

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2016-0034

WASTE DISCHARGE REQUIREMENTS

FOR

**SHASTA RENEWABLE RESOURCES LLC
AND
ANDERSON PLANT 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.

- 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

- 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.
- 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.
- 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 is 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 and 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 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 it 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 surrounding 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 a 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 ²
Electrical Conductivity	umhos/cm	220	517	300	900 ²
Total Dissolved Solids	mg/L	110	330	203	500 ²
Turbidity	NTU	0.27	1.72	0.74	1.0 ¹
Aluminum, Total	ug/L	<14	59	22	1,000 ¹
Arsenic, Total	ug/L	<0.7	0.75	0.42	10 ¹
Cadmium, Total	ug/L	<0.11	<0.11	-	5 ¹
Chromium, Total	ug/L	<0.50	1.4	0.54	50 ¹
Copper, Total	ug/L	0.84	1.90	1.31	1,300 ¹
Manganese, Total	ug/L	<24	48	-	50 ²
Mercury, Total	ng/L	47	51	49	50 ³
Nickel, Total	ug/L	1.5	3.7	2.5	100 ¹
Selenium, Total	ug/L	<0.19	<0.19	-	50 ¹
Silver, Total	ug/L	<0.10	<0.10	-	100 ²
Thallium, Total	ug/L	<0.10	<0.10	-	2 ¹
Zinc, Total	ug/L	2.7	7.3	4.6	5,000 ¹

¹ California Primary Maximum Contaminant Level.

² California Secondary Maximum Contaminant Level.

³ 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 ²
Electrical Conductivity	umhos/cm	43	1,369	445	900 ²
Total Dissolved Solids	mg/L	140	1,000	363	500 ²
Turbidity	NTU	0.10	2.21	0.5	1.0 ¹
Aluminum, Total	ug/L	<14	15	7.5	1,000 ¹
Arsenic, Total	ug/L	<0.7	1.3	0.59	10 ¹
Cadmium, Total	ug/L	<0.11	0.86	0.33	5 ¹
Chromium, Total	ug/L	<0.5	2.1	0.5	50 ¹
Copper, Total	ug/L	0.8	4.9	2.23	1,300 ¹
Manganese, Total	ug/L	<0.20	1,900	745	50 ²
Mercury, Total	ng/L	<0.047	80	16	50 ³
Nickel, Total	ug/L	1.40	40	12	100 ¹
Selenium, Total	ug/L	<0.19	0.42	0.11	50 ¹
Silver, Total	ug/L	<0.10	<0.10	-	100 ²
Thallium, Total	ug/L	<0.10	0.23	0.06	2 ¹
Zinc, Total	ug/L	0.85	11	3.63	5,000 ¹

¹ California Primary Maximum Contaminant Level.

² California Secondary Maximum Contaminant Level.

³ 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 R5-2016-0034 (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. Location(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 R5-2016-0034.
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 R5-2016-0034 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
or will be provided upon request.

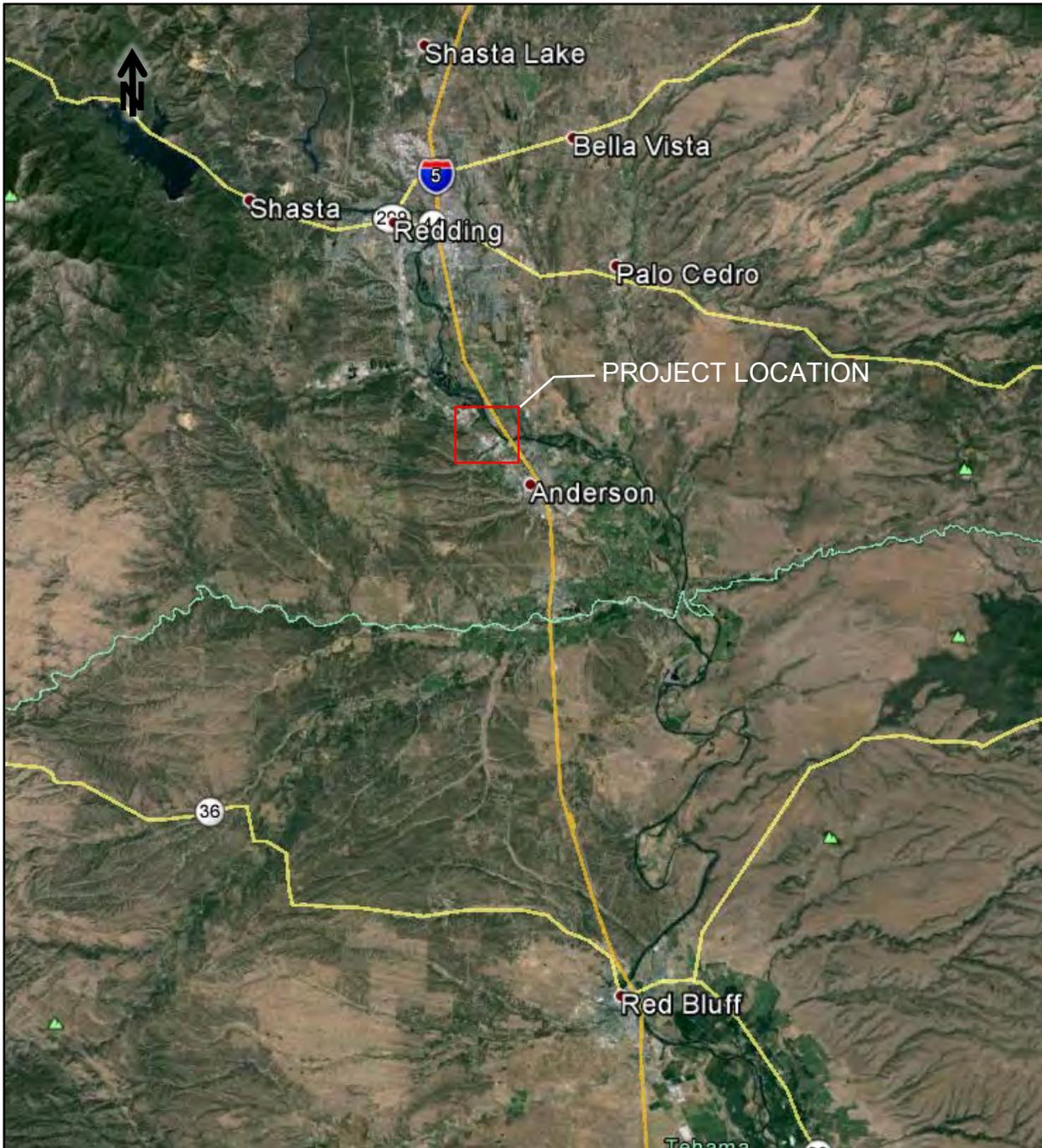
I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 21 April 2016.

Original signed by:

PAMELA C. CREEDON, Executive Officer

SHASTA RENEWABLE RESOURCES LLC AND ANDERSON PLANT LLC
ANDERSON BIOMASS PLANT
SHASTA COUNTY

ATTACHMENT A- LOCATION MAP



DRAWING REFERENCE:
GOOGLE EARTH
MAP DATA: © 2015
GOOGLE
NO SCALE

LOCATION MAP

SHASTA RENEWABLE RESOURCES LLC
AND
ANDERSON PLANT LLC

ANDERSON BIOMASS PLANT
SHASTA COUNTY

SHASTA RENEWABLE RESOURCES LLC AND ANDERSON PLANT LLC
ANDERSON BIOMASS PLANT
SHASTA COUNTY

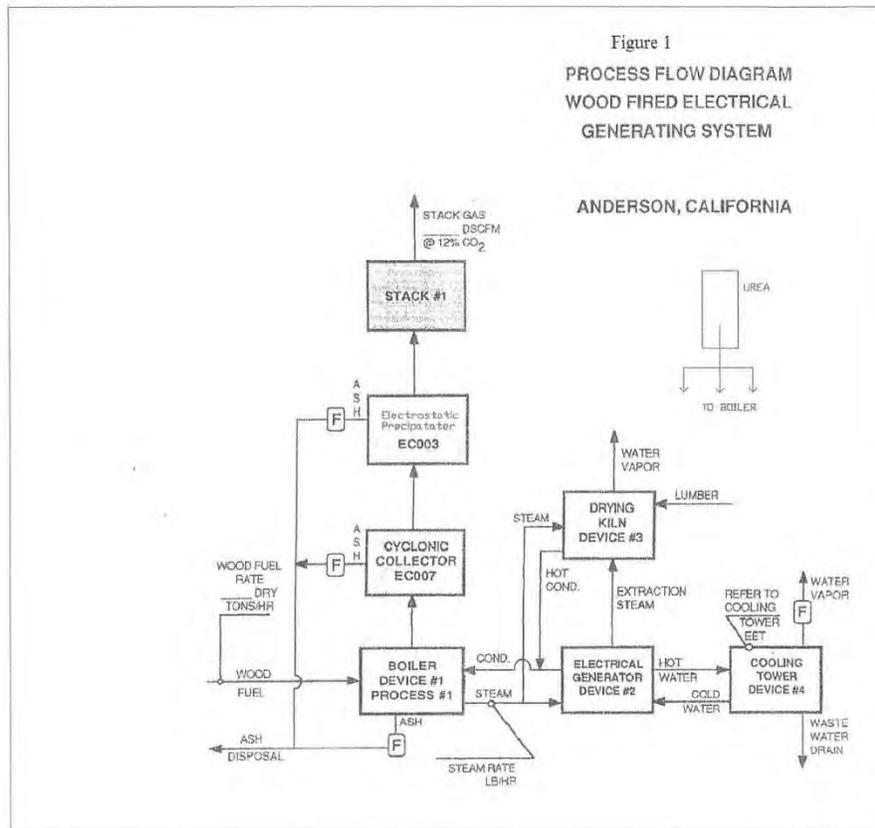
ATTACHMENT B- SITE LAYOUT



DRAWING REFERENCE:
GOOGLE EARTH
MAP DATA: © 2015 GOOGLE
NO SCALE

SITE MAP
SHASTA RENEWABLE RESOURCES LLC
AND
ANDERSON PLANT LLC
ANDERSON BIOMASS PLANT
SHASTA COUNTY

ATTACHMENT C – PROCESS FLOW DIAGRAM



Sheet 5 of 15	Drawing No.	File No.	REVISIONS		Customer: Biomass Plant 6275 Highway 273 Anderson, CA, 96007	Designed NSINGH
			Date	Description		Approved
					5352 Clark Ave Dublin, CA 94568 PH: 925-360-7777	Checked
						Approved _____ Date _____ Title _____ Job Class _____



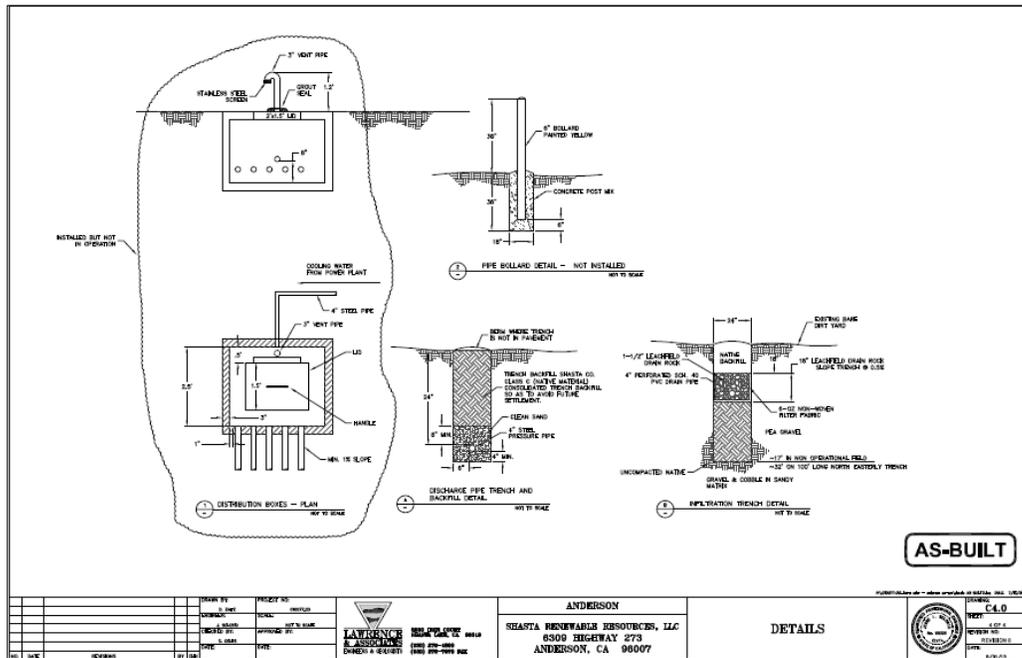
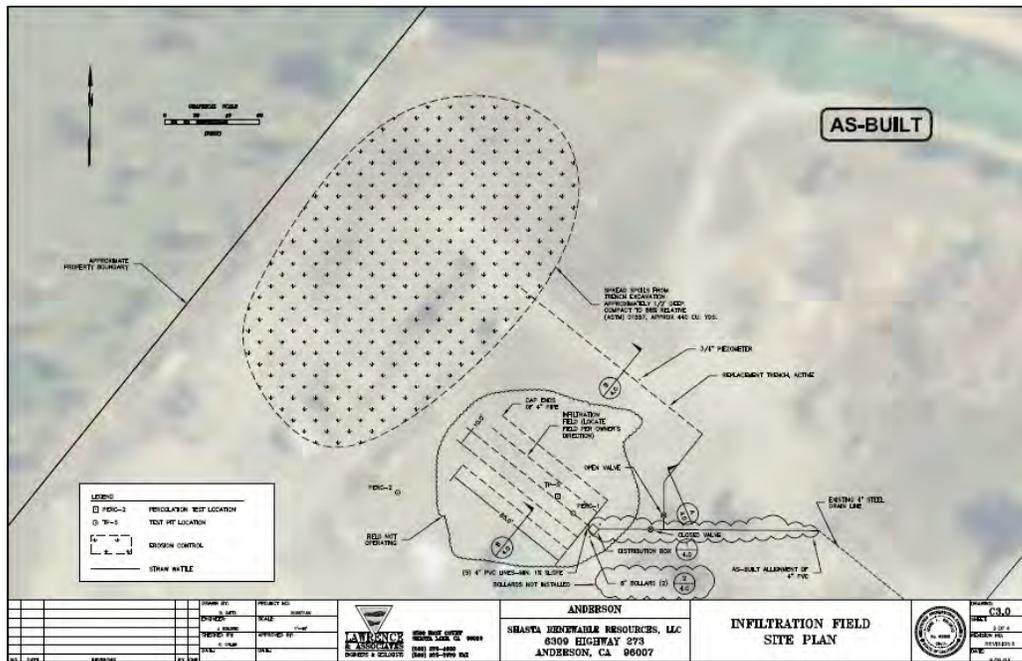
PROCESS FLOW DIAGRAM

SHASTA RENEWABLE RESOURCES LLC
 AND
 ANDERSON PLANT LLC

ANDERSON BIOMASS PLANT
 SHASTA COUNTY

SHASTA RENEWABLE RESOURCES LLC AND ANDERSON PLANT LLC
 ANDERSON BIOMASS PLANT
 SHASTA COUNTY

ATTACHMENT D – WASTEWATER DISPOSAL SYSTEM



PROCESS FLOW DIAGRAM

SHASTA RENEWABLE RESOURCES LLC AND ANDERSON PLANT LLC

ANDERSON BIOMASS PLANT
 SHASTA COUNTY

SHASTA RENEWABLE RESOURCES LLC AND ANDERSON PLANT LLC
ANDERSON BIOMASS PLANT
SHASTA COUNTY

ATTACHMENT E – MONITORING WELL NETWORK



DRAWING REFERENCE:
GOOGLE EARTH
MAP DATA: © 2015
GOOGLE
NO SCALE

MONITORING WELL NETWORK
SHASTA RENEWABLE RESOURCES LLC
AND
ANDERSON PLANT LLC
ANDERSON BIOMASS PLANT
SHASTA COUNTY

ATTACHMENT F
REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND
MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approves the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 - Monitoring Well Installation Workplan and
Groundwater Sampling and Analysis Plan

The monitoring well installation workplan shall contain the following minimum information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals (if appropriate) and logging methods

C. Monitoring Well Design (in narrative and/or graphic form):

- Diagram of proposed well construction details
 - Borehole diameter
 - Casing and screen material, diameter, and centralizer spacing (if needed)
 - Type of well caps (bottom cap either screw on or secured with stainless steel screws)
 - Anticipated depth of well, length of well casing, and length and position of perforated interval
 - Thickness, position and composition of surface seal, sanitary seal, and sand pack
 - Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

- Method of development to be used (i.e., surge, bail, pump, etc.)
- Parameters to be monitored during development and record keeping technique
- Method of determining when development is complete
- Disposal of development water

- E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):
Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
Datum for survey measurements
List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. Appendix: Groundwater Sampling and Analysis Plan (SAP)

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
 - o General sampling techniques
 - o Record keeping during sampling (include copies of record keeping logs to be used)
 - o QA/QC samples
- Chain of Custody
- Sample handling and transport

SECTION 2 - Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:

Purpose of the well installation project
Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells
Number of monitoring wells installed and copies of County Well Construction Permits

Topographic map showing facility location, roads, surface water bodies
Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

On-site supervision of drilling and well installation activities

Drilling contractor and driller's name

Description of drilling equipment and techniques

Equipment decontamination procedures

Soil sampling intervals and logging methods

Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no casing or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form):

Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

E. Well Development:

Date(s) and method of development

How well development completion was determined

Volume of water purged from well and method of development water disposal

Field notes from well development should be included in report

F. Well Survey (survey the top rim of the well casing with the cap removed):

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix.

INFORMATION SHEET

INFORMATION SHEET ORDER R5-2016-0034
SHASTA RENEWABLE RESOURCES LLC
ANDERSON BIOMASS FACILITY
SHASTA COUNTY

Background

Shasta Renewable Resources LLC (here after Discharger), owns the existing cogeneration plant (Facility) located at 6309 Highway 273 in Anderson, Shasta County. The facility is not currently regulated by any Waste Discharge Requirements. The Facility submitted a Report of Waste Discharge (RWD) in 18 October 2010 discharge effluent from the Facility.

The Facility is a wood fired cogeneration plan that utilizes steam to drive a steam turbine that generates approximately 6 megawatts of electrical power, and also provides steam to an existing drying kilns operated by Siskiyou Forest Products.

Facility effluent is obtained from two onsite industrial supply wells, Production Wells No. 1 and 2. The following table summarizes source water characterization 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
Specific Conductance	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

The facility discharges approximately 28,000 gallons per day (GPD) or about 20 gallons per minute (GPM) of effluent that consists of boiler blow down, reverse osmosis (RO) reject, spent bearing cooling water, and cooling tower blow down which is discharged to two onsite infiltration trenches. 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

Effluent from the facility is transferred via a 575 foot, 4 inch diameter steel pipe that runs from the facility to the distribution box before being discharged to one of two infiltration trenches or fields. The first infiltration trench consists of a series of 5 infiltration trenches approximately 85 feet long excavated to a depth of approximately 17 feet bgs. Due to low permeability of underlying soils this field was not sufficient to accommodate wastewater flows. As a result a second infiltration trench, approximately 100 feet long, excavated to a depth of approximately 32 feet bgs was constructed. Effluent can be cycled between these two infiltration trenches, however it is generally sent to the newer deeper infiltration trench.

Solid waste generated at the facility consisting of absorbent material and bottom and fly ash is collected and removed from the facility and is either disposed of at a permitted disposal facility or is used or repurposed in accordance with the facility's Ash Management and Disposal Plan.

Groundwater Conditions

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. Regionally shallow groundwater gradient has been reported to be generally to the north at approximately 0.04 feet/foot. Groundwater in the area is also influenced locally from leakage from the Anderson Cottonwood Irrigation District (ACID) canal located west of the site and man made drainage channels operated by Siskiyou Forest Products and Sierra Pacific Industries located to the east and southeast of the Facility.

Groundwater quality data has been collected from facility Monitoring Wells since 2011. Monitoring Wells MW-5 through MW-8, and a 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.

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

¹ California Primary Maximum Contaminant Level.

² California Secondary Maximum Contaminant Level.

³ California Toxics Rule Criteria (USEPA) Sources of Drinking Water.

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 ²
Electrical Conductivity	umhos/cm	43	1,369	445	900 ²
Total Dissolved Solids	mg/L	140	1,000	363	500 ²
Turbidity	NTU	0.10	2.21	0.5	1.0 ¹
Aluminum, Total	ug/L	<14	15	7.5	1,000 ¹
Arsenic, Total	ug/L	<0.7	1.3	0.59	10 ¹
Cadmium, Total	ug/L	<0.11	0.86	0.33	5 ¹
Chromium, Total	ug/L	<0.5	2.1	0.5	50 ¹
Copper, Total	ug/L	0.8	4.9	2.23	1,300 ¹
Manganese, Total	ug/L	<0.20	1,900	745	50 ²
Mercury, Total	ng/L	<0.047	80	16	50 ³
Nickel, Total	ug/L	1.40	40	12	100 ¹
Selenium, Total	ug/L	<0.19	0.42	0.11	50 ¹
Silver, Total	ug/L	<0.10	<0.10	-	100 ²
Thallium, Total	ug/L	<0.10	0.23	0.06	2 ¹
Zinc, Total	ug/L	0.85	11	3.63	5,000 ¹

¹ California Primary Maximum Contaminant Level.

² California Secondary Maximum Contaminant Level.

³ California Toxics Rule Criteria (USEPA) Sources of Drinking Water.

Basin Plan, Beneficial Uses, and Regulatory Considerations

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. 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.

Antidegradation

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 must be based on existing background groundwater quality.

The discharge and the potential for groundwater degradation allowed in this Order is consistent with the Antidegradation Policy since; (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.

CEQA

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.

Title 27

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.

Proposed Order Terms and Conditions

Discharge Prohibitions, Specifications and Provisions

The proposed Order would prohibit discharge of wastes to surface waters or surface water drainage courses.

The proposed Order would set a maximum daily flow limit of 28,800 gallons per day (20 gallons per minute).

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated beneficial uses of groundwater.

The proposed Order includes provisions that require the Discharger to submit a Groundwater Monitoring Work Plan, Groundwater Monitoring Well Installation Report, Background Groundwater Quality Study Report, updated Ash Management and Disposal Plan, and install an effluent flow meter.

Monitoring Requirements

Section 13267 of the California Water Code authorizes the Central Valley Water Board to require the Discharger to submit monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State.

The proposed Order includes effluent, leachfield, groundwater, and ash solids monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent limitations prescribed by this Order, and evaluate groundwater quality and extent of degradation, if any, caused by the discharge.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or once new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2016-0034

FOR

SHASTA RENEWABLE RESOURCES LLC
AND
ANDERSON PLANT LLC

ANDERSON BIOMASS PLANT
SHASTA COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP.

Section 13267 of the California Water Code states, in part:

“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, 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 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. 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.”

Section 13268 of the California Water Code states, in part:

“(a) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267, or failing or refusing to furnish a statement of compliance as required by subdivision (b) of Section 13399.2, or falsifying and information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).

(b)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with section 13323) of Chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars (\$1,000) for each day in which the violation occurs.”

The Shasta Renewable Resources LLC (here after “Discharger”) owns and operates the facility that is subject to the WDRs cited herein, and the monitoring reports are necessary to determine compliance with the WDRs.

Pursuant to Section 13267 of the California Water Code, the Discharger shall implement this MRP and shall submit the monitoring reports described herein.

A glossary of terms used in this MRP is included on the last page.

I. GENERAL MONITORING REQUIREMENTS

A. FLOW MONITORING

Hydraulic flow rates shall be measured at the monitoring points specified in this MRP. Central Valley Water Board staff shall approve any proposed changes to flow monitoring locations prior to implementation of the change. All flow monitoring systems shall be appropriate for the conveyance system (i.e., open channel flow or pressure pipeline) and liquid type. Unless otherwise specified, each flow meter shall be equipped with a flow totalizer to allow reporting of cumulative volume as well as instantaneous flow rate. Flow meters shall be calibrated at the frequency recommended by the manufacturer; typically at least once per year and records of calibration shall be maintained for review upon request.

B. MONITORING AND SAMPLING LOCATIONS

Samples shall be obtained at the monitoring points specified in this MRP and any additional monitoring points as required in the WDR that have yet to be determined. Central Valley Water Board staff shall approve any proposed changes to sampling locations prior to implementation of the change.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

Monitoring Location Name	Monitoring Location Description
EFF-001	Location where a representative sample of Discharge effluent EFF-001 (Effluent) can be obtained prior to discharge to the infiltration trenches.
MW-5, MW-6, MW-7, MW-8	Groundwater monitoring well locations.

C. SAMPLING AND SAMPLE ANALYSIS

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. Except as specified otherwise in this MRP, grab samples will be considered representative of water, wastewater, soil, solids/sludges and groundwater.

The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as those used to measure pH, electrical conductivity, dissolved oxygen, wind speed, and precipitation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated at the frequency recommended by the manufacturer;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA);
- *Test Methods for Evaluating Solid Waste* (EPA);
- *Methods for Chemical Analysis of Water and Wastes* (EPA);
- *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA);
- *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and
- *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125).

Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program (ELAP). The Discharger may propose alternative methods for approval. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

II. SPECIFIC MONITORING REQUIREMENTS

A. EFFLUENT MONITORING

Effluent samples shall be collected upstream of the point of discharge prior to the distribution box and final discharge to infiltration trenches. At a minimum, effluent shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Flow	MGD	Meter Reading	Daily	Monthly
Electrical Conductivity	Umhos/cm	Grab	Monthly	Monthly
pH	S.U.	Grab	Monthly	Monthly
Eh	Millivolts	Grab	Monthly	Monthly
Temperature	°C, °F	Grab	Monthly	Monthly
Turbidity	NTU	Grab	Monthly	Monthly
Dissolved Oxygen	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Total Suspended Solids	mg/L	Grab	Quarterly	Quarterly
Tannins and Lignins	mg/L	Grab	Quarterly	Quarterly
Standard Minerals ¹	ug/L	Grab	Quarterly	Quarterly
Priority Pollutant Metals ²	ug/L	Grab	Quarterly	Quarterly
Oil and Grease	mg/L	Grab	Quarterly	Quarterly

¹ Standard minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

² Standard metals shall include at a minimum the following CA Title 22 Metals (CAM 17): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, and Mercury.

B. LEACH FIELD MONITORING

The Discharger shall monitor each leach field as specified below:

Parameter	Units	Type of Measurement	Monitoring Frequency	Reporting Frequency ¹
Evidence of surfacing wastewater, erosion, field saturation, runoff ²	--	Observation	Monthly	Monthly

¹ For reporting purposes, legible photocopies of entries into an operator's log are acceptable.

² Each leach field shall be identified in the monitoring log and a map depicting the location of each leach field shall be including in the report.

C. GROUNDWATER MONITORING

The Discharger shall maintain the groundwater monitoring well network. If a groundwater monitoring well is dry for more than four consecutive sampling events or is damaged, the Discharger shall submit a work plan and proposed time schedule to replace the well. The well shall be replaced following approval of the work plan.

Applicability of Groundwater Limitations

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications for approval. Once installed, all new wells shall be

added to the groundwater monitoring network. The following table lists all existing monitoring wells and designates the purpose of each well:

MW-5¹ MW-6² MW-7² MW-8³

-
- ¹ Existing well not suitable for use as a compliance well
 - ² Compliance well
 - ³ Background well used for compliance monitoring.

Groundwater Concentrations

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.

Groundwater Sampling and Analysis

Prior to purging or sampling, the groundwater depth shall be measured in each well to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction.

Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Otherwise, each monitoring well shall be purged of at least 3 to 5 casing volumes until pH, electrical conductivity and turbidity have stabilized prior to sampling. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Depth to Water ¹	0.01 feet	Measurement	Quarterly	Quarterly
Groundwater Elevation ¹	0.01 feet	Calculation	Quarterly	Quarterly
Gradient ¹	feet/foot	Calculation	Quarterly	Quarterly
Gradient Direction ¹	degrees	Calculation	Quarterly	Quarterly
Electrical Conductivity	Umhos/cm	Grab	Quarterly	Quarterly
pH	S.U.	Grab	Quarterly	Quarterly
Eh	Millivolts	Grab	Quarterly	Quarterly
Temperature	°C, °F	Grab	Quarterly	Quarterly
Turbidity	NTU	Grab	Quarterly	Quarterly

Dissolved Oxygen	mg/L	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Total Suspended Solids	mg/L	Grab	Quarterly	Quarterly
Tannins and Lignins	mg/L	Grab	Quarterly	Quarterly
Standard Minerals ²	ug/L	Grab	Quarterly	Quarterly
Priority Pollutant Metals ³	ug/L	Grab	Quarterly	Quarterly
Oil and Grease	mg/L	Grab	Quarterly	Quarterly

¹ Groundwater elevations shall be determined based on depth-to-water measurements using a surveyed elevation reference point on the well casing.

² Standard minerals shall include, at a minimum, the following elements/compounds: boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

³ Standard metals shall include at a minimum the following CA Title 22 Metals (CAM 17): Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, and Mercury.

III. OTHER MONITORING REQUIREMENTS

A. Ash Solids Monitoring

- Bottom and fly ash information shall be collected and reported in the quarterly monitoring reports and at a minimum, the following:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ash Volume Generated	Dry-tons ⁷	Continuous	Monthly	--
Ash Volume Stored at Facility	Dry-tons ⁷	Continuous	Monthly	--
Ash Volume Removed from Facility	Dry-tons ⁷	Continuous	Monthly	--
Ash Liming Capacity	Equiv % CaCO ₃	Composite	2/Year	UC Davis Method 440 or AOAC 955.01 ⁶
Ash Total Phosphorous	mg/kg	Composite	2/Year	1
Moisture Content	% Moisture	Composite	2/Year	1
pH	standard units	Composite	2/Year	1
CAM 17 Metals ²	mg/kg	Composite	2/Year	1, 3
TCDD-Equivalents ⁴	pg/g	Composite	1/Year ⁵	EPA Method 1613

- ¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- ² California Administrative Manual (i.e. CCR) metals: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.
- ³ In accordance with CCR Title 22 testing procedures.
- ⁴ Dioxin equivalents, also known as the TEQ, is a calculated value that reflects the combined effect of dioxin and furan compounds (cogeners). Results for dioxin TEQ shall include all congeners.
- ⁵ Upon Executive Officer approval, sampling frequency may be reduced after two consecutive years of data has been submitted.
- ⁶ A&L Western Agricultural Laboratories" Neutralizing value of liming materials (or percent calcium carbonate equivalency-CCE).
- ⁷ Units may be reported in volume or weight measurement.

2. The Discharger shall record on a monthly basis the following information about wood ash removed from the Facility and submit in an annual Monitoring Report **no later than 1 February of each year**:
 - a. final end user name, address, and disposal location or soil amendment application area (except as described in item c. below for intermediate producers), and
 - b. volume and/or weight of ash for each location/area (except as described in item c. below for intermediate producers).
 - c. the name, address, and volume and/or weight of ash sold or supplied to an intermediate producer for use in the manufacture of commercial soil amendment products. (Note: Final application area information for end users purchasing commercial soil amendment products is not required.)

IV. REPORTING REQUIREMENTS

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: centralvalleyredding@waterboards.ca.gov.

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email:

Shasta Renewable Resources/Shasta/WDR

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
364 Knollcrest Drive, Suite 205
Redding, California 96002

A transmittal letter shall accompany each monitoring report. The letter shall include a discussion of all violations of the WDRs and this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. Pursuant to Section B.3 of the Standard Provisions and General Reporting Requirements, the transmittal letter shall contain a statement by the Discharger or the Discharger's authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer's knowledge.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

Laboratory analysis reports shall be included in the monitoring reports and must be retained for a minimum of three years in accordance with Standard Provision C.3. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

In addition to the requirements of Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

All monitoring reports that involve planning, investigation, evaluation or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

In the future, the State Water Board or Central Valley Regional Water Board may require electronic submittal of monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>) or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System.

A. Quarterly Monitoring Reports

Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by **May 1st**). Each Quarterly Monitoring Report shall include the following:

1. Results of Effluent Monitoring, including calculated values for total flow and average daily flow for each month, and total annual flow to date.
2. Results of Leach Field Monitoring if performed during the quarter.
3. Results of Groundwater Monitoring, if performed during the quarter, including:
 - a. A narrative description of all preparatory, monitoring, sampling, and sample handling for groundwater monitoring.
 - b. A field log for each well documenting depth to groundwater; method of purging; parameters measured before, during, and after purging; sample preparation (e.g., filtering); and sample preservation.
 - c. Calculation of the groundwater elevation at each monitoring well, and determination of groundwater flow direction and gradient on the date of measurement.
 - d. Summary data tables of historical and current water table elevations and analytical results.
 - e. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells, surface waters, and groundwater elevation contours referenced to an appropriate datum (e.g., NGVD).
4. Results of Ash Solids Monitoring completed during the quarter, including the volume of ash generated, stored, and removed from the facility and when applicable results of any laboratory analysis conducted.
5. A comparison of monitoring data to the effluent limitations and discharge specifications and an explanation of any violation of those requirements.
6. A copy of inspection log page(s) documenting inspections completed during the quarter.
7. A copy of calibration log page(s) verifying calibration of all hand-held monitoring instruments performed during the quarter.

The Fourth Quarter Monitoring Report will serve as an Annual Monitoring Report. The Fourth Quarterly Monitoring Report for each calendar year shall include the following in addition to the items listed above.

Effluent Monitoring

1. Effluent flow v. time graphs using all historic flow monitoring data.
2. Concentration v. time graphs for each monitored constituent using all historic effluent monitoring data.

Leach Field Monitoring

1. Summary of monthly observations made throughout the year. Including but not limited to any notable observations made and any corrective actions that were

required to mitigate any adverse conditions that were observed.

Groundwater Monitoring

1. Concentration v. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the background groundwater concentration range, concentration specified above, and the Groundwater Limitation as horizontal lines at the applicable concentration.
2. An evaluation of the groundwater quality beneath the site and determination of whether any concentrations were exceeded in any compliance well at any time during the calendar year. This shall be determined by comparing the annual average concentration for each well during the calendar year to the corresponding concentration specified above. If any groundwater concentrations were exceeded, include acknowledgment that the technical report described in the Groundwater Concentrations section of this MRP will be submitted in accordance with the specified schedule.

Ash Solids Monitoring

1. A summary of all Ash Solids Monitoring completed during throughout the year, including the volume of ash generated, stored, and removed from the facility and when applicable results of any laboratory analysis conducted.

Other Standard Information

1. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
2. Monitoring equipment maintenance and calibration records, as described in Standard Provision C.4.
3. A discussion of any data gaps and potential deficiencies or redundancies in the monitoring system or reporting program.

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

Ordered by: Original signed by:
PAMELA C. CREEDON, Executive Officer

21 April 2016
(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand
CaCO ₃	Calcium carbonate
DO	Dissolved oxygen
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
NTU	Nephelometric turbidity unit
TKN	Total Kjeldahl nitrogen
TDS	Total dissolved solids
TSS	Total suspended solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-hr Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots over a 24-hour period.
Daily	Every day
Twice Weekly	Twice per week on non-consecutive days.
Weekly	Once per week.
Twice Monthly	Twice per month during non-consecutive weeks.
Monthly	Once per calendar month.
Bimonthly	Once every two calendar months (i.e., six times per year) during non-consecutive months.
Quarterly	Once per calendar quarter.
Semiannually	Once every six calendar months (i.e., two times per year) during non-consecutive quarters.
Annually	Once per year.
mg/L	Milligrams per liter
mL/L	Milliliters [of solids] per liter
µg/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
gpd	Gallons per day
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
MTF	Multiple tube fermentation

Table 1
Priority Pollutants

<u>Inorganics</u> ¹	<u>Organics</u>	3-Methyl-4-Chlorophenol	Hexachlorobenzene
Antimony	Acrolein	Pentachlorophenol	Hexachlorobutadiene
Arsenic	Acrylonitrile	Phenol	Hexachlorocyclopentadiene
Beryllium	Benzene	2,4,6-Trichlorophenol	Hexachloroethane
Cadmium	Bromoform	Acenaphthene	Indeno(1,2,3-c,d)pyrene
Chromium (III)	Carbon tetrachloride	Acenaphthylene	Isophorone
Chromium (VI)	Chlorobenzene	Anthracene	Naphthalene
Copper	Chlorodibromomethane	Benzenidine	Nitrobenzene
Lead	Chloroethane	Benzo(a)Anthracene	N-Nitrosodimethylamine
Mercury	2-Chloroethylvinyl Ether	Benzo(a)pyrene	N-Nitrosodi-n-Propylamine
Nickel	Chloroform	Benzo(b)fluoranthene	N-Nitrosodiphenylamine
Selenium	Dichlorobromomethane	Benzo(g,h,i)perylene	Phenanthrene
Silver	1,1-Dichloroethane	Benzo(k)fluoranthene	Pyrene
Thallium	1,2-Dichloroethane	Bis(2-chloroethoxy) methane	1,2,4-Trichlorobenzene
Zinc	1,1-Dichloroethylene	Bis(2-chloroethyl) ether	
Cyanide	1,2-Dichloropropane	Bis(2-chloroisopropyl) ether	<u>Pesticides</u>
Asbestos	1,3-Dichloropropylene	Bis(2-Ethylhexyl)phthalate	Aldrin
	Ethylbenzene	4-Bromophenyl phenyl ether	alpha-BHC
	Methyl Bromide	Butylbenzyl Phthalate	beta-BHC
<u>Dioxin Congeners</u>	Methyl Chloride	2-Chloronaphthalene	gamma-BHC (Lindane)
2,3,7,8-TCDD	Methylene Chloride	4-Chlorophenyl Phenyl Ether	delta-BHC
1,2,3,7,8-PentaCDD	1,1,2,2-Tetrachloroethane	Chrysene	Chlordane
1,2,3,4,7,8-HexaCDD	Tetrachloroethylene (PCE)	Dibenzo(a,h)Anthracene	4,4'-DDT
1,2,3,6,7,8-HexaCDD	Toluene	1,2-Dichlorobenzene	4,4'-DDE
1,2,3,7,8,9-HexaCDD	1,2-Trans-Dichloroethylene	1,3-Dichlorobenzene	4,4'-DDD
1,2,3,4,6,7,8-HeptaCDD	1,1,1-Trichloroethane	1,4-Dichlorobenzene	Dieldrin
OctaCDD	1,1,2-Trichloroethane	3,3'-Dichlorobenzidine	alpha-Endosulfan
1,2,3,7,8-PentaCDF	Trichloroethylene (TCE)	Diethyl phthalate	beta-Endosulfan
2,3,4,7,8-PentaCDF	Vinyl chloride	Dimethyl phthalate	Endosulfan Sulfate
1,2,3,4,7,8-HexaCDF	2-Chlorophenol	Di-n-Butyl Phthalate	Endrin
1,2,3,6,7,8-HexaCDF	2,4-Dichlorophenol	2,4-Dinitrotoluene	Endrin Aldehyde
1,2,3,7,8,9-HexaCDF	2,4-Dimethylphenol	2,6-Dinitrotoluene	Heptachlor
2,3,4,6,7,8-HexaCDF	2-Methyl-4,6-Dinitrophenol	Di-n-Octyl Phthalate	Heptachlor epoxide
1,2,3,4,6,7,8-HeptaCDF	2,4-Dinitrophenol	1,2-Diphenylhydrazine	Polychlorinated biphenyls
1,2,3,4,7,8,9-HeptaCDF	2-Nitrophenol	Fluoranthene	Toxaphene
OctaCDF	4-Nitrophenol	Fluorene	

¹ With the exception of wastewater samples, samples for metals analysis must first be filtered. If filtering in the field is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain of custody form) to immediately filter then preserve the sample.

² Samples to be analyzed for volatile compounds and phthalate esters shall be grab samples; the remainder shall be 24-hour composite samples.