

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2015-0108

WASTE DISCHARGE REQUIREMENTS

FOR

WOODLAND-DAVIS CLEAN WATER AGENCY
DAVIS WOODLAND REGIONAL WATER TREATMENT FACILITY
YOLO COUNTY

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

1. On 11 June 2014, the Woodland-Davis Clean Water Agency (WDCWA) submitted a Report of Waste Discharge (RWD) for the land application of wastewater generated at the Davis Woodland Regional Water Treatment Facility (RWTF) in the City of Woodland. An addendum to the RWD was submitted on 14 January 2015 and additional information was submitted on various dates in March and May 2015.
2. The Woodland-Davis Clean Water Agency (hereafter "Discharger") owns and operates the facility that generates the waste and the land discharge areas and is responsible for compliance with these Waste Discharge Requirements (WDRs).
3. The facility is at 855 County Road 102 in the City of Woodland (Section 35, T10N, R2E, MDB&M). The facility occupies Assessor's Parcel Numbers (APN) 027-390-07 (treatment facility and west drying beds) and 027-390-022 (east drying beds), as shown on Attachment A, which is attached hereto and made part of this Order by reference.

Facility and Discharge

4. The Davis Woodland RWTF is a new facility that will treat water from the Sacramento River for distribution to the cities of Woodland and Davis and the University of California, Davis. The RWTF will be designed for an average daily flow of 25.3 million gallons per day (mgd) and a peak daily flow of 30 mgd. The facility will be located at the site that was previously the City of Woodland Water Pollution Control Facility North Ponds 1 – 9, which were last used as sludge stabilization ponds prior to 2010.
5. Water treatment will consist of flash mixing, sand ballasted clarification, ozonation, granular media filtration, and final disinfection with free chlorine. The treatment system will be equipped to add a number of chemicals at various stages of treatment. A process flow schematic for the treatment and disposal system is shown on Attachment B, which is attached hereto and made part of this Order by reference.

6. Residual handling facilities include gravity thickeners for the underflow from the sand ballasted clarification process. Up to 389,000 gpd of underflow from the thickeners will be sent to the solids drying beds for settling/decanting and evaporation. Free water will be decanted and conveyed to the backwash equalization basin, where it will be mixed with filter backwash water and returned to the water treatment process or gravity thickeners.
7. There will be four clay-lined solids drying beds, each excavated to a depth of approximately 8.0 feet. The west drying beds, Ponds 1 and 2, will be located within the fenced facility site. Ponds 1 and 2 will have a combined surface area and storage capacity of approximately 12.9 acres and 93.6 acre-feet, respectively at 2-feet of freeboard. The east drying beds, Ponds 3 and 4, will be located east of the RWTF, at the site that was once the location of emergency lagoons used for storage and partial treatment of process wastewater from an existing tomato cannery (currently Pacific Coast Producers). There has been no waste discharged to the former lagoons in over 10 years. Ponds 3 and 4 will have a combined surface area and storage capacity of approximately 14.0 acres and 101.9 acre-feet, respectively at 2-feet of freeboard.
8. Operation of the solids drying beds will incorporate filling one bed at a time. After filling, decant will be manually drawn from the beds after initial thickening to speed drying time. The decant water will be recycled through the water treatment process. Thickened sludge will be routed to the next bed while the first one dries. With sequential filling, the solids in the first bed will be allowed to dry for approximately 1 year prior to having its solids removed and put back online. Solids will be hauled to an off-site permitted landfill.
9. The Discharger submitted an acceptable water balance that demonstrates maximum disposal capacity of the solids drying beds. Based on the proposed sludge operations and the ability to decant any excess storm water from the solids drying beds to the water treatment system, imposing a minimum freeboard requirement on all ponds is sufficient to prevent an overflow or berm failure and no flow limitation is required.
10. A summary of the chemical use in the treatment process is presented below. Ferric chloride, ozone, polymers, sodium hypochlorite, and phosphoric acid will be fed into the system continuously. Hydrogen peroxide and sodium hydroxide will be fed in periodically. Provisions for an aqueous ammonia storage and feed system will be provided in case it is determined to provide process treatment benefits (for secondary disinfection). Chemical application points are shown in the process flow schematic on Attachment B.

Parameters	Primary Use	Application Points	Average Active Dose (mg/L)	Annual Usage (gallons)
Ferric Chloride	Coagulant	- Raw water at the flash mix stage.	30	485,000
Hydrogen Peroxide	Oxidizer	- Ozonated water. - Filter influent and backwash supply lines.	0.5	12,000
Sodium Hydroxide	pH Adjustment	- Raw water at the flash mix stage. - Disinfected finished water.	28	336,000
Sodium Bisulfite	Quench Residual Oxidant	- Downstream end of the Ozone Contactors.	0.65	12,000
Sodium Hypochlorite	Disinfection	- Suction of In-Plant Pump Station. - Discharge of the In-Plant Pump Station. - Suction of the finished water pumps. - Feed to Ozone Contactor. - Backwash water supply line.	3.0	183,000
Phosphoric Acid	Prevent and/or retard scale formation and corrosion in the water distribution system	- Finished water for corrosion control in distribution system. - Backwash water supply line.	3.0	22,000
Anionic Polymer	Flocculant	- Influent sand ballasted clarifier tank.	0.5	4,200
Cationic Polymer	Solids thickening	- Gravity thickener influent. - Solids drying beds.	5.0	2,200
Nonionic Polymer	Filter aid	- Filter influent.	0.04	340

11. The RWD provided characterization of the raw water and the wastewater entering the solids drying beds, which is presented in the table below for select constituents. The raw water quality data was based on Sacramento River water samples collected between August 2009 and December 2010.

Constituents	Potential WQO	Average Concentration, mg/L unless specified	
		Raw Water	Estimated Wastewater
pH, std units (field measurement)	6.5 – 8.5 ³	6.9	6.9
Total Dissolved Solids	450 ¹ - 1,000 ⁴	133	233
Ammonia as N	--	0.08	0.08
Nitrate as N	10 ¹	ND	--
Chloride	106 ¹ – 500 ⁴	8.9	8.9
Sodium	69 ¹	14.3	14.3
Sulfate	250 ³ – 500 ⁴	10.5	10.5
Iron, dissolved	0.3 ³	0.065	0.065
Manganese, dissolved	0.05 ³	0.0035	0.0035

WQO denotes Water Quality Objective. NA denotes not analyzed. ND denote not detect at or above the reporting limit. “—“ value not available or not provided.

- ¹ Lowest Agricultural Water Quality Goal.
- ² Primary Maximum Contaminant Level.
- ³ Secondary Maximum Contaminant Recommended Level.
- ⁴ Secondary Maximum Contaminant Upper Level.

- a. Based on the above data, both the raw water and wastewater are of high quality, though the water treatment process will increase the overall salinity of the water. The Discharger estimated the wastewater TDS concentration based on worse case salinity increases due to the chemical additions in the treatment process. Increases in sodium, sulfate, and chloride concentrations in the wastewater are anticipated to be low.
- b. Ferric chloride is used as a coagulant in the water treatment process. When applied to the raw water, ferric chloride will convert to ferric hydroxide. Any iron produced will be in a solid state, and therefore increases of dissolved iron concentrations in the wastewater are not anticipated.
- c. Aqueous ammonia may be used to help balance disinfection efficiency and reduce formation of potential disinfection by-products during the ozonation treatment process. Increases of ammonia in the wastewater are not anticipated because the ammonia will volatilize during the ozonation process.

Site-Specific Conditions

- 12. The RWTF site slopes from a ridge running east/west in the middle of the site to the north and to the south where it drains into the the City of Woodland Storm Water Detention Pond. The site elevation ranges from 25 to 39 feet above mean sea level.
- 13. The facility is currently within the 100-year FEMA floodplain designation. The Woodland-Davis Clean Water Agency is in the process of a Map Revision to have the facility site removed from this designation.

14. Surficial soils consist of clay extending to depths of approximately 90 feet below ground surface (bgs) with some shallow layers of sand with gravel at depths of approximately 8 to 16 feet bgs. Estimated rate of infiltration is approximately 4.0×10^{-5} feet/day.
15. The average annual precipitation for Yolo County is approximately 16.8 inches and the 100-year precipitation is approximately 33.1 inches. The reference evapotranspiration rate for the area is approximately 57.0 inches per year.
16. The area surrounding the RWTF is a mix of municipal, commercial/business, and agricultural properties. The City of Woodland Water Pollution Control Facility is located just south of the RWTF and there are several businesses on County Road 102 and East Gibson Road. Most of the surrounding area is agricultural. Rice and alfalfa are grown on the nearby properties. Reclamation District 2035 supplies irrigation water from the Sacramento River to the surrounding area.

Groundwater Conditions

17. Subsurface soils at the site are generally clayey soil with some zones of sandy material. According to the Web Soil Survey published by the United States Department of Agricultural Natural Resources Conservation Service, the site is located in an area where there are two predominate soil series: Sycamore complex and Pescadero silty clay.
 - a. The Sycamore soil series consists of silty clay loam and silty clay with a moderately high saturated hydraulic conductivity (0.20 to 0.57 in/hr).
 - b. The Pescadero soil series consists of silty clay, silty clay loam, and stratified loam to silty clay loam with a very low to moderately low saturated hydraulic conductivity (0.0 – 0.06 in/hr).
18. Based on available information, depth to groundwater ranges approximately 10 feet (northeastern part of the site) to 20 feet (south western part of the site) below the ground surface. In addition, groundwater elevation data monitored by the City of Woodland Water Pollution Control Facility show that the groundwater flow direction is generally towards the east and northeast.¹ Depth to groundwater and groundwater flows may be influenced by nearby irrigation pumping.
19. A geotechnical investigation was performed for the project. Eight monitoring wells were constructed from soil borings that were drilled during this investigation. These wells are located along the proposed raw water and finished water transmission lines. Due to their location, these wells may be destroyed during the transmission line construction activities. Well MW8 is located 0.25 miles east of the proposed RWTF and likely represents groundwater quality near the facility. The location of

¹ Stantec, *City of Woodland, Groundwater Monitoring Summary Report*, 5 March 2014.

MW8 is shown on Attachment C, which is attached hereto and made part of this Order by reference.

20. In addition, the nearby Woodland Water Pollution Control Facility has 15 groundwater monitoring wells that monitor shallow groundwater within the surrounding area. Wells MW3 and MW5 are located along the northern perimeter of the RWTF site as shown on Attachment C. The City of Woodland has requested that these two wells be destroyed because groundwater monitoring is no longer necessary with the removal of the North Ponds.
21. Water quality from wells MW8, MW3, and MW5 likely represent current groundwater within the area of the RWTF, and therefore represent pre-discharge groundwater quality. In general, pre-discharge groundwater quality is poor with respect to salinity constituents (particularly TDS, sodium, and chloride). Analytical data for select constituents is presented in the table below.

Constituent	Potential WQO	Average Pre-Discharge Groundwater Quality, mg/L unless otherwise specified		
		MW8 ⁵	MW3 ⁶	MW5 ⁶
pH	6.5 – 8.5 ³	7.6	7.6	8.0
Total Dissolved Solids	450 ¹ - 1,000 ⁴	930	980	730
Fixed Dissolved Solids	--	--	720	510
Specific Conductance, µmhos/cm	700 ¹ – 1,600 ⁴	1,500	1,760	1,500
Ammonia as N	--	--	--	--
TKN	--	--	<1.0 ⁷	<1.0 ⁷
Nitrate as N	10 ²	--	10 ⁸	3.2
Nitrate as NO ₃	45 ²	2.4	--	--
Chloride	106 ¹ - 500 ⁴	250	160	120
Sodium	69 ¹	150	190	230
Sulfate	250 ³ – 500 ⁴	40	60	50
Iron, dissolved	0.3 ³		<0.05 ⁷	<0.05 ⁷
Manganese, dissolved	0.05 ³		<0.01 ⁷	0.09

WQO denotes Water Quality Objective. “--” value not available or not provided.

¹ Lowest Agricultural Water Quality Goal.

² Primary Maximum Contaminant Level.

³ Secondary Maximum Contaminant Recommended Level.

⁴ Secondary Maximum Contaminant Upper Level.

⁵ Based on September 2010 sample.

⁶ Based on groundwater data sampled from January 2009 – December 2013.

⁷ Concentration not detected at or above the reporting limit.

⁸ The 12 August 2010 groundwater sample resulted in a nitrate concentration of 46 mg/L, which appears to be an outlier; therefore the result was not used to calculate the average.

Basin Plan, Beneficial Uses, and Regulatory Considerations

22. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition (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 Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
23. Local drainage is to the Yolo Bypass. The beneficial uses of the Yolo Bypass, as stated in the Basin Plan, are agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
24. 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.
25. 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.
26. 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.
27. 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.
28. 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.
29. 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.

30. 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

31. 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.
32. Degradation of groundwater by some of the typical waste constituents associated with discharges from water treatment processes, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. Water treatment operations present advantages over reliance on numerous domestic water wells, including energy savings, higher quality water, and greater reliability. 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 the limited groundwater degradation that may occur pursuant to this Order.
33. The Discharger has only monitored groundwater quality at the site from 2010 through 2012 for the purpose of the geotechnical investigation. The City of Woodland has monitored groundwater quality within the surrounding area since 2007 for its Water Pollution Control Facility. 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 groundwater quality.

34. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS), ammonia, nitrate, and iron as discussed below:

Constituent	Potential WQO	Average Water Quality, mg/L unless specified		
		Raw Water	Estimated Wastewater	Pre-Discharge Groundwater ⁵
TDS	450 ¹ - 1,000 ⁴	133	233	980
Ammonia as N	--	0.08	0.08	--
Nitrate as N	10 ²	ND	--	10
Iron, dissolved	0.3 ³	0.065	0.065	<0.05

WQO denotes Water Quality Objective. TDS denotes total dissolved solids. ND denotes non detect.

"—" value not available or was not provided.

¹ Lowest agricultural water quality goal.

² Primary Maximum Contaminant Level.

³ Secondary Maximum Contaminant Recommended Level.

⁴ Secondary Maximum Contaminant Upper Level range.

⁵ Based on MW3 average data from 2009 – 2013 monitored by the Water Pollution Control Facility.

- a. **Total Dissolved Solids.** The average TDS concentration in the raw water is approximately 133 mg/L. The TDS concentration in the wastewater is anticipated to be approximately 233 mg/L. As noted in previous findings, pre-discharge groundwater quality is poor with respect to TDS, and greatly exceeds the average TDS concentrations anticipated in the wastewater. Although the treatment process will increase the overall salinity of the wastewater, the discharge is not likely to cause degradation of groundwater quality.

In consideration of the high quality source water, low salinity of the discharge, and site-specific soil and groundwater conditions, the discharge is not likely to degrade groundwater quality due to increased salinity. Therefore, a TDS effluent limit is not required to protect groundwater quality and groundwater monitoring is not necessary unless the discharge changes significantly or new information regarding the threat to groundwater quality becomes available. This Order will require monitoring the quality of the raw water and decant water in the solids drying beds. If monitoring results reveal a previously undetected threat to waste quality or indicate a change in waste character such that the discharge poses a threat to water quality, the Executive Officer may require groundwater monitoring and/or the Regional Water Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution No. 68-16.

- b. **Ammonia and Nitrate.** For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality and the ability of the vadose zone below the solids drying beds to support nitrification and

denitrification to convert the nitrogen to nitrogen gas before it reaches the water table. The average ammonia concentration in the raw water is approximately 0.08 mg/L. The Discharger anticipates that the wastewater ammonia concentrations will be similar. Although aqueous ammonia may be used to treat the raw water; it is likely that the ammonia will volatilize during the treatment process. Therefore, the discharge to the drying beds is not likely to degrade groundwater quality due to increased nitrate. In addition, any ammonia concentration in the wastewater is likely to volatilize due to the large surface area of the drying beds. Operation of the clay-lined sludge beds with a continuous return of wastewater and yearly solids removal will not cause nitrate concentrations in groundwater to exceed the water quality objective. The nitrate concentration in the groundwater is approximately 10 mg/L, which is the water quality objective for nitrate. Monitoring the decant water for ammonia is needed to periodically verify that the discharge will not cause degradation of groundwater.

- c. **Iron.** The average dissolved iron concentration in the raw water is approximately 0.065 mg/L. The Discharger anticipates wastewater iron concentrations to be similar. Although ferric chloride will be used during the water treatment process, any iron added will convert to a solid state and will be captured in the solids drying beds and hauled off site each year. Therefore, although the discharge could degrade groundwater quality due to increased dissolved iron, it is unlikely that it would cause exceedance of the water quality objective. Concentrations in the groundwater are at or below the reporting limit for iron (0.05 mg/L) and do not exceed the water quality objective of 0.3 mg/L. Monitoring the decant water for dissolved iron is needed to verify the waste character.

- 35. This Order establishes groundwater limitations for the facility that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan as follows:
 - a. Based on the high quality source water, low salinity of the discharge, and high salinity of the existing shallow groundwater, the discharge has minimal potential to degrade groundwater quality if properly managed. Therefore, groundwater monitoring is not necessary unless the discharge changes significantly or new information regarding the threat to groundwater quality becomes available.
- 36. The Discharger provides treatment and control of the discharge that incorporates:
 - a. High quality source water;
 - b. Engineered clay-lined solids drying beds.
 - c. Removal of solids from the solids drying bed for off-site disposal.

These practices are best practicable control for this type of waste. Therefore, the groundwater limitations of this Order allow degradation of groundwater quality, but not pollution.

Other Regulatory Considerations

37. 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.
38. Based on the threat and complexity of the discharge, the facility is determined to be classified as 3C as defined below:
 - a. Category 3 threat to water quality: “Those discharges of waste that could degrade water quality without violating water quality objectives, or could cause a minor impairment of designated beneficial uses as compared with Category 1 and Category 2.”
 - b. Category C complexity, defined as: “Any discharger for which waste discharge requirements have been prescribed pursuant to Section 13263 of the Water Code not included in Category A or Category B as described above. Included are dischargers having no waste treatment systems or that must comply with best management practices, dischargers having passive treatment and disposal systems, or dischargers having waste storage systems with land disposal.”
39. 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....

40. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:

a. Discharges to Solids Drying Beds Ponds 1, 2, 3, and 4 are exempt pursuant to Title 27, section 20090(b) because they are discharge of wastewater to land and:

i. The Central Valley Water Board is issuing WDRs.

ii. The discharge will be in compliance with the Basin Plan, and;

iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.

41. 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.

42. 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. Based on their Standard Industrial Classification (SIC) code 4941, the Discharger is exempt from coverage under NPDES General Permit CAS000001.

43. Water Code section 13267(b) 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 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 R5-2015-0108 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

44. 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.
45. A Notice of Determination (NOD) was certified by the City of Woodland on 6 November 2007 in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). An Environmental Impact Report (EIR) was prepared for this project pursuant to the provisions of CEQA, and mitigation measures were made a condition of the approval of the project. The NOD describes the project as to acquire a new surface water supply from the Sacramento River, and to construct and operate water intake/diversion, conveyance, and treatment facilities so that the Woodland-Davis Clean Water Agency can use treated surface water in their respective service areas.
46. The EIR evaluated the potential impacts to groundwater quality and found that mitigation measures and compliance with WDRs will ensure that impacts to water quality would be less than significant. Compliance with this Order will mitigate or avoid significant impacts to water quality.
47. 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

48. 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.
49. 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.
50. 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 Woodland-Davis Clean Water Agency, 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, including irrigation ditches outside the control of the Discharger, 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.

B. 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 solids drying beds 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. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
7. 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.
8. **On or about 1 October of each year**, available capacity shall at least equal the volume necessary to comply with Discharge Specifications B.6 and B.7.
9. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
10. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

11. Wastewater contained in any unlined pond shall not have a pH less than 6.0 or greater than 9.0.

C. Groundwater Limitations

Release of waste constituents from any portion of the facility shall not cause groundwater to:

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

D. Solids Disposal Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid organic matter removed from wastewater treatment, settling, and storage vessels or ponds. Solid waste refers to solid inorganic matter removed by screens and soil sediments from washing of unprocessed fruit or vegetables. Except for waste solids originating from meat processing, residual solids means organic food processing byproducts such as culls, pulp, stems, leaves, and seeds that will not be subject to treatment prior to disposal or land application.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and clarifiers as needed to ensure optimal operation and adequate storage capacity.
2. Any handling and storage of sludge, solid waste, and residual solids 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. If removed from the site, sludge, solid waste, and residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. 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.

E. Provisions

1. The following reports shall be submitted pursuant to CWC section 13267 and shall be prepared as described in Provision E.3:

- a. By **1 November 2015**, the Discharger shall submit a *Solids Management Plan*. The plan shall include a detailed plan for solids removal, drying, and disposal. The plan shall specifically describe the procedures and recommended frequency for solids drying bed cleaning, including measures to be used to control runoff or percolate from the solids if additional drying outside of the beds is necessary prior to disposal, disposal locations, and a schedule that shows how all dried solids will be removed from the site prior to the onset of the rainy season (1 October).
2. 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**.
3. 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.
4. 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.
5. The Discharger shall comply with Monitoring and Reporting Program R5-2015-0108, 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.
6. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

7. 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.
8. 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.
9. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
10. 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.
11. 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."
12. 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.
13. 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.

14. 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.
15. 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.
16. 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.

WASTE DISCHARGE REQUIREMENTS ORDER R5-2015-0108
WOODLAND-DAVIS CLEAN WATER AGENCY
DAVIS WOODLAND REGIONAL WATER TREATMENT FACILITY
YOLO COUNTY

-20-

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 31 July 2015

- Original signed by -

PAMELA C. CREEDON, Executive Officer

LLA: 051515

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-0108

FOR
WOODLAND-DAVIS CLEAN WATER AGENCY
DAVIS WOODLAND REGIONAL WATER TREATMENT FACILITY
YOLO COUNTY

The Monitoring and Reporting Program (MRP) describes requirements for monitoring the raw water, solids drying beds, wastewater, and solids disposal. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to measure pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
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 the MRP.

Analytical procedures shall comply with the methods and holding times specified in the following: *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. The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

Monitoring reports must be submitted monthly, even if the facility has not yet been constructed or is operational. If the facility is not yet operational, then there is no need to conduct the monitoring described below; however, the monitoring reports must contain the information listed in the "Reporting" section of this MRP.

RAW WATER MONITORING

The Discharger shall establish permanent monitoring stations within the water treatment plant as needed to ensure that all samples are representative. At a minimum, the Discharger shall monitor the raw water as follows:

Constituent/Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
Flow	gpd	Meter observation	daily	monthly
Total Dissolved Solids	mg/L	grab	annually	annually
Nitrate as Nitrogen	mg/L	grab	annually	annually
Ammonia as Nitrogen	mg/L	grab	annually	annually
Sodium	mg/L	grab	annually	annually
Chloride	mg/L	grab	annually	annually
Dissolved Iron ¹	mg/L	grab	annually	annually

¹ Sample shall be filtered through a 0.45-micron filter prior to preservation.

SOLIDS DRYING BED MONITORING

The solids drying beds shall be monitored as follows. Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet.

Constituent/Parameter	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Influent Flow ¹	gpd	meter reading	daily	monthly
Freeboard	0.1 feet	staff gage	weekly	monthly
pH	Std. Units	grab	weekly	monthly

¹ Report as total daily flow to each drying bed.

WASTEWATER MONITORING

One sample of decant water from each solids drying beds shall be monitored, as follows:

Constituent/Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
Total Dissolved Solids	mg/L	grab	quarterly ¹	monthly
Nitrate as Nitrogen	mg/L	grab	quarterly ¹	monthly
Ammonia as Nitrogen	mg/L	grab	quarterly ¹	monthly
Dissolved Iron ²	mg/L	grab	quarterly ¹	monthly

¹ Quarterly monitoring results shall be reported in the monthly monitoring reports for the months during which sampling occurs.

² Sample shall be filtered through a 0.45-micron filter prior to preservation.

SOLIDS DISPOSAL MONITORING

The Discharger shall implement the *Solids Management Plan* required by Provision E.1.a. The Discharger shall keep records regarding all solids disposal activities. For each discrete quality of solids removed from the facility, the record shall contain the following information:

1. Date;
2. Name and signature of the recorder of the entry;
3. Volume or weight of solids removed;
4. Transport method;
5. Name of the hauling company;
6. Name and address of permitted disposal site;
7. Analytical results for any solids monitoring conducted at the request of the disposal facility.

The records shall also indicate steps taken to reduce odor and other nuisance conditions. Records shall be stored onsite and available for review during inspections. A summary of the solids disposal activities for the calendar year shall be submitted as part of the Annual Monitoring Report.

REPORTING

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:

centralvalleysacramento@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.

Attention: Compliance/Enforcement Section
Davis Woodland Regional Water Treatment Facility
Woodland-Davis Clean Water Agency
Yolo County
Place ID: 807811

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
ECM Mailroom
11020 Sun Center Drive, Suite 200
Rancho Cordova, California 95670

Please include a transmittal sheet that includes the following:

Attention: Compliance/Enforcement Section
Davis Woodland Regional Water Treatment Facility
Woodland-Davis Clean Water Agency
Yolo County
Place ID: 807811

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, groundwater), sampling location, and the 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.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the direct supervision of a California-registered professional and signed by the registered professional.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in the monthly monitoring report. Monthly reports shall be submitted to the Central Valley Water Board on the **1st day of the second month following sampling** (i.e., the January report is due by 1 March).

If the facility is not yet operational, then the monthly monitoring report shall describe the status of construction and provide the anticipated date of beginning operations.

Once the facility begins operating, the reports shall include the following minimum information:

1. Tabulated raw water flow monitoring data for the month.
2. Tabulated solids drying bed monitoring data for the month, including total flow during the calendar month and cumulative annual flow to date for each drying bed.
3. Tabulated wastewater monitoring data. The Discharger shall establish a quarterly sample schedule for wastewater monitoring such that samples are obtained approximately every three months. Quarterly monitoring results shall be reported in the monthly monitoring report for the months during which sampling occurs.
4. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements.
5. If requested by staff, copies of laboratory analytical report(s).

6. The most recent calibration log sheet(s) verifying calibration of any field monitoring instruments (e.g., DO and pH meters) used to obtain data.

C. Annual Report

An Annual Report shall be submitted to the Central Valley Water Board by **1 February** of each year.

If the facility is not yet operational, then the Annual Report shall describe the status of construction and provide the anticipated date of beginning operations.

Once the facility begins operating, the Annual Report shall present a summary of all monitoring data obtained during the previous calendar year, and shall include the following.

1. Tabulated raw water monitoring data.
2. An evaluation of the wastewater quality and comparison to the raw water quality. Determination of whether the results reveal a previously undetected threat to water quality or indicate a change in waste character such that the discharge poses a threat to water quality. This shall be determined by comparing the annual average concentration of the effluent quality during the calendar year to the corresponding concentration of the raw water.
3. A narrative description and summary of solids management and disposal practices.
4. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
5. An evaluation of the performance of the treatment facility, including discussion of capacity issues, system problems, and a forecast of the flows anticipated in the next year.
6. A discussion of the following:
 - a. Waste constituent reduction efforts implemented in accordance with any required workplan;
 - b. Other treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order;
 - c. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.
7. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS

1 March 1991

A. General Provisions:

1. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, or protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.
2. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
3. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - a. Violation of any term or condition contained in this Order;
 - b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
 - c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge;
 - d. A material change in the character, location, or volume of discharge.
4. Before making a material change in the character, location, or volume of discharge, the discharger shall file a new Report of Waste Discharge with the Regional Board. A material change includes, but is not limited to, the following:
 - a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements.
 - b. A significant change in disposal method, location or volume, e.g., change from land disposal to land treatment.
 - c. The addition of a major industrial, municipal or domestic waste discharge facility.
 - d. The addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.

Waste Discharge to Land

5. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.
6. The discharger shall take all reasonable steps to minimize any adverse impact to the waters of the state resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance.
7. The discharger shall maintain in good working order and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
8. The discharger shall permit representatives of the Regional Board (hereafter Board) and the State Water Resources Control Board, upon presentations of credentials, to:
 - a. Enter premises where wastes are treated, stored, or disposed of and facilities in which any records are kept,
 - b. Copy any records required to be kept under terms and conditions of this Order,
 - c. Inspect at reasonable hours, monitoring equipment required by this Order, and
 - d. Sample, photograph and video tape any discharge, waste, waste management unit, or monitoring device.
9. For any electrically operated equipment at the site, the failure of which would cause loss of control or containment of waste materials, or violation of this Order, the discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.
10. The fact that it would have been necessary to halt or reduce the permitted activity in Order to maintain compliance with this Order shall not be a defense for the discharger's violations of the Order.
11. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the California Water Code, Section 13050.
12. The discharge shall remain within the designated disposal area at all times.

B. General Reporting Requirements:

1. In the event the discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the discharger shall notify the Board by telephone at **(916) 464-3291** [*Note: Current phone numbers for all three Regional Board offices may be found on the internet at http://www.swrcb.ca.gov/rwqcb5/contact_us.*] as soon as it or its agents

Waste Discharge to Land

have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within **two weeks**. The written notification shall state the nature, time and cause of noncompliance, and shall include a timetable for corrective actions.

2. The discharger shall have a plan for preventing and controlling accidental discharges, and for minimizing the effect of such events.

This plan shall:

- a. Identify the possible sources of accidental loss or leakage of wastes from each waste management, treatment, or disposal facility.
- b. Evaluate the effectiveness of present waste management/treatment units and operational procedures, and identify needed changes of contingency plans.
- c. Predict the effectiveness of the proposed changes in waste management/treatment facilities and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

The Board, after review of the plan, may establish conditions that it deems necessary to control leakages and minimize their effects.

3. All reports shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in 3a, 3b or 3c of this requirement if;
 - (1) the authorization is made in writing by a person described in 3a, 3b or 3c of this provision;
 - (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - (3) the written authorization is submitted to the Board

Waste Discharge to Land

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

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

4. Technical and monitoring reports specified in this Order are requested pursuant to Section 13267 of the Water Code. Failing to furnish the reports by the specified deadlines and falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the discharger.
5. The discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Note: Current addresses for all three Regional Board offices may be found on the internet at http://www.swrcb.ca.gov/rwqcb5/contact_us.

or the current address if the office relocates.

C. Provisions for Monitoring:

1. All analyses shall be made in accordance with the latest edition of: (1) *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA 600 Series) and (2) *Test Methods for Evaluating Solid Waste* (SW 846-latest edition). The test method may be modified subject to application and approval of alternate test procedures under the Code of Federal Regulations (40 CFR 136).
2. Chemical, bacteriological, and bioassay analysis shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to EPA guidelines or to procedures approved by the Board.

Unless otherwise specified, all metals shall be reported as Total Metals.

3. The discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to

Waste Discharge to Land

complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Record of monitoring information shall include:

- a. the date, exact place, and time of sampling or measurements,
 - b. the individual(s) who performed the sampling of the measurements,
 - c. the date(s) analyses were performed,
 - d. the individual(s) who performed the analyses,
 - e. the laboratory which performed the analysis,
 - f. the analytical techniques or methods used, and
 - g. the results of such analyses.
4. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated at least yearly to ensure their continued accuracy.
 5. The discharger shall maintain a written sampling program sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the discharger shall be familiar with the sampling plan.
 6. The discharger shall construct all monitoring wells to meet or exceed the standards stated in the State Department of Water Resources *Bulletin 74-81* and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.22

D. Standard Conditions for Facilities Subject to California Code of Regulations, Title 23, Division 3, Chapter 15 (Chapter 15)

1. All classified waste management units shall be designed under the direct supervision of a California registered civil engineer or a California certified engineering geologist. Designs shall include a Construction Quality Assurance Plan, the purpose of which is to:
 - a. demonstrate that the waste management unit has been constructed according to the specifications and plans as approved by the Board.
 - b. provide quality control on the materials and construction practices used to construct the waste management unit and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.
2. Prior to the discharge of waste to any classified waste management unit, a California registered civil engineer or a California certified engineering geologist must certify that the waste management unit meets the construction or prescriptive standards and performance goals in Chapter 15, unless an engineered alternative has been approved by the Board. In the case of an engineered alternative, the registered civil engineer or a certified engineering geologist must

Waste Discharge to Land

certify that the waste management unit has been constructed in accordance with Board-approved plans and specifications.

3. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the waste management units.
4. Closure of each waste management unit shall be performed under the direct supervision of a California registered civil engineer or a California certified engineering geologist.

E. Conditions Applicable to Discharge Facilities Exempted from Chapter 15 Under Section 2511

1. If the discharger's wastewater treatment plant is publicly owned or regulated by the Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to California Code of Regulations, Title 23, Division 4, Chapter 14.
2. By-pass (the intentional diversion of waste streams from any portion of a treatment facility, except diversions designed to meet variable effluent limits) is prohibited. The Board may take enforcement action against the discharger for by-pass unless:
 - a. (1) By-pass was unavoidable to prevent loss of life, personal injury, or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass. Severe property damage does not mean economic loss caused by delays in production); and
 - (2) There were no feasible alternatives to by-pass, such as the use of auxiliary treatment facilities or retention of untreated waste. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a by-pass that would otherwise occur during normal periods of equipment downtime or preventive maintenance; or
 - b. (1) by-pass is required for essential maintenance to assure efficient operation; and
 - (2) neither effluent nor receiving water limitations are exceeded; and
 - (3) the discharger notifies the Board ten days in advance.

The permittee shall submit notice of an unanticipated by-pass as required in paragraph B.1. above.

3. A discharger that wishes to establish the affirmative defense of an upset (see definition in E.6 below) in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that:

Waste Discharge to Land

- a. an upset occurred and the cause(s) can be identified;
- b. the permitted facility was being properly operated at the time of the upset;
- c. the discharger submitted notice of the upset as required in paragraph B.1. above; and
- d. the discharger complied with any remedial measures required by waste discharge requirements.

In any enforcement proceeding, the discharger seeking to establish the occurrence of an upset has the burden of proof.

4. 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 Board by **31 January**.
5. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to disposal. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
6. Definitions
 - a. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper action.
 - b. The monthly average discharge is the total discharge by volume during a calendar month divided by the number of days in the month that the facility was discharging. This number is to be reported in gallons per day or million gallons per day.

Where less than daily sampling is required by this Order, the monthly average shall be determined by the summation of all the measured discharges by the number of days during the month when the measurements were made.

- c. The monthly average concentration is the arithmetic mean of measurements made during the month.
- d. The "daily maximum" **discharge** is the total discharge by volume during any day.

Waste Discharge to Land

- e. The “daily maximum” **concentration** is the highest measurement made on any single discrete sample or composite sample.
- f. A “grab” sample is any sample collected in less than 15 minutes.
- g. Unless otherwise specified, a composite sample is a combination of individual samples collected over the specified sampling period;
 - (1) at equal time intervals, with a maximum interval of one hour
 - (2) at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

7. Annual Pretreatment Report Requirements:

Applies to dischargers required to have a Pretreatment Program as stated in waste discharge requirements.)

The annual report shall be submitted **by 28 February** and include, but not be limited to, the following items:

- a. A summary of analytical results from representative, flow-proportioned, 24-hour composite sampling of the influent and effluent for those pollutants EPA has identified under Section 307(a) of the Clean Water Act which are known or suspected to be discharged by industrial users.

The discharger is not required to sample and analyze for asbestos until EPA promulgates an applicable analytical technique under 40 CFR (Code of Federal Regulations) Part 136. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto.

- b. A discussion of Upset, Interference, or Pass Through incidents, if any, at the treatment plant which the discharger knows or suspects were caused by industrial users of the system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any

Waste Discharge to Land

additional limitations, or changes to existing requirements, may be necessary to prevent Pass Through, Interference, or noncompliance with sludge disposal requirements.

- c. The cumulative number of industrial users that the discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.
- d. An updated list of the discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:
 - (1) Complied with baseline monitoring report requirements (where applicable);
 - (2) Consistently achieved compliance;
 - (3) Inconsistently achieved compliance;
 - (4) Significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);
 - (5) Complied with schedule to achieve compliance (include the date final compliance is required);
 - (6) Did not achieve compliance and not on a compliance schedule;
 - (7) Compliance status unknown.

A report describing the compliance status of any industrial user characterized by the descriptions in items (d)(3) through (d)(7) above shall be **submitted quarterly from the annual report date** to EPA and the Board. The report shall identify the specific compliance status of each such industrial user. This quarterly reporting requirement shall commence upon issuance of this Order.

- e. A summary of the inspection and sampling activities conducted by the discharger during the past year to gather information and data regarding the industrial users. The summary shall include but not be limited to, a tabulation of categories of dischargers that were inspected and sampled; how many and how often; and incidents of noncompliance detected.

Waste Discharge to Land

- f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:
- (1) Warning letters or notices of violation regarding the industrial user's apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations;
 - (2) Administrative Orders regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;
 - (3) Civil actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;
 - (4) Criminal actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
 - (5) Assessment of monetary penalties. For each industrial user identify the amount of the penalties;
 - (6) Restriction of flow to the treatment plant; or
 - (7) Disconnection from discharge to the treatment plant.
- g. A description of any significant changes in operating the pretreatment program which differ from the discharger's approved Pretreatment Program, including, but not limited to, changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority of enforcement policy; funding mechanisms; resource requirements; and staffing levels.
- h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.
- i. A summary of public participation activities to involve and inform the public.
- j. A description of any changes in sludge disposal methods and a discussion of any concerns not described elsewhere in the report.

Duplicate signed copies of these reports shall be submitted to the Board and:

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

and

State Water Resource Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812

Revised January 2004 to update addresses and phone numbers

INFORMATION SHEET

ORDER R5-2015-0108
WOODLAND-DAVIS CLEAN WATER AGENCY
DAVIS WOODLAND REGIONAL WATER TREATMENT FACILITY
YOLO COUNTY

Facility Description

The Woodland-Davis Clean Water Agency (WDCWA) owns and will operate the Davis Woodland Regional Water Treatment Facility (RWTF), a new facility that will treat water from the Sacramento River for distribution to the cities of Woodland and Davis and the University of California, Davis. WDCWA submitted a Report of Waste Discharge (RWD) for the land application of wastewater generated at the RWTF.

Water treatment will consist of flash mixing, sand ballasted clarification, ozonation, granular media filtration, and final disinfection with free chlorine. The treatment system will be equipped to add a number of chemicals at various stages of treatment.

The residual handling facilities include gravity thickeners for the underflow from the sand ballasted clarification process. Underflow from the thickeners will be sent to the solids drying beds for settling/decanting and evaporation. Free water will be decanted and conveyed to the backwash equalization basin, where it will be mixed with filter backwash water and returned to the water treatment process or gravity thickeners. The solids in the drying beds will be allowed to dry for approximately 1 year prior to having its solids removed and put back online. Solids will be hauled to an off-site permitted landfill.

Site-Specific Conditions

The RWTF site elevation ranges from 25 to 39 feet above mean sea level. The facility is currently within the 100-year FEMA floodplain designation. WDCWA is in the process of a Map Revision to have the facility site removed from this designation.

Yolo County has an average annual precipitation of approximately 16.8 inches and a 100-year precipitation of approximately 33.1 inches. The reference evapotranspiration rate for the area is approximately 57.0 inches per year.

The area surrounding the RWTF is a mix of municipal, commercial/business, and agricultural properties. The City of Woodland Water Pollution Control Facility is located just south of the RWTF. Rice and alfalfa are grown on the nearby properties. Reclamation District 2035 supplies irrigation water from the Sacramento River to the surrounding area.

Groundwater Conditions

The site is located in an area where there are two predominate soil series: Sycamore complex and Pescadero silty clay. The Sycamore soil series consist of silty clay loam and silty clay with a moderately high saturated hydraulic conductivity (0.20 to 0.57 in/hr).

The Pescadero soil series consist of silty clay, silty clay loam, and stratified loam to silty clay loam with a very low to moderately low saturated hydraulic conductivity (0.0 – 0.06 in/hr).

Based on available information, depth to groundwater ranges approximately 10 to 20 feet below the ground surface. Groundwater elevation data monitored by the Woodland Water Pollution Control Facility show that the groundwater flow direction is generally towards the east and northeast. Depth to groundwater and groundwater flows may be influenced by nearby irrigation pumping. In general, pre-discharge groundwater quality is poor with respect to salinity constituents (particularly TDS, sodium, and chloride).

Basin Plan, Beneficial Uses, and Regulatory Considerations

Local drainage is to the Yolo Bypass. The beneficial uses of the Yolo Bypass, as stated in the Basin Plan, are agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat. 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 Analysis

Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS), ammonia, nitrate, and iron.

TDS. Based on the high quality source water, low salinity of the discharge, and site-specific soil and groundwater conditions, the discharge is not likely to degrade groundwater quality due to increased salinity.

Ammonia and Nitrate. Aqueous ammonia used to treat the raw water is likely to volatilize during the treatment process; and therefore, the discharge to the drying beds is not likely to degrade groundwater quality due to increased nitrate. In addition, any ammonia concentration in the wastewater is likely to volatilize due to the large surface area of the drying beds. Operation of the clay-lined sludge beds with a continuous return of wastewater and yearly solids removal will not cause nitrate concentrations in groundwater to exceed the water quality objective.

Iron. Any iron added to the treatment process will convert to a solid state and will be captured in the solids drying beds and hauled off site each year. Therefore, although the discharge could degrade groundwater quality due to increased dissolved iron, it is unlikely that it would cause exceedance of the water quality objective.

The Discharger provides treatment and control of the discharge that incorporates:

- a. High quality source water;
- b. Engineered clay-lined solids drying beds.
- c. Removal of solids from the solids drying bed for off-site disposal.

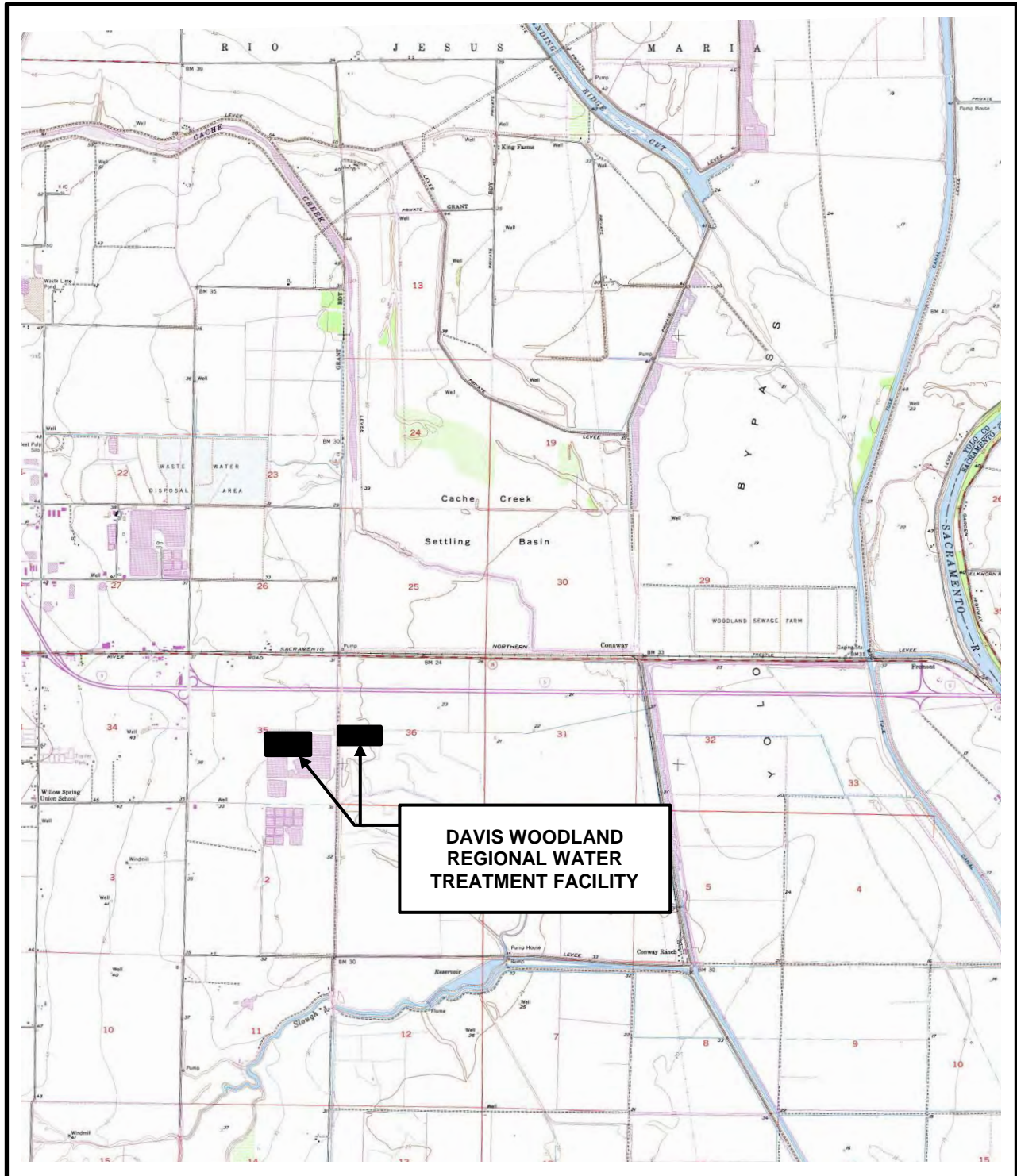
These practices are best practicable control for this type of waste. Therefore, the groundwater limitations of this Order allow degradation of groundwater quality, but not pollution.

Discharge Prohibitions, Specifications, Limitations and Provisions

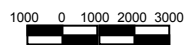
This Order establishes groundwater limitations for the facility that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. Based on the high quality source water, low salinity of the discharge, and high salinity of the existing shallow groundwater, the discharge has minimal potential to degrade groundwater quality if properly managed. Therefore, groundwater monitoring is not necessary unless the discharge changes significantly or new information regarding the threat to groundwater quality becomes available.

This Order requires submittal of a *Solids Management Plan* that shall include a detailed plan for solids removal, drying, and disposal.

The Monitoring and Reporting Program is designed to verify compliance with the limitations and requirements of the WDRs.

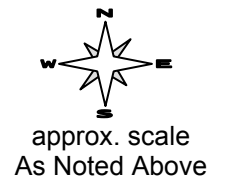


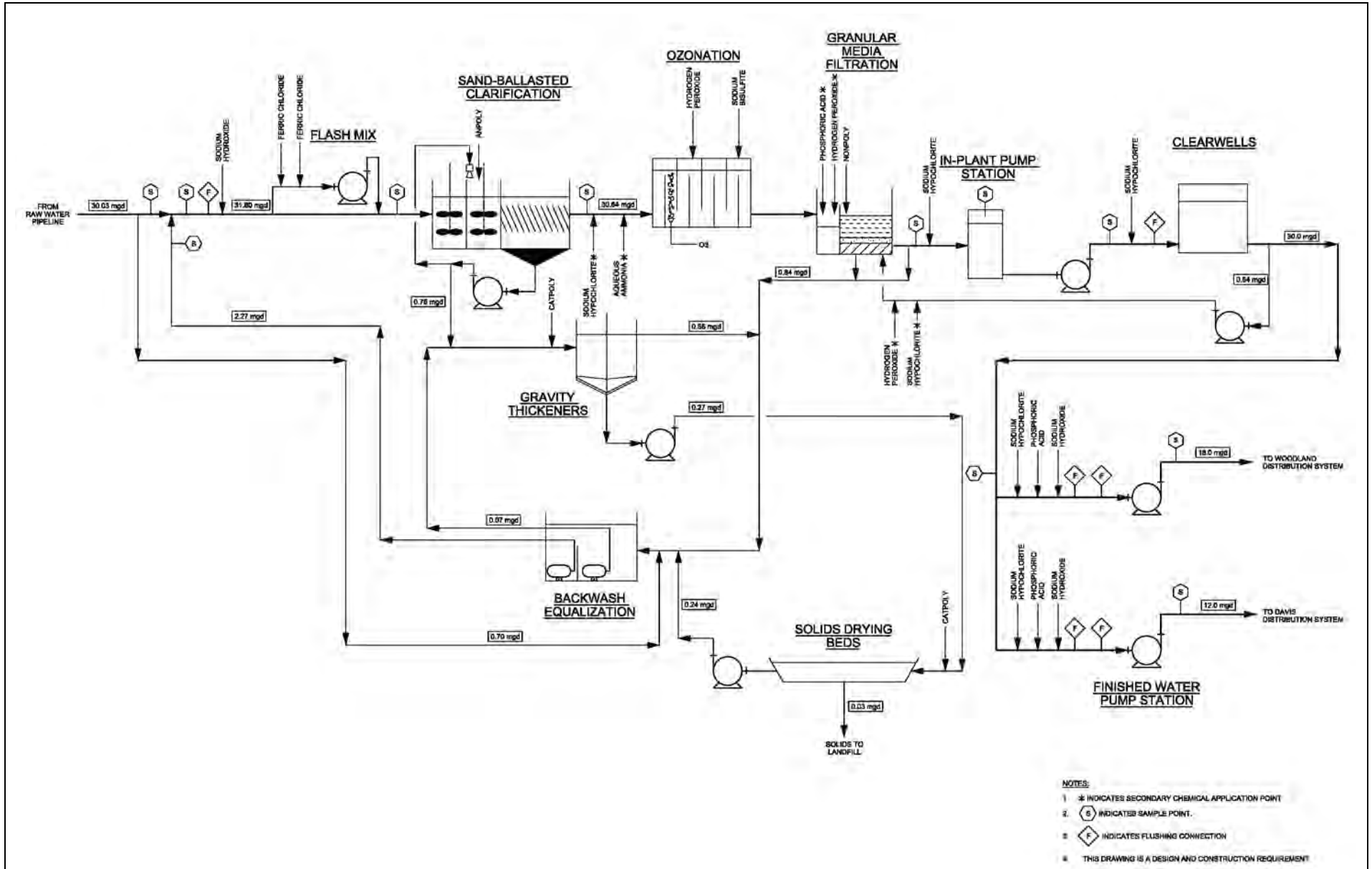
SCALE



Drawing Reference:
U.S.G.S
Grays Bend Quadrangle
Topographic Map
7.5 Minute Quad

SITE LOCATION MAP
WOODLAND-DAVIS CLEAN WATER AGENCY
DAVIS WOODLAND RWTF
YOLO COUNTY





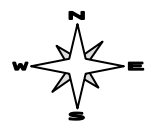
Approximate Scale:
NO SCALE

Drawing Reference:
Report of Waste Discharge
June 2014

PROCESS FLOW SCHEMATIC
WOODLAND-DAVIS CLEAN WATER AGENCY
DAVIS WOODLAND RWTF
YOLO COUNTY



SITE FACILITY MAP
WOODLAND DAVIS CLEAN WATER AGENCY
DAVIS WOODLAND RWTF
YOLO COUNTY



Not to Scale