in October 2012 allowing effluent to surface at grade.

15. Due to the failure of the primary infiltration trenches SRR excavated and installed one additional, replacement infiltration trench approximately 100 feet long excavated to a depth of 32 ft bgs in October 2012.
16. Effluent discharge can be cycled between the old and new infiltration trenches through a distribution box, but is usually sent to the newer, deeper trench.
17. Oil separated within the wastewater oil-water separator sump is removed by the use of absorbent material and is collected and disposed of offsite at an approved disposal facility along with other used oil. This Order requires the Discharger to submit an updated Ash Management and Waste Disposal Plan that addresses wastes such as from the oil-water separator.
18. Wood fly and bottom ash is collected onsite and temporarily stored in a concrete bunker or deposited into an ash collection silo. Ash material is subsequently transferred into haul trucks and is transported offsite for appropriate disposal or reuse in accordance with the facility's Ash Management and Disposal Plan.
19. Stormwater runoff is discharged into the Anderson Cottonwood Irrigation District (ACID) lateral located at the northeast corner of the Facility and into an existing onsite pond. Stormwater discharges are regulated under State Water Board Order 2014-0057-DWQ (NPDES General Permit CAS000001) for discharges associated with industrial activities.

### **Site-Specific Conditions**

20. The facility and infiltration trenches are located at an elevation of approximately 440 feet above mean sea level (MSL) and is relatively flat and level. The site gently slopes to the east toward the Sacramento River, with a steep slope at the eastern edge of the site adjacent to the Sierra Pacific Industries (SPI) ditch.
21. Based upon the Federal Emergency Management Agency's (FEMA) Flood insurance rate map (Community-Panel Number 0603582980F, revised June 16, 2006), most of the site is situated outside of both the 500 year and 100 year floodplains.
22. The site is located in the southern part of the Redding basin, the northern most subbasin of the Sacramento Valley basin. The Redding basin is filled with Tertiary-age sediments that are thickest in the central part of the valley and thin to the north, east, and west. The site is underlain by low permeability silty sand to sandy silt units, which in turn are underlain by a sequence of gravels and cobbles interbedded with clay layers beginning at a depth of approximately 30 feet bgs and extending to a maximum depth of approximately 65 to 70 bgs. Underlying this coarse-grained zone is a finer-grained interval described as mudstone or hard brown clay and cemented gravel to a depth of approximately 148 feet bgs. Beneath the finer-grained zone is another coarse-grained interval of gravels and boulders to a depth of approximately

285 to 300 feet bgs. Underlying this interval bedrock consisting of volcanic rock or cemented conglomerate to a depth of approximately 305 to 340 feet bgs.

23. The average annual precipitation for the area is approximately 38 inches. The 100 year, 365-day precipitation is approximately 61 inches. A 24-hour, 100 year storm event for this area is approximately 7.2 inches. The annual pan evaporation rate is approximately 60 inches.
24. The surrounding land use in the vicinity of the property consists of industrial/commercial property to the southwest, residential to the south and north, riparian to the northeast, and agricultural to the northwest.

### **Groundwater Conditions**

25. Groundwater supply wells in the vicinity of the site obtain their water from the Tehama and Tuscan Formations at depths that range from approximately 100 to 500 feet bgs. Groundwater within these formations generally moves from west to east towards the Sacramento River.
26. Shallow groundwater beneath the site is influenced locally from leakage from the Anderson Cottonwood Irrigation District (ACID) canal located west of the site and Highway 273. The ACID canal contributes water to the subsurface that then migrates northeastward and eastward towards the Sierra Pacific Industries site (SPI). A series of man-made drainage channels on the property to the west of the site intercepts shallow groundwater that has seeped from the canal, and transports water to the east side of Hwy 273 by a series of culverts. Water in the ditch on the east side of Hwy 273 then flows north and south. The water in the ditch that moves south eventually seeps into the subsurface near the Siskiyou Forest Products (SFP) site. Some of the shallow groundwater beneath the site is intercepted by the SPI drainage system in the southwestern part of the SPI site. This water flows directly into an SPI pond through underground piping. The existing pond at the facility also intercepts shallow groundwater, which flows through the pond and eventually into the SPI ditch.
27. Historically there have been up to eight groundwater monitoring wells and one piezometer installed at the facility. Monitoring Wells MW-1 through MW-3 are installed adjacent to the current facility east of the infiltration trenches. Monitoring Well MW-4 was located just east of the infiltration trenches, however was damaged and subsequently abandoned during infiltration trench construction activities. Monitoring Wells MW-5 through MW-8 are located in the vicinity of the infiltration trenches and serve as compliance monitoring points for effluent discharges. The trench piezometer is located adjacent to the 100 foot long replacement infiltration trench.
28. Monitoring Wells MW-1 through MW-3 were installed by previous owners of the facility and were used as compliance monitoring points for previous operations. Due to their

location away from the infiltration trench discharge locations, monitoring of these wells is not currently being conducted.

29. Monitoring data collected from Monitoring Wells MW-5 through MW-8 indicates that groundwater beneath the site ranges from 7.65 to 29.78 feet bgs. The groundwater hydraulic gradient beneath the site is to the southeast at approximately 0.004 feet/foot. The groundwater gradient beneath the site varies locally from the regional groundwater gradient due to influences from the surrounds ACID canal and SPI drainage channels. The regionally shallow groundwater gradient has been reported to be generally to the north at approximately 0.04 feet/foot.
30. Monitoring Wells MW-5 through MW-8, and trench piezometer serve as monitoring points for effluent discharges. Monitoring Well MW-8 serves as the up gradient monitoring point. Monitoring Wells MW-5, MW-6, and MW-7 are cross and down gradient monitoring points. The piezometer is located adjacent to the replacement infiltration trench. The currently monitoring well network is provided on Attachment E.
31. Background water quality from Monitoring Well MW-8 has been collected from the facility since late 2013. Water quality data indicates that background water quality is of relatively high quality. The following table summarizes water quality data collected between 2013 and 2015.

Table 3: Background Groundwater Quality

Constituent	Units	Min.	Max.	Avg.	WQO
pH	S.U.	6.48	7.18	6.78	6.5-8.5 <sup>2</sup>
Electrical Conductivity	umhos/cm	220	517	300	900 <sup>2</sup>
Total Dissolved Solids	mg/L	110	330	203	500 <sup>2</sup>
Turbidity	NTU	0.27	1.72	0.74	1.0 <sup>1</sup>
Aluminum, Total	ug/L	<14	59	22	1,000 <sup>1</sup>
Arsenic, Total	ug/L	<0.7	0.75	0.42	10 <sup>1</sup>
Cadmium, Total	ug/L	<0.11	<0.11	-	5 <sup>1</sup>
Chromium, Total	ug/L	<0.50	1.4	0.54	50 <sup>1</sup>
Copper, Total	ug/L	0.84	1.90	1.31	1,300 <sup>1</sup>
Manganese, Total	ug/L	<24	48	-	50 <sup>2</sup>
Mercury, Total	ng/L	47	51	49	50 <sup>3</sup>
Nickel, Total	ug/L	1.5	3.7	2.5	100 <sup>1</sup>
Selenium, Total	ug/L	<0.19	<0.19	-	50 <sup>1</sup>
Silver, Total	ug/L	<0.10	<0.10	-	100 <sup>2</sup>
Thallium, Total	ug/L	<0.10	<0.10	-	2 <sup>1</sup>
Zinc, Total	ug/L	2.7	7.3	4.6	5,000 <sup>1</sup>

<sup>1</sup> California Primary Maximum Contaminant Level.  
<sup>2</sup> California Secondary Maximum Contaminant Level.  
<sup>3</sup> California Toxics Rule Criteria (USEPA) Sources of Drinking Water.

32. While Monitoring Well MW-5 and the trench piezometer are useful monitoring points, they are inappropriate compliance wells due to their close proximity to the replacement infiltration trench. Data obtained from these locations are likely to represent near discharge conditions. As such, this Order requires additional downgradient monitoring well(s) to appropriately monitor downgradient groundwater pollutant concentrations.

Groundwater quality data has been collected from facility Monitoring Wells MW-5, MW-6, and MW-7 since 2011. The following table summarizes water quality data between 2011 and 2015. Data collected from Monitoring Well MW-5 and the trench piezometer was not included because it is likely to be more characteristic of effluent discharge due to its proximity to the replacement infiltration trench. Monitoring Wells MW-6 and MW-7 are cross and downgradient monitoring wells. Groundwater quality data for the facility is summarized in the following table.

Average concentrations are below the water quality objectives with the exception of manganese. However the manganese concentrations is total recoverable instead of dissolved. Dissolved phase concentrations are not available. This order requires dissolved phase monitoring. Total concentrations are not appropriate for comparison to Water Quality Objectives.

Table 4: Groundwater Quality (MW-6 and MW-7)

Constituent	Units	Min.	Max.	Avg.	WQO
pH	S.U.	6.31	7.14	6.69	6.5-8.5 <sup>2</sup>
Electrical Conductivity	umhos/cm	43	1,369	445	900 <sup>2</sup>
Total Dissolved Solids	mg/L	140	1,000	363	500 <sup>2</sup>
Turbidity	NTU	0.10	2.21	0.5	1.0 <sup>1</sup>
Aluminum, Total	ug/L	<14	15	7.5	1,000 <sup>1</sup>
Arsenic, Total	ug/L	<0.7	1.3	0.59	10 <sup>1</sup>
Cadmium, Total	ug/L	<0.11	0.86	0.33	5 <sup>1</sup>
Chromium, Total	ug/L	<0.5	2.1	0.5	50 <sup>1</sup>
Copper, Total	ug/L	0.8	4.9	2.23	1,300 <sup>1</sup>
Manganese, Total	ug/L	<0.20	1,900	745	50 <sup>2</sup>
Mercury, Total	ng/L	<0.047	80	16	50 <sup>3</sup>
Nickel, Total	ug/L	1.40	40	12	100 <sup>1</sup>
Selenium, Total	ug/L	<0.19	0.42	0.11	50 <sup>1</sup>
Silver, Total	ug/L	<0.10	<0.10	-	100 <sup>2</sup>

Thallium,	Total	ug/L	<0.10	0.23	0.06	2 <sup>1</sup>
Zinc,	Total	ug/L	0.85	11	3.63	5,000 <sup>1</sup>

<sup>1</sup> California Primary Maximum Contaminant Level.

<sup>2</sup> California Secondary Maximum Contaminant Level.

<sup>3</sup> California Toxics Rule Criteria (USEPA) Sources of Drinking Water.

33. The two onsite Production Wells No. 1 and 2 are located approximately 600 feet downgradient of both infiltration trenches with terminal depths of at least 275 feet bgs. Based upon current information the Discharger will operate one of these two wells at an extraction rate of approximately 300 gallons per minute. The resulting steady state capture zone produced by one of these wells will likely intercept any effluent being discharged from the infiltration trenches. Groundwater affected by the discharge will be captured and will not extend beyond the limits of the facility.

### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

34. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised June 2015* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to California Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
35. Local surface drainage is to the Sacramento River. The beneficial uses of Sacramento River (Shasta Dam to the Colusa Basin Drain), as stated in the Basin Plan, are: municipal and domestic supply (MUN); agricultural irrigation and stock watering (AGR); industrial service and power supply (IND and POW); non-contact and body contact recreation, including canoeing and rafting (REC-1 and REC-2); warm and cold freshwater aquatic habitat (WARM and COLD); warm and cold water fish migration habitat (MIGR); warm and cold spawning, reproduction, and/or early development habitat (SPWN); and wildlife habitat (WILD), and navigation (NAV).
36. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
37. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
38. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.

39. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
40. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.
41. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
42. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700  $\mu\text{mhos/cm}$ . There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000  $\mu\text{mhos/cm}$  if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

### **Antidegradation Analysis**

43. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
  - a. The degradation is consistent with the maximum benefit to the people of the state.
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses.
  - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
  - d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

44. Degradation of groundwater by some of the typical waste constituents associated with discharges from a cogeneration facility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The Discharger's operation provides 14 full time jobs and supports employment of approximately 20 additional people that support operations at the facility to produce electrical power and steam for existing drying kilns operated by Siskiyou Forest Products. Power generated at the facility is a green renewable energy source for the community. The facility also provides controlled burning of biomass waste which reduces air pollution. The burning of biomass material additionally reduces green waste material that would otherwise be disposed of in municipal solid waste landfills. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing limited groundwater degradation that may occur pursuant to this Order.
45. The Discharger has been monitoring groundwater quality at the site since 2011. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this facility will be based on background groundwater quality.
46. The Facility's use of infiltration trenches and Facility operations as described in these Findings and compliance with the Prohibitions, Limitations, and Specifications contained in this Order constitute Best Practicable Treatment or Controls (BPTC) of the discharge.
47. The discharge and the potential for groundwater degradation allowed in this Order is consistent with the Antidegradation Policy because; (a) the limited degradation allowed by this Order will not result in water quality less than the water quality objectives, or unreasonably affect present and anticipated beneficial uses, (b) the Discharger has implemented BPTC to minimize degradation, and (c) the limited degradation is of the maximum benefit to the people of the State.

#### **Other Regulatory Considerations**

48. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
49. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
  - a. Category 2 threat to water quality: "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 [as 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.”

50. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090 states in part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
- (2) the discharge is in compliance with the applicable water quality control plan; and
- (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

(c) Soil Amendments - Use of nonhazardous decomposable waste as a soil amendment pursuant to applicable best management practices, provided that RWQCBs may issue waste discharge or reclamation requirements for such use.

51. Wood Ash. Pursuant to state and federal regulations wood ash, classified as non-hazardous solid waste, may be beneficially reused as an agricultural soil amendment, or other appropriate use. This Order does not authorize storage, transportation, or disposal of ash or other wastes characterized as hazardous wastes. Appropriate separate regulatory coverage must be secured for such activities.
52. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 pursuant to, section 20090(b) because they are discharges of wastewater to land and:
- i. The Central Valley Water Board is issuing WDRs.

- ii. This Order prescribes requirements that will ensure compliance with the Basin Plan; and
- iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.

53. The U.S. EPA published *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (hereafter "Unified Guidance") in 2009. As stated in the Unified Guidance, the document:

...is tailored to the context of the RCRA groundwater monitoring regulations ... [however, t]here are enough commonalities with other regulatory groundwater monitoring programs ... to allow for more general use of the tests and methods in the Unified Guidance... Groundwater detection monitoring involves either a comparison between different monitoring stations ... or a contrast between past and present data within a given station... The Unified Guidance also details methods to compare background data against measurements from regulatory compliance points ... [as well as] techniques for comparing datasets against fixed numerical standards ... [such as those] encountered in many regulatory programs.

The statistical data analysis methods in the Unified Guidance are appropriate for determining whether the discharge complies with Groundwater Limitations of this Order.

54. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The Discharger is currently enrolled under this General Permit and has coverage under NPDES General Permit CAS000001.

55. Water Code section 13267(b)(1) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2016-XXXX (MRP) are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges waste subject to this Order.

56. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
57. The action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with the California Code of Regulations, title 14, section 15301.
58. A Mitigated Negative Declaration was certified by the Shasta County Air Pollution Control Board on 10 August 2010 in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The Mitigated Negative Declaration describes the project as the reactivation of an existing cogeneration plant.
59. The Mitigated Negative Declaration evaluated the potential impacts to groundwater quality and found that compliance with WDRs will ensure that there would be no impacts to water quality. Compliance with this Order will mitigate or avoid significant impacts to water quality. No other specific mitigations associated with the Central Valley Water Board were required by the Mitigated Negative Declaration.
60. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

### Public Notice

61. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
62. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
63. All comments pertaining to the discharge were heard and considered in a public hearing.

**IT IS HEREBY ORDERED** that pursuant to Water Code sections 13263 and 13267, the Discharger, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

### **A. Discharge Prohibitions**

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. Discharge of waste classified as 'designated', as defined in CWC Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
5. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
6. Discharge of toxic substances into the wastewater treatment system or land application area such that biological treatment mechanisms are disrupted is prohibited.

### **B. Flow Limitations**

1. Effectively immediately, effluent discharges to the wastewater treatment system shall not exceed of 28,800 gallons per day (based on 20 gallons per minute).

### **C. Discharge Specifications**

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

#### **D. Groundwater Limitations**

Release of waste constituents from any portion of the facility shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background quality for the specified constituents, whichever is greater:

1. For all compliance monitoring wells, contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations.
2. For all compliance monitoring wells, contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

#### **E. Solids Disposal Specifications**

Solids as used in this document mean non-hazardous bottom or fly ash waste material that is a result of the combustion of biomass material. Residual solids refers to non-hazardous ash material removed from the onsite concrete bunker or and ash collection silo.

1. Solid waste shall be removed from the onsite concrete bunker and ash collection silo as needed to ensure optimal operation and adequate storage capacity.
2. Any handling and storage of waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.
3. Solid waste removed from the site shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2 and in accordance with an approved Ash Management and Disposal Plan. Removal for reuse as animal feed, or land disposal at facilities (i.e., landfills, composting facilities, soil amendment sites operated in accordance with valid waste discharge requirements issued by a Regional Water Board) will satisfy this specification.

4. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

## F. Provisions

1. The following reports shall be submitted pursuant to CWC section 13267 and shall be prepared as described in Provision F.4:
  - a. By **31 July 2016** the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan* that proposes at least one additional monitoring well to ensure adequate monitoring downgradient of existing infiltration trenches. The workplan shall be prepared in accordance with, and include the items listed in, the first section of Attachment F: "Requirements for Monitoring Well Installation Workplans and Monitoring Well Installation Reports", which is attached hereto and made part of this Order by reference. The groundwater monitoring well(s) shall be designed to yield samples representative of the uppermost portion of the first aquifer underlying the infiltration trenches.
  - b. By **3 months** following Central Valley Water Board approval of the Groundwater Monitoring Well Installation Work Plan, the Discharger shall submit a *Groundwater Monitoring Well Installation Report* for any new groundwater monitoring wells constructed to comply with Provision F.1.a. The report shall be prepared in accordance with, and including the items listed in, the second section of Attachment F: "Monitoring Well Workplan and Monitoring Well Installation Report Guidance", which is attached hereto and made part of this Order by reference. The report shall describe the installation and development of all new monitoring wells, and explain any deviation from the approved workplan.
  - c. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain any waste constituents in concentrations statistically greater than the Groundwater Limitations of this Order, within 120 days of the request of the Executive Officer, the Discharger shall submit a BPTC Evaluation Workplan that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent that exceeds a Groundwater Limitation. The workplan shall contain a preliminary evaluation of each component of the wastewater treatment, storage and disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year.

- d. Within **90 days of Order Adoption** the Discharger shall submit an updated Ash Management and Waste Disposal Plan. The plan shall describe at a minimum:
  - a. Sources and amount of ash or other wastes generated annually.
  - b. Locations(s) of on-site storage and description of containment area.
  - c. Plans for ultimate disposal or reuse. For landfill disposal, include the present classification of the landfill and the name and location of the landfill.

Non-hazardous fly ash removed from the facility shall be:

- a. Beneficially reused, such as for soil amendment; or
- b. Disposed in a dedicated unit consistent with Title 27, Section 20200(b); or
- c. Disposed in a Class III landfill consistent with Title 27, Section 20220(d).

Any other use shall require approval by the Executive Officer.

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

This Order does not authorize storage, transportation, or disposal of ash or other wastes characterized as hazardous wastes. Appropriate separate regulatory coverage must be secured for such activities.

2. At least **30 days** prior to the restart of the facility the Discharger shall install an effluent flow meter at a location prior to the distribution box for the infiltration trenches. Upon restart of the facility effluent flow monitoring shall be conducted in accordance with MRP R5-2016-XXXX.
3. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.
4. In accordance with 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 for investigations and studies, 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 bear the professional's signature and stamp.

5. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
6. The Discharger shall comply with Monitoring and Reporting Program R5-2016-XXXX which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
7. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are included in Attachment G and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
8. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
9. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.
10. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.

11. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
12. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
13. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
14. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
15. 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 the Central Valley Water Board.
16. 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 and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. 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.
17. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

18. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

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](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 that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on \_\_\_\_\_2016

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PAMELA C. CREEDON, Executive Officer