CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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[TENTATIVE] WASTE DISCHARGE REQUIREMENTS ORDER R5-2025-XXXX

ORDER INFORMATION

Order Type(s):	Waste Discharge Requirements (WDRs)
Status:	Tentative
Program:	Non-15 Discharge to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	City of Lodi
Facility:	White Slough Water Pollution Control Facility
Address:	12751 North Thornton Road, Lodi
County:	San Joaquin
Parcel Nos.:	055-120-03; 055-120-08; 055-120-11; 055-130-04; 055-130-13; 055-130-16; 055-150-15; 055-150-29; 055-190-01
WDID:	5B390103002
CIWQS Place ID:	272444
Prior Order(s):	R5-2007-0113-01

CERTIFICATION

I, PATRICK PULUPA, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Central Valley Region, on DD Month Year.

_____
PATRICK PULUPA, Executive Officer

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GLOSSARY

µg/L	micrograms per liter
µmhos/cm	micro mhos per centimeter
ADWF	Average Dry Weather Flow
Antidegradation Policy	Statement of Policy with Respect to Maintaining High Quality Waters in California, State Water Board Resolution 68-16
Basin Plan	Water Quality Control Plan for the Sacramento River and San Joaquin River Basins
bgs	below ground surface
BOD_5	[5-day] biochemical oxygen demand at 20 degrees Celsius
BPTC	best practicable treatment or control
CaCO3	calcium carbonate
CAF	confined animal feeding
CEQA	California Environmental quality Act, Public Resources Code section 21000 et seq.
CIMIS	California Irrigation Management Information System
CIWQS	California Integrated Water Quality System
CV-SALTS	Central Valley Salinity Long-Term Sustainability
CWC	California Water Code
DDW	State Water Resources Control Board, Division of Drinking Water
Delta	Sacramento-San Joaquin Delta
DO	dissolved oxygen
DWR	Department of Water Resources
EC	electrical conductivity at 25 ^oC
EPA	United States Environmental Protection Agency
Facility	Water Pollution Control Facility
FEMA	Federal Emergency Management Agency
FDS	fixed dissolved solids
ft	feet
gpd/sf	gallons per day per square foot
gpm	gallons per minute

LAA	land application area
lb/ac/day	pound per acre per day
MCL(s)	maximum contaminant level(s)
MDB&M	Mount Diablo Base and Meridian
MDL	method detection limit
mg/L	milligrams per liter
mJ/cm^2	millijoules per square centimeter
mL/L	milliliter per liter
MG	million gallons
MGD	millions of gallons per day
MPN	most probable number
MRP	Monitoring and Reporting Program
MUN	municipal and domestic supply (Basin Plan beneficial use designation)
MW	monitoring well
NA	Not Available
NCPA	Northern California Power Agency
ND	non-detect
NOA	Notice of Applicability
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
PAN	plant available nitrogen
PCP	Pacific Coast Producers
P&O Study	Prioritization and Optimization
RWD	Report of Waste Discharge
SERC	(California) State Emergency Response Commission
sf	square foot or square feet
SSO	sanitary sewer overflow
SSO General Order	State Water Board Order 2022-0103-DWQ
State Water Board	California State Water Resources Control Board
TDS	total dissolved solids

Unified Guidance	Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (EPA, 2009)
USC	United States Code
U.S. EPA	United States Environmental Protection Agency
UV	ultraviolet
VCD	San Joaquin County Mosquito and Vector Control District
WDRs	Waste Discharge Requirements
WQO(s)	water quality objective(s)

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) hereby finds as follows:

Introduction

1. The City of Lodi (Discharger) owns and operates the White Slough Water Pollution Control Facility (Facility), which is located at 12751 Thornton Road in Lodi, San Joaquin County. The Facility, including wastewater ponds and land application areas (LAAs) is within Sections 23, 24, 25, and 26, Township 3 North, Range 5 E, Mount Diablo Base and Meridian (MDB&M) and Section 30, Township 3 North, Range 6 East MDB&M. The Facility's location is depicted on the Site Location Map in **Attachment A.**

2. The Facility, including wastewater ponds and LAAs, is located on San Joaquin County Assessor Parcel Numbers (APNs) 055-120-03, 055-120-08, 055-120-11, 055-130-04, 055-130-13, 055-130-16, 055-150-15, 055-150-29, and 055-190-01.

3. As owner and operator of the Facility, the Discharger is responsible for compliance with the waste discharge requirements (WDRs) specified in this Order.

4. The following materials are attached and incorporated as a part of this Order.

   a. Attachment A – Site Location Map

   b. Attachment B – Site Map

   c. Attachment C – Process Flow Diagram

   d. Attachment D –Monitoring Well Location Map

   e. Attachment E – Land Application Area Quadrants

   f. Information Sheet

   g. Standard Provisions & Reporting Requirements dated 1 March 1991 (SPRRs)

5. Also attached is **Monitoring and Reporting Program Order R5-2025-XXXX** (MRP), which requires monitoring and reporting for discharges regulated under these WDRs. The Discharger shall comply with the MRP, and any subsequent revisions thereto, as ordered by the Executive Officer or adopted by the Central Valley Water Board.

Regulatory History

6. On 14 September 2007, the Central Valley Water Board adopted WDRs Order R5-2007-0113 (National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079243), which prescribed WDRs for the Facility, including its discharge of tertiary treated, ultraviolet (UV) disinfected water to Dredger Cut, a part of the Sacramento-San Joaquin Delta (Delta). Order R5-2007-0113 also regulated the discharge of secondary undisinfected water to 40-acres of unlined storage ponds, irrigation of the Facility LAAs, and distribution of tertiary treated recycled water supply to the Northern California Power Agency (NCPA) power plants and the San Joaquin County Mosquito and Vector Control District (VCD) fish-rearing ponds.

7. On 4 October 2013, the Central Valley Water Board adopted R5-2013-0125 (NPDES Permit No. CA0079243) to regulate the surface water discharge to Dredger Cut. Therefore, on the same date, the Central Valley Water Board adopted Order R5-2013-0126, which amended Order R5-2007-0113 to remove the surface water discharge requirements and make updates to the land discharge requirements, including several groundwater limitation compliance measures. The amended order was assigned Order No. R5-2007-0113-01.

8. On 29 August 2018, the Discharger submitted a Notice of Intent (NOI) for regulatory coverage under State Water Resources Control Board (State Water Board) Order WQ 2016-0068-DDW, *Water Reclamation Requirements for Recycled Water Use* (Recycled Water General Order) for a new storage pond and fill station for tertiary-treated recycled water. The NOI included an updated Title 22 Engineering Report, dated August 2018, to replace the Discharger's previous 2011 Title 22 Engineering Report and subsequent amendments thereto. On 5 September 2018, the State Water Board Division of Drinking Water (DDW) issued an approval letter stating that the 2018 Title 22 Report was complete and compliant with the applicable requirements of California Code of Regulations, title 22 (Title 22). On 18 December 2018, the Central Valley Water Board issued the Discharger NOA WQ-2016-0068-DDW-R5007 for regulatory coverage of the tertiary recycled water pond that was constructed in 2018 and a future recycled water fill station.

9. On 30 May 2024, the Discharger submitted a Report of Waste Discharge (RWD) with a request for issuance of amended or revised WDRs to regulate all of the Facility's land application activities under a single WDRs order.

Existing Facility and Discharge

10. The Discharger owns and operates two separate wastewater collection systems, a municipal wastewater line and an industrial wastewater line. The industrial wastewater line collects primarily food processing wastewater from Pacific Coast Producers (PCP), a nearby fruit processing facility that primarily discharges cannery waste from June through September of each year.

11. The Facility was originally constructed in 1966, and treatment consists of a headworks with influent screening and grit removal, primary sedimentation, biological nitrogen removal through activated sludge treatment, secondary clarification, cloth media filtration, and UV light disinfection.

12. The Facility is permitted under WDRs General Order R5-2023-0025, *WDRs for Municipal Wastewater Dischargers that Meet Objectives/Criteria at the Point of Discharge to Surface Water* (NPDES Permit No. CAG585001) (Municipal General Order) (enrollee no. R5-2023-0025-010) for surface discharge of 8.5 million gallons per day (MGD) of disinfected, filtered effluent to Dredger Cut. Typically, the Facility only discharges to surface water from September through June.

13. From mid-April through September or early October, undisinfected secondary domestic effluent is pumped to 40-acres of unlined secondary storage ponds, from which the effluent is used to irrigate crops that are grown on approximately 726 acres of the Discharger-owned property surrounding the Facility.

14. Industrial wastewater is screened as part of the Discharger's industrial pretreatment program prior to discharging to the collection system. PCP cannery waste is required to meet discharge limits for metals, pH, and BOD pursuant to PCP's Discharger-issued industrial discharge permit. Dischargers to the industrial collections system must meet a pH limit between 6 and 10 standard units. Metals and BOD limits are displayed in the table below.

Table 1. Industrial Pretreatment Limits

Parameter	Daily maximum (mg/L)	Limit during canning season (million gallons) or (lb)	Limit during non-canning season (million gallons or lb)
Arsenic	2.5		
Cadmium	0.5		
Chromium, total	3.0		
Cyanide, total	1.4		
Lead	4.0		
Mercury	0.8		
Nickel	13		
Silver	2.9		
Zinc	3.5		
BOD		(121) (2,610,000)	(2) (5,000)

15. During winter months, industrial wastewater is sent to the secondary storage ponds. During summer months, when cannery flows are the highest, industrial wastewater is sent directly to the LAAs for irrigation. During the canning season, groundwater from an onsite irrigation well is occasionally blended with industrial wastewater upstream of the headworks facility to protect piping and headworks

infrastructure from low pH conditions caused by high strength cannery wastewater.

16. The Discharger owns 1,040 acres of property around the Facility. 816 acres of the existing property is divided into 27 fields, which are leased to local farmers for the agricultural production of fodder crops (typically corn, wheat, Sudan grass, alfalfa, or orchard grass mixture). Of the total 816 acres, the Discharger can apply recycled water and industrial wastewater to 726 acres. The remaining 90 acres of LAAs are irrigated only with groundwater from an onsite irrigation well.

17. The Facility is permitted under their NPDES permit for an Average Dry Weather Flow (ADWF) of 8.5 MGD, but the current municipal influent ADWF to the Facility is 4.5 to 4.6 MGD. Order R5-2013-0113-01 did not have an industrial flow limit as discharge to the LAAs was limited by hydraulic loading. However, the Discharger's water balance demonstrates that the land application areas have an irrigation demand of 7.2 MGD during the month with highest demand (July). The Monthly influent flows from 2019-2023 are reported in Table 2.

18. Table 2. Average Influent Flows 2019 - 2023

Month	**Average Monthly Municipal Influent Flow (MGD)**	**Average Monthly Industrial Influent Flow (MGD)**	**Total Monthly Average Influent Flow (MGD)**
January	4.61	0.08	4.68
February	4.56	0.10	4.65
March	4.51	0.15	4.66
April	4.50	0.20	4.70
May	4.56	0.20	4.76
June	4.54	0.60	5.14
July	4.53	1.05	5.58
August	4.59	1.62	6.21
September	4.58	0.78	5.36
October	4.56	0.27	4.83
November	4.52	0.19	4.71
December	4.61	0.15	4.76

19. Undisinfected secondary wastewater is monitored weekly for BOD, TSS, EC, and quarterly for TDS. Undisinfected secondary effluent is monitored for BOD and settleable solids. A summary of the municipal influent water quality and the undisinfected secondary effluent water quality discharged to ponds from 2019 through 2023 is reported in Table 3:

Table 3. Summary of Domestic Influent and Secondary Effluent Water Quality 2019-2023

Parameter	Units	Influent Average	Influent Maximum	Secondary Effluent Average	Secondary Effluent Maximum
BOD	mg/L	280	490	11	59
TSS	mg/L	210	510	-	-
EC	µmhos/cm	730	1090	-	-
TDS	mg/L	440	550	-	-
Settleable Solids	mL/L	-	-	0.12	1

20. The Discharger, as part of MRP Order R5-2013-0126, monitored industrial influent weekly for EC and TDS, quarterly for total nitrogen, ammonia, nitrate plus nitrate, and standard minerals, and annually for heavy metals. A summary of the industrial influent water quality monitoring from 2019 – 2023 is reported in Table 4.

Table 4. Summary of Industrial Influent Water Quality 2019-2023

Parameter	Units	Average	Maximum
TDS	mg/L	1,040	5,600
EC	µmhos/cm	1,030	4,220
Ammonia (as N)	mg/L	2.3	9.8
Total Nitrogen	mg/L	17	48
Nitrate (as N)	mg/L	0.31	1.8
Nitrate + Nitrite (as N)	mg/L	0.41	3.0
Arsenic	µg/L	2.6	6.3
Chromium	µg/L	1.3	2.1
Copper	µg/L	23	87
Iron, Dissolved	µg/L	110	280
Lead, Dissolved	µg/L	0.26	0.66
Manganese, Dissolved	µg/L	85	260
Mercury	µg/L	3.4	13
Zinc	µg/L	32	64
Boron	mg/L	0.22	0.77
Bromide	mg/L	0.98	6.7
Fluoride	mg/L	7.9	76
Iron	mg/L	1.8	12
Manganese	µg/L	180	690
Sodium	mg/L	89	210
Chloride	mg/L	100	510
Sulfate	mg/L	23	72
Total Alkalinity (as CaCO3)	mg/L	200	1,200

Parameter	Units	Average	Maximum
Bicarbonate Alkalinity (as CaCO3)	mg/L	220	1,400
Carbonate Alkalinity (as CaCO3)	mg/L	0.34	0.50
Hydroxide Alkalinity (as CaCO3)	mg/L	0.34	0.50
Total Hardness (as CaCO3)	mg/L	150	280
Cation/Anion Balance	mg/L	30	80

21. MRP Order R5-2013-0126 required monitoring of the Secondary Storage Ponds weekly for DO, pH, BOD, TDS, and EC, monthly for ammonia, nitrate, and nitrite, and quarterly for metals and Standard Minerals. Grab samples from each pond are collected and combined to create one composite sample per monitoring event. The secondary storage ponds primarily store secondary undisinfected effluent but, during the winter months, industrial wastewater is also discharged to the ponds. A summary of secondary storage pond water quality from 2019 through 2023 is reported in Table 5:

Table 5. Summary of Secondary Storage Pond water Quality, 2019-2023

Parameter	Units	Average	Maximum
pH	--	8.3	10
BOD	mg/L	22	160
TDS	mg/L	411	800
EC	µmhos/cm	673	930
Ammonia (as N)	mg/L	6.7	26
Nitrate (as N)	mg/L	1.3	3.8
Nitrite (as N)	mg/L	0.32	2.7
Arsenic	µg/L	2.9	5.4
Cadmium	µg/L	0.13	0.20
Chromium	µg/L	1.3	2.9
Copper	µg/L	4.6	8.7
Lead	µg/L	0.44	1.0
Mercury	µg/L	0.11	0.20
Molybdenum	µg/L	3.6	5.0
Nickel	µg/L	3.3	5.4
Selenium	µg/L	2.6	22
Zinc	µg/L	32	77
Boron	mg/L	11	210
Calcium	mg/L	25	32
Iron	µg/L	335	780
Magnesium	mg/L	8.6	12
Manganese	µg/L	44	110

Parameter	Units	Average	Maximum
Potassium	mg/L	21	29
Sodium	mg/L	66	90
Chloride	mg/L	71	99
Phosphorous	mg/L	4.1	19
Total Alkalinity (as CaCO3)	mg/L	152	200
Bicarbonate Alkalinity (as CaCO3)	mg/L	16	77
Carbonate Alkalinity (as CaCO3)	mg/L	143	200
Hydroxide Alkalinity (as CaCO3)	mg/L	0.38	1.00
Total Hardness (as CaCO3)	mg/L	99	130
Cation/Anion Balance	percent	7.1	24

22. During the summer and fall months, the Discharger uses supplemental irrigation water from an onsite irrigation well (monitoring location IRR-001) to meet irrigation demands. The Discharger also has surface water rights (License 3906) which allow the Discharger to pump water from Dredger Cut to be used as supplemental irrigation, however this source has not been used in many years. Supplemental irrigation flows make up between 11 to 18 percent of total irrigation flows. The well water is monitored annually for TDS (monitoring location IRR-001). The average TDS concentration at monitoring location IRR-001 from 2019 – 2023 was 614 mg/L.

23. During the irrigation season, screened industrial flows are sent directly to the LAAs for irrigation. Blended irrigation flows are a combination of flows pumped from the secondary storage ponds, industrial influent flows, supplemental irrigation flows from an onsite groundwater well, and tailwater return flows. These WDRs require monitoring of blended irrigation water quality at monitoring location LND-001. A summary of blended irrigation water quality from 2019 through 2023, as provided in the RWD, is shown in Table 6, along with comparable actual and potential water quality objectives (WQOs) for the receiving groundwater. WQOs are based on the following:

    - WQOs for nitrate, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, fluoride, iron, manganese, and sulfate are Primary Maximum Contaminant Levels (MCLs) and Secondary MCLs.

    - WQOs for TDS, EC, chloride, and sodium are Agricultural Water Quality Goals, which are more stringent than the Secondary MCLs for these constituents.

Table 6. Summary of Blended Irrigation Water Quality, 2019-2023

Parameter	Units	Average	Maximum	WQO
pH		7.0	9.4	NA
TDS	mg/L	640	2,620	450
Fixed Dissolved Solids (FDS)	mg/L	340	1,630	NA
EC	µmhos/cm	770	3,670	700
BOD	mg/L	550	5,170	NA
Total Nitrogen	mg/L	16	65	NA
Nitrate (as N)	mg/L	1.7	7.2	10
Ammonia (as N)	mg/L	5.8	41	NA
Arsenic	µg/L	3.0	7.1	10
Cadmium	µg/L	0.098	1.1	5
Chromium	µg/L	3.7	23	50
Copper	µg/L	10	67	1300
Lead	µg/L	11	520	15
Mercury	µg/L	0.070	0.26	2
Molybdenum	µg/L	2.4	5.0	NA
Nickel	µg/L	4.8	23	100
Selenium	µg/L	1.1	7.2	50
Zinc	µg/L	54	360	500
Boron	mg/L	11	290	NA
Bromide	mg/L	0.43	5.6	NA
Calcium	mg/L	30	72	NA
Chloride	mg/L	70	180	106
Fluoride	mg/L	11	150	2
Iron	µg/L	650	3,400	300
Magnesium	mg/L	12	31	NA
Manganese	µg/L	85	770	50
Potassium, Total	mg/L	4.2	21	NA
Phosphorous, Total	mg/L	59	370	NA
Sodium	mg/L	67	210	69
Sulfate	mg/L	28	80	250
Total Alkalinity (as CaCO3)	mg/L	140	300	NA
Bicarbonate Alkalinity (as CaCO3)	mg/L	150	300	NA
Carbonate Alkalinity (as CaCO3)	mg/L	0.21	0.50	NA
Hydroxide Alkalinity (as CaCO3)	mg/L	0.21	0.50	NA

Parameter	Units	Average	Maximum	WQO
Total Hardness (as CaCO3)	mg/L	120	320	NA
Cation/Anion Balance	percent	19	83	NA

24. Solids captured in Facility are thickened in a dissolved air flotation tank, treated to Class B biosolids pathogen standards using anaerobic digesters, stabilized in concrete-lined sludge lagoons, and then dewatered with either rotary presses or a screw press. The Discharger land applies dewatered class B biosolids to select LAAs between cropping cycles as a soil amendment. Biosolids applications are rotated yearly and dependent on crop type and loading estimates. Previous disposal practices included applying liquid slurry of biosolids directly to LAAs, but this practice has been discontinued. Typically, all biosolids generated at the Facility are land applied. On average, 680 dry metric tons of biosolids were generated and applied per year from 2019 -2023.

25. The Discharger follows a wintertime management plan and implements best management practices to minimize any wintertime runoff. Biosolids applied in the springtime are applied after flood risk has passed, and all runoff from the LAAs, including stormwater runoff, is captured year-round through a tailwater collection system.

26. WDRs Order R5-2007-0113-01 limited cumulative loading to the LAAs at 200 lb/acre/day BOD as a cycle average. Nitrogen loading is limited to agronomic rates Loading limits for each cropping cycle are planned and evaluated in the Discharger's Cropping and Irrigation Annual Monitoring Report and Plan.

27. WDRs Order R5-2007-0113-01 did not limit salinity loading to the LAAs, however the Discharger was required to report flow-weighted annual average TDS concentrations and loading rates in their Cropping and Irrigation Annual Monitoring Report and Plan. A summary of the TDS concentrations and loadings from 2020 to 2024 are shown in Table 7.

Table 7. Historical TDS Concentrations and Loadings

Year	Flow-Weighted Annual Average TDS Concentration (mg/L)	Annual Average TDS Field Loading (lb/ac/year)	Annual Average FDS Field Loading (lb/ac/year)
2024	767	5925	3521
2023	675	4078	2557
2022	676	5485	2682
2021	716	4661	2670
2020	667	4822	2265
Average	700	4994	2739

Planned Changes to the Facility

28. The Discharger is implementing an Irrigation Conveyance Replacement Project, which is a multi-stage upgrade to the Facility LAA irrigation system. The project will include replacement of the concrete irrigation ditch with a new irrigation pipeline, which will reduce water losses and allow the Discharger to more accurately define the flows reaching the LAAs.

29. The Discharger is also planning upgrades to process equipment including replacement of the South Electric Building, replacement of aeration panels with disk diffusers, and upgrades to the UV wiper system.

30. The Discharger is in the preliminary planning stages of supplying tertiary recycled water to a new, privately-owned hydrogen gas production facility that will be located on a portion of the Discharger's LAAs. The facility is anticipated to occupy 130 acres of land and have a demand of 2.8 MGD of tertiary recycled water from the Facility. The Discharger proposes to reduce or eliminate surface water discharge, reduce annual recycled water irrigation flows to the LAAs by up to 230 million gallons (MG), and increase supplemental groundwater irrigation flows up to 150 MG. The Discharger's preliminary water balance demonstrates that under this future scenario, there is only sufficient blended irrigation water to irrigate 260 acres of LAAs. The Discharger has also considered scenarios that use their water rights to supplement irrigation with surface water from Dredger Cut. The change in blended irrigation water, with a higher percentage of industrial wastewater applied and a reduction in LAA acreage, could have an impact on loading rates and, therefore, the Discharger will be required to submit a technical report, as described in Provision M.4, prior to removing any LAA from service.

Water Recycling Considerations

31. Undisinfected domestic wastewater contains human pathogens that are typically measured using total or fecal coliform organisms as indicator organisms.

32. DDW, which is charged with establishing drinking water quality standards for the protection of public health, has promulgated criteria for the use of recycled water throughout California, codified as Title 22 section 60301.050 et seq.

33. The Discharger's reuse facilities are all located on the approximately 1,000 acres of Discharger-owned property that surrounds the Facility. Recycled water uses include agricultural irrigation reuse, cooling water and steam generation supply for the NCPA power plant facilities, and supply water for fish-rearing ponds owned by the VCD.

34. As described in Finding 10, the Discharger has obtained DDW approval of its 2018 Title 22 Engineering Report, which describes the Facilities' current recycled water operations.

35. This Order regulates the production and use of undisinfected secondary water to the Discharger-owned LAAs, the four undisinfected secondary storage ponds, and the tertiary recycled water storage pond. This Order requires that the secondary effluent be used for irrigation on crops on the Discharger-owned LAAs in accordance with Title 22 section 60304.

36. Distribution and use of tertiary-treated effluent from the Facility, which was previously regulated under R5-2007-0113-01, is now regulated under the Recycled Water General Order (enrollee number WQ-2016-0068-DDW-R5027).

37. The discharges authorized herein are consistent with State Water Board Resolution 2009-0011, *Policy for Water Quality Control for Recycled Water* (Recycled Water Policy), as amended per Resolutions 2013-0003 and 2018-0057, and with Central Valley Water Board Resolution R5-2009-0028 (*Resolution in Support of Regionalization, Reclamation, Recycling and Conservation for WWTPs*).

Site-Specific Conditions

Topography, Climate and Land Use

38. The Facility treatment plant and secondary and tertiary recycled water storage ponds are located on the west side of the Interstate-5 highway (I-5), approximately 4.5 miles southwest of the City of Lodi. The Facility property also includes two NCPA power plants and VCD fish-rearing ponds, which are supplied with disinfected tertiary recycled water by the Discharger. The 816 acres of Discharger-owned LAAs surrounding the Facility are located on both sides of I-5.

39. Surrounding land uses are primarily agricultural, including confined animal facilities (CAFs). The west side of the Facility LAAs is bordered by the Department of Water Resources (DWR) White Slough Wildlife Area, which contains wetlands and ponds supplied with water from the Delta. The northeastern side of the Facility LAAs is bordered by a CAF, and several other CAFs are located north, east, and south of the Facility.

40. Topography in the vicinity of the Facility has a gentle slope to the southwest. Land surface elevations on the Facility site range from 0 feet above mean sea level (msl), near the western edge of the Facility LAAs, to 10 feet above msl, near the eastern edge of the site. The major Delta waterways located near the Facility are Bishop Cut, White Slough, and Dredger Cut, located to the south of the Facility. The nearest surface water is the Peripheral Canal, which borders the west of the Facility property. The Peripheral Canal is not connected directly to the Delta, and water levels are controlled by precipitation, evaporation, and interactions with the shallow groundwater system. Storm water and agricultural runoff from the Facility and local agricultural areas are redirected to the Facility's storage ponds.

41. Vegetation onsite consists of fodder, fiber, or feed crops grown on the Facility's LAAs, such as alfalfa, orchard grass, Sudan grass, corn, and wheat.

42. The estimated percolation rate for the three equalization ponds, four secondary storage ponds, and tertiary recycled water storage pond, was reported in the RWD to be 13 inches per month. Percolation rates were determined using calibrated water balances for existing conditions.

43. The Facility and a portion of the LAAs located to the west of I-5 are located within the 100-year floodplain of the Delta. The area is in Federal Emergency Management Agency (FEMA) Flood Zone AE with a base flood elevation of 10 feet. Based on information reported in the RWD, the Facility process area, which includes the treatment facilities and secondary storage ponds, is located 0.5 feet above the base 100-year flood elevation

44. The average annual precipitation near the facility is approximately 18 inches and the 100-year 365-day precipitation is approximately 32.6 inches. The reference average evapotranspiration rate for the area is approximately 56 inches per year according to California Irrigation Management Information System (CIMIS) Staten Island Station #242.

45. Based on information from the National Resources Conservation Service's Soil Survey Geographic (SSURGO) database, and as reported in the 2006 *City of Lodi White Slough WPCF Soil and Groundwater Investigation Existing Conditions* report, much of the site is classified as Guard and Devries soils. Guard soil is fine-textured clay loam with slow permeability and Devries soil is coarse textured sandy loam with moderately rapid permeability.

Groundwater Conditions

46. Groundwater at the site ranges from zero feet below ground surface (bgs), near the western edge of the property, to about to about 30 feet bgs, at the eastern edge of the monitoring well network. Groundwater elevations on the western portion of the property fluctuate a few feet seasonally, while elevations on the east of the Facility fluctuate 10 feet seasonally.

47. The horizontal hydraulic gradient across the site is approximately 0.001 – 0.002 ft/ft to the east and southeast. Groundwater recharge is presumed to be impacted by recharge from the Delta and the associated ponds within the DWR White Slough Wildlife Area, which borders the western boundary of the Facility, and by groundwater pumping to the south-east of the Facility.

48. The Facility's groundwater monitoring network currently consists of 15 shallow groundwater monitoring wells that were installed between 1989 and 2014, including eleven onsite wells (WSM-1 - WSM-15), and four offsite wells (WSM-16 – WSM-18, RMW-1). Construction details for the monitoring wells are

summarized in Table 8, and monitoring well locations are shown in Attachment D.

Table 8. Monitoring Well Construction Details

Well Name	Well Completion Date	Top of Casing Elevation, feet NGVD29	Ground Surface Elevation, feet NGVD29	Total Well Depth, feet bgs	Screened Interval, feet bgs
WSM-1	4/13/1989	10.41	8.5	20	5 - 20
WSM-2	4/14/1989	7.43	5	20	5 - 20
WSM-2R	10/6/2014	9.51	9.5	27	7 - 22
WSM-4	4/13/1989	7.89	6	19.5	4.5 - 19.5
WSM-5	4/14/1989	6.82	5	20	5 - 20
WSM-6	6/13/1994	9.92	7.7	20	10 - 20
WSM-7	6/13/1994	11.88	9.2	20	10 - 20
WSM-8	12/20/2000	10.00	6.1	25	10 - 25
WSM-9	12/21/2000	11.52	8	25	10 - 25
WSM-12	4/26/2001	14.03	11.1	50	25 - 50
WSM-14	4/25/2001	6.36	3.8	20	5 - 20
WSM-15	4/26/2001	7.72	4.6	20	5 - 20
WSM-16	4/26/2001	10.24	7.1	20	5 - 20
WSM-17	12/16/2008	28.38	not surveyed	59	34 - 54
WSM-18	12/16/2008	9.92	not surveyed	31	6 - 26
RMW-1	1/17/2003	4.79	2.34	15	4.5 - 15

49. WSM-2R was constructed as a potential replacement for WSM-2 and was found to have similar water quality. It has been monitored in place of WSM-2 since the second quarter of 2021.

50. WSM-1, WSM-2R, WSM-4 through WSM-9, WSM-12, WSM-14, and WSM-15 are located onsite and are routinely monitored for groundwater quality compliance purposes. WSM-16, WSM-17 and WSM-18 are offsite wells that

were historically designated as upgradient wells for determining background groundwater quality. WSM-5, WSM-6, WSM-9, and WSM-12 are located downgradient from the ponds, on the boundaries of the LAAs. Select constituents for these wells are summarized in Table 9 below.

Table 9. Average Groundwater Quality Data 2019 – Q1 2024

Constituent	TDS (mg/L)	EC (µmhos/cm)	Sodium (mg/L)	Chloride (mg/L)	Nitrate as N (mg/L)	Dissolved Manganese (µg/L)	Dissolved Iron (mg/L)
WSM-1	1051	1525	171	87	33	8	0.16
WSM-2/2R	1318	1514	140	104	54	998	0.26
WSM-4	852	1210	94	62	15	272	0.17
WSM-5	804	1245	85	84	12	21	0.46
WSM-6	962	1475	123	131	12	1	0.32
WSM-7	994	1420	96	130	27	50	0.27
WSM-8	642	950	66	56	6	2	0.13
WSM-9	871	1263	127	67	15	1	0.21
WSM-12	903	1328	82	135	24	1	0.19
WSM-14	509	923	89	54	4	125	0.11
WSM-15	1226	1629	147	98	67	621	0.20
UPGRADIENT WELLS							
WSM-16	1218	1627	93	228	44	1	0.29
WSM-17	1147	1536	160	78	5	1	0.26
WSM-18	707	981	37	23	39	5	0.17
WQO	**450**	**700**	**69**	**106**	**10**	**50**	**0.3**

Table Note1: Potential WQOs described in the table above for TDS, EC, sodium, and chloride are Agricultural Use Goals, while actual WQOs for nitrate as N, dissolved manganese, and dissolved iron are primary and secondary MCLs.
Table Note 2: 2019 values for manganese in wells 17 and 18 were excluded from averages as they are considered isolated outliers that heavily skew average values.

51. Except for dissolved manganese and dissolved iron, average offsite upgradient groundwater concentrations for all constituents listed in the table exceed actual and potential WQOs, as applicable, indicating the quality of groundwater in the area is not identified as high-quality water for TDS, EC, sodium, chloride, or nitrate.

52. Concentration trends for onsite wells exceeding average upgradient concentrations for TDS, EC, sodium, nitrate, dissolved manganese, and dissolved iron all demonstrate stable or decreasing concentration trends.

53. Wells WSM-2R, WSM-4, WSM-14, and WSM-15 have concentrations of dissolved manganese that are elevated relative to upgradient well levels and the WQO of 50 µg/L. These wells are all located in the northwestern portion of the Discharger's property (upgradient), which has soils with higher organic content and higher groundwater levels than the rest of the site, contributing to anoxic/anaerobic conditions.

Compliance History

54. The Discharger has received several Notices of Violations from 2020–2023 for exceedances of pond pH limits, and hydraulic, agronomic nitrogen, and BOD loading rates. Many of these issues are being addressed through improved communications between and planning by Discharger staff, consultants, the Discharger's agronomist, and the LAA farmers prior to each planting season to ensure that there will be ample cropping area to accommodate the hydraulic, nitrogen, and BOD loads anticipated in the upcoming cropping cycle.

55. The Discharger did not exceed agronomic nitrogen loading limits during the 2022, 2023, or 2024 cropping cycles. Hydraulic loading rate exceedances can mostly be attributed to variations in water pressure across the irrigation system, which also impact the accuracy of the nitrogen and BOD loading calculations. This Order requires the Discharger to continue documenting violations and proposing modifications to operations to address violations in its Cropping and Irrigation Annual Monitoring Report and Plan.

56. WDRs Order R5-2007-0113-01 included pond pH limits to prevent degradation of groundwater and ensure that operation of the ponds did not create nuisance conditions. Although pond pH levels have exceeded the maximum pH limit of 9, the Discharger has demonstrated, based on sampling from adjacent wells, that these conditions have not caused a nuisance or impacted the pH of underlying groundwater.

Legal Authorities

57. This Order is adopted pursuant to Water Code section 13263, subdivision (a), which provides in pertinent part as follows:

> *The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge…, with relation to the conditions existing in the disposal area or receiving waters upon, or into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241.*

Compliance with section 13263, subdivision (a), including implementation of applicable water quality control plans, is discussed in the findings below.

58. The ability to discharge waste is a privilege, not a right, and adoption of this Order shall not be construed as creating a vested right to continue discharging waste. (Wat. Code, § 13263, subd. (g).)

59. This Order and its associated MRP are also adopted pursuant to Water Code section 13267, subdivision (b)(1), which provides as follows:

> *[T]he 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 … 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.*

60. The reports required under this Order, as well as under the separately issued MRP, are necessary to verify and ensure compliance with these WDRs. The burden associated with such reports is reasonable relative to the need for their submission.

Basin Plan Implementation

Beneficial Uses of Water

61. This Order implements the Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan), which designates beneficial uses for surface and ground waters and establishes WQOs necessary to preserve such beneficial uses.

62. Local drainage is to the San Joaquin River, the existing beneficial uses of which are municipal and domestic supply (MUN), agricultural supply (AGR); industrial process, service supply, and power (PRO, IND, and POW, respectively); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM) and cold freshwater habitat (COLD); migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD).

63. Beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

Water Quality Objectives

64. The Basin Plan establishes narrative WQOs for chemical constituents, taste and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.

65. The Basin Plan's numeric WQO 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-designated groundwater.

66. The Basin Plan's narrative WQOs for chemical constituents, at a minimum, require MUN-designated waters to meet the MCLs specified in 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.

67. Quantifying a narrative WQO 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 to implement the narrative objective.

CV-SALTS Salt and Nitrate Control Programs

68. On 31 May 2018, the Central Valley Water Board adopted Basin Plan amendments incorporating the Salt Control Program and Nitrate Control Program (Resolution R5-2018-0034). The Basin Plan amendments became effective on 17 January 2020. On 10 December 2020, the Central Valley Water Board adopted revision to the Basin Plan amendments with Resolution R5-2020-0057 (https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2020-0057_res.pdf). Those revisions became effective on 10 November 2021. As the Central Valley Water Board moves forward to implement these Programs, this Order may be amended or modified to incorporate new or modified requirements necessary for their implementation. More information regarding the Salt and Nitrate Control Programs can be found on the Central

Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) web page: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

69. Under the Salt Control Program, dischargers that are unable to comply with the stringent salinity requirements may instead be subject to performance-based requirements, as determined appropriate by the Central Valley Water Board, and participate in a basin-wide effort known as the Prioritization and Optimization Study (P&O Study) to develop a long-term salinity strategy for the Central Valley. The Discharger submitted a Notice of Intent on 2 March 2021 and was issued an identification number for the Salt Control Program (**CV-SALTS ID: 3302**). To maintain existing salt discharges and minimize salinity impacts, this Order sets a Salinity Action Level of **875 mg/L for TDS** as a flow-weighted annual average on the discharge to the LAAs.

70. For the Nitrate Control Program, dischargers that are unable to comply with stringent nitrate requirements will be required to take on alternative compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrates. Dischargers may comply with the Nitrate Control Program either individually (Pathway A) or collectively with other dischargers (Pathway B). For the Nitrate Control Program, the Discharger falls within the Eastern San Joaquin Subbasin (subbasin 5-22.01), a Priority 2 Basin. Notices to Comply letters for dischargers in Priority 2 Basins were mailed on 29 December 2023. Dischargers were required enroll in the Nitrate Control Program by 26 February 2025. The Discharger has enrolled and is pursuing Pathway B: Local Management Zone.

71. As these strategies are implemented, the Central Valley Water Board may find it necessary to modify the requirements of these WDRs. As such, this Order may be amended or modified to incorporate any newly applicable requirements to ensure that the goals of the Salt and Nitrate Control Programs are met.

Compliance with Antidegradation Policy

72. State Water Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California* (Antidegradation Policy), which is incorporated as part of the Basin Plan, prohibits the Central Valley Water Board from authorizing degradation of “high-quality waters” unless it is shown that such degradation will be consistent with the maximum benefit to the people of California; will not unreasonably affect present and anticipated future beneficial uses; and will not result in water quality less than as prescribed in applicable policies. Resolution 68-16 further requires that any discharge to existing high-quality waters be required to meet WDRs that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure that pollution and/or nuisance will not occur and that the highest quality consistent with the maximum benefit to the people of the state will be maintained.

73. The Antidegradation Policy applies when the Central Valley Water Board authorizes an activity that will result in discharges of waste to high-quality waters that will degrade the quality of those waters. "High-quality waters" are those waters where water quality is more than sufficient to support beneficial uses designated in the Basin Plan. Whether a water is a high-quality water is established on a constituent-by-constituent basis, which means that an aquifer can be considered a high-quality water with respect to one constituent, but not for others (State Water Board Order No. WQ 91-10). If the activity will not result in the degradation of high-quality waters, the Antidegradation Policy does not apply, and the discharger need only demonstrate that it will use "best efforts" to control the discharge of waste.

74. For the purposes of this Order, constituents in the effluent from the Facility with the potential to degrade groundwater are iron and manganese. An evaluation of salts (EC and TDS) and nitrate is also included below, as these constituents were previously identified as having a potential to degrade groundwater.

75. Table 10 presents a comparison of average blended irrigation water concentrations for select constituents to average concentrations in groundwater, using data from 2019 - 2023. Average concentrations for upgradient water quality are calculated using data from WSM-16, WSM-17 and WSM-18 from 2019-2023. Average concentrations for on-site groundwater quality are calculated using data from WSM-1 through WSM-15 from 2019-2023. Average concentrations for blended irrigation water quality are from sample location LND-001, which represents all water that is applied to LAAs, including recycled water from the storage ponds, industrial wastewater, and supplemental irrigation well water. BOD in the blended irrigation water is listed for reference as it can impact the mobilization of metals in the groundwater, but is not a constituent evaluated for degradation. Constituents were also evaluated using intrawell trend analysis to evaluate degradation in individual wells. A brief discussion of each constituent follows.

Table 10. Antidegradation Summary

Constituent	Average Concentration in Blended Irrigation Water	Average Upgradient Groundwater Quality	Average Onsite Groundwater Quality	WQOs
EC (µmhos/cm)	770	1,377	1,314	700
TDS (mg/L)	640	1019	924	450
Nitrate as N (mg/L)	1.7	31	25	10
Total Nitrogen	16	NA	NA	NA

Constituent	Average Concentration in Blended Irrigation Water	Average Upgradient Groundwater Quality	Average Onsite Groundwater Quality	WQOs
Iron (mg/L)	0.65	NA	NA	0.3
Dissolved Iron (mg/L)	NA	0.25	0.23	0.3
Manganese	85	NA	NA	50
Dissolved Manganese (µg/L)	NA	3	200	50

Table Note 1: 2019 values for manganese in upgradient wells were excluded from averages as they contain outliers (greater than 1000 mg/L) that heavily skew average values.

Table Note 2: NA indicates data is not available.

a. **Salinity (TDS & EC):**

First encountered groundwater is not identified as high-quality with respect to TDS or EC, therefore the Antidegradation Policy does not apply with respect to TDS and EC. Concentrations of TDS and EC in blended irrigation water are generally lower than concentrations in compliance and upgradient wells. Two monitoring wells, WSM 2/2R (TDS) and WSM-15 (TDS and EC) have elevated, stable salinity concentrations relative to upgradient well quality, but all other compliance wells have TDS and EC concentrations less than upgradient concentrations. Results from other compliance wells show stable or decreasing concentrations for salinity compounds, except for WSM-9, which show increasing trends below the upgradient levels. Based on existing data, salinity levels in applied recycled water are not expected to contribute to groundwater degradation with respect to salinity.

Pursuant to the Salt Control Program, the Discharger has elected to participate in the P&O Study; therefore, this Order includes a Salinity Action Level for TDS based on historical effluent data. The purpose of this limit is to ensure the Discharger is implementing appropriate performance-based measures at the Facility and to prevent increases of TDS concentrations in groundwater beyond current conditions. Compliance with the Salinity Action Level shall constitute compliance with the water quality control plan and ensures that the Discharger is maintaining current discharge concentrations and loading levels of salt. This order sets a Salinity Action Level of **875 mg/L for TDS** as a flow-weighted annual

average on the discharge of blended irrigation water to the land application areas. The limit includes an approximately 25 percent safety factor to allow for operational flexibility and water conservation efforts.

b. **Nitrate**:

Average nitrate concentrations exceed the WQO of 10 mg/L in nine out of eleven onsite compliance wells, as well as two of the offsite upgradient wells. This indicates groundwater quality in the area is not high-quality waters for nitrate. Two compliance monitoring wells, WSM-2/2R and WSM-15, exceed upgradient levels of nitrate. Since 2017, the Discharger has ceased all biosolids application in the northwest portion of the LAAs near these two wells. Nitrate concentration trends show levels are decreasing in WSM-2/2R and stable in WSM-15. Until nitrate concentrations in WSM-15 decrease to upgradient levels, the Discharger is avoiding application of biosolids on Fields 1A and 1C.

Intrawell trend analysis from 2019 – Quarter 1 2024 shows a statistically significant decrease in nitrate concentrations in compliance wells WSM-2/2R, WSM-4, WSM-14, and in upgradient wells WSM-17 and WSM-18. None of the compliance wells show a statistically significant increasing trend for nitrate.

The Facility provides nitrification and denitrification, and secondary effluent is of higher quality in regard to nitrate than two of the upgradient wells. Nitrogen application to the LAAs is limited to the agronomic rate for plant available nitrogen (PAN). It should be noted that the Facility is surrounded by land used for agricultural purposes, including dairy land application areas, that are also contributing to groundwater degradation.

For the continued protection of groundwater quality, this Order sets a nitrogen loading limit to the LAAs, requires monitoring for ammonia, total nitrogen, and nitrate as nitrogen, and requires the Discharger to continue its efforts to control and manage nitrogen in its discharge and participate and comply with the Nitrate Control Program. The Discharger is pursuing Pathway B under the Nitrate Control Program.

c. **Iron**

First encountered groundwater is high quality for iron. Although blended irrigation levels for total iron are not expected to contribute to groundwater degradation, high loading of BOD, as well as naturally occurring anaerobic conditions, can mobilize iron in groundwater. For reference, average BOD concentrations in irrigation water are 550 mg/L with a maximum of 5,170 mg/L recorded between 2019 -2023. Wells WSM-5 and WSM-6 have slightly elevated levels of dissolved iron relative to upgradient concentrations. However dissolved iron levels show decreasing trends in

all compliance wells, and concentrations in WSM-5 and WSM-6 have typically been below the WQOs since 2021.

d. **Manganese:**

First encountered groundwater is high quality for manganese. While upgradient wells have low levels of manganese relative to the WQO, wells WSM-2/2R, WSM-4, WSM-14, and WSM-15 all have elevated levels of dissolved manganese relative to upgradient levels and WQO. However, intrawell analysis shows that concentrations are stable in these wells

The wells with elevated concentrations of manganese are all located in the northwestern portion of the Discharger's property (upgradient), which has soils with higher organic content and higher groundwater levels than the rest of the site. The groundwater in the northwestern portion of the Discharger's property also receives recharge from the onsite unlined ponds and from the adjacent DWR White Slough Wildlife Area. While these elevated concentrations may be largely caused by naturally occurring anoxic/anaerobic conditions that lead to the release of manganese from the soil, the high BOD concentrations and low pH levels in the industrial wastewater are likely also contributing to the mobilization of manganese in shallow groundwater. The Discharger also documented in their 2015 BPTC Report that relatively large amounts of biosolids slurry was applied to the fields surrounding WSM-15, which could have contributed to reducing conditions in this portion of the Facility.

However, impacts of metal mobilization due to anaerobic conditions appear to be localized, as data in the downgradient wells on the south and eastern portion of the Facility's boundary (WSM-5, WSM-6, WSM-9 and WSM-12 do not show elevated levels of manganese above the WQO. Although this Order authorizes limited degradation of receiving groundwater with respect to manganese, such degradation will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality outside of the facilities boundaries that exceed applicable WQOs.

The Discharger continues to implement several management practices for controlling manganese loading to groundwater, including source control efforts, minimizing anaerobic conditions in the storage ponds by keeping the ponds empty for a part of the year, and discontinuing the practice of applying liquid slurry of biosolids to LAAs.

76. This Order requires the Discharger to implement or continue implementing the following measures to minimize degradation with respect to iron and manganese due to BOD loading, which constitute BPTC:

a. Industrial waste from PCP is screened and required to meet BOD limits in their industrial discharge permit.

b. Treatment of biosolids in anaerobic digesters and treatment lagoons, followed by drying prior to land application, which minimizes reducing conditions and allows for even application of biosolids on LAAs.

c. Treatment of biosolids to meet the USAEPA's Class B criteria for land application (40 C.F.R. § 503).

d. Land application of wastewater to cropped fields with tailwater collection systems, to collect runoff from the LAAs. .

e. Cycle average BOD loading is limited to 200 lb/ac/day, the rate which was demonstrated in the City's 2009 *White Slough Organic Loading Study Technical Report* to not have any impact on odor or a measurable change in organics loading and concentrations of constituents of concern in the percolate. The cycle average BOD loading is also limited to the rate that ensures compliance with the Groundwater Limitations of this Order, which the Discharger demonstrates in their Cropping and Irrigation Annual Monitoring Report and Plan.

f. Application of biosolids is limited in fields near compliance wells with elevated concentration for constituents of concern, as established in the Discharger's Annual Background Groundwater Quality Evaluation Report.

g. Use of best management practices for land application of irrigation water and biosolids based on the California Water Environment Association's *Manual of Good Practice for Agricultural Land Application of Biosolids*, and the California League of Food Processors' *Manual of Good Practice for Land Application of Food Processing/Rinse Water*.

Implementation of the above-listed treatment and control measures will minimize the extent of further water quality degradation resulting from the Facility's continued operation.

77. Generally, limited degradation of groundwater and surface water by some of the typical constituents of concern discharged from a municipal wastewater utility, after effective source control and treatment, is consistent with the maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of a municipal utility service far exceed any benefits derived from numerous dispersed, individual wastewater systems, and the impacts on water quality will be substantially less. Accordingly, to the extent that any degradation occurs as the result of the Facility's continued operation, such degradation is consistent with the maximum interest of the people of the State of California.

78. Based on the foregoing, the adoption of this Order is consistent with the State Water Board's Antidegradation Policy.

California Environmental Quality Act

79. The issuance of this Order, which prescribes requirements and monitoring of waste discharges at an existing facility, with negligible or no expansion of its existing use, is exempt from the procedural requirements of the California Environmental Quality Act (CEQA) (Pub. Res. Code, § 21000 et seq.) pursuant to California Code of Regulations, title 14, section 15301. The discharges authorized under this Order are substantially within parameters established under prior WDRs, particularly with respect to character and volume of discharges.

80. To the extent that the construction of any new basins, ponds and/or surface impoundments are authorized under this Order, such features involve minor alterations to land at an existing facility, which are exempt from CEQA procedural requirements pursuant to California Code of Regulations, title 14, sections 15301 and 15304.

Other Regulatory Considerations

81. These WDRs regulate a facility that may impact a disadvantaged community and/or tribal community and include an alternative compliance path that allows the Discharger time to come into compliance with a water quality objective (i.e., salinity). The Discharger has selected the Alternative Salinity Permitting Approach for the Salt Control Program, which provides an alternative approach for compliance with salinity limits through implementation of specific requirements (i.e., support facilitation and completion of the Salinity P&O Study). The Central Valley Water Board has satisfied the outreach requirements set forth in Water Code section 189.7 by conducting outreach in affected disadvantaged and tribal communities. Pursuant to Water Code section 13149.2, the Central Valley Water Board reviewed readily available information and information raised to the Board by interested persons concerning anticipated water quality impacts in disadvantaged or tribal communities resulting from adoption of these WDRs. The Board also considered environmental justice concerns within the Board's authority and raised by interested persons with regard to those impacts.

82. The Central Valley Water Board anticipates that the issuance of these WDRs will result in water quality impacts within the scope of the Board's authority. Specifically, these WDRs authorize the continued discharge of wastewater with salinity concentrations above applicable water quality objectives. The Central Valley Water Board has identified the following measures available and within the scope of its authority to address the impacts of the Facility to the nearby disadvantaged communities in San Joaquin County: 1) active participation in the P&O Study and compliance with the Salt Control Program, 2) compliance with a performance-based salinity limitation, and 3) preparation and implementation of Salinity Evaluation and Minimization Plan to establish goals for potentially reducing salinity concentrations in the Facility's discharge.

83. Pursuant to Water Code section 106.3, subdivision (a), it is "the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." Although this Order is not subject to Water Code section 106.3, as it does not revise, adopt or establish a policy, regulation or grant criterion, (see § 106.3, subd. (b)), it nevertheless promotes the policy by requiring discharges to meet maximum contaminant levels (MCLs) for drinking water (excluding salinity), which are designed to protect human health and ensure that water is safe for domestic use. For salinity, this Order requires compliance with the Salt Control Program. Although the Basin Plans' Exceptions Policy for Salinity allows participants in the Salt Control Program to obtain limited-term exceptions from MCLs for salinity, this Program is consistent with the Human Right to Water Policy because its overarching management goals and priorities include long-term development of sustainable management practices and, where feasible, restoration of impacted groundwater basins and sub-basins.

Threat-Complexity Rating

84. Based on the threat and complexity of the discharge, the facility is determined to be classified as **2-B**, as defined below:

    a. Category "2" - Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of WQOs, cause secondary drinking water standards to be violated, or cause a nuisance.

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

Title 27 Exemption

85. This Order, which prescribes WDRs for discharges of undisinfected secondary treated wastewater, recycled water, and biosolids from a municipal treatment plant, along with industrial food-processing process water from cannery operations, is exempt from the prescriptive requirements of California Code of Regulations, title 27 (Title 27), section 20005 et seq. (Title 27, § 20090, subds. (a), (b), (h)).

Storm Water

86. Because the Discharger captures stormwater runoff from the Facility site for reuse as irrigation water, coverage under NPDES Order No. CAS000001, *General Permit for Storm Water Discharges Associated with Industrial Activities* (General Storm Water Permit) is not required at this time. LAAs are not subject to the requirements of the General Storm Water Permit.

Sanitary Sewer Overflows

87. For the purposes of this Order, a "Sanitary Sewer Overflow" (SSO) is a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (e.g., wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered SSOs, provided that the waste is fully contained within these temporary storage/conveyance facilities.

88. SSOs, which typically consist of a mixture of domestic and commercial wastewater, often contain pathogenic organisms, toxic pollutants, nutrients, oxygen demanding compounds, oil and grease, suspended solids, and other pollutants. When an SSO results in a discharge to surface water, it can cause temporary exceedances of WQOs, pose a threat to public health, adversely affect aquatic life, and impair recreational use and aesthetic enjoyment of surface waters in the area. The most common causes are grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and/or contractor-caused blockages.

89. On 6 December 2022, the State Water Board adopted Order WQ 2022-0103-DWQ, *Statewide General Waste Discharge Requirements General Order for Sanitary Sewer Systems* (SSO General Order), under which all public agencies owning or operating sanitary sewer systems with total system lengths in excess of one mile must enroll. The Discharger’s collection system exceeds one mile in length and the Discharger is enrolled under the SSO General Order.

Biosolids

90. The U.S. EPA has promulgated biosolids reuse regulations in 40 Code of Federal Regulations part 503, Standards for the Use or Disposal of Sewage Sludge (Part 503), which establishes management criteria for protection of ground and surface waters, sets limits and application rates for heavy metals, and establishes stabilization and disinfection criteria. The Central Valley Water Board is not the implementing authority for Part 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to U.S. EPA.

Groundwater Wells

91. DWR 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.

92. Statistical data analysis methods outlined in the U.S. EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (Unified Guidance) are appropriate for determining compliance with the Groundwater Limitations of this Order. Depending on the circumstances, other methods may also be appropriate.

Scope of Order

93. This Order is strictly limited in scope to those waste discharges, activities, and processes described and expressly authorized herein.

94. Pursuant to Water Code section 13264, subdivision (a), the Discharger is prohibited from initiating the discharge of new wastes (i.e., other than those described herein), or making material changes to the character, volume and timing of waste discharges authorized herein, without filing a new RWD per Water Code section 13260.

95. Failure to file a new RWD before initiating material changes to the character, volume, or timing of discharges authorized herein shall constitute an independent violation of these WDRs.

96. This Order is also strictly limited in applicability to those individuals and/or entities specifically designated herein as "Discharger," subject only to the discretion to designate or substitute new parties in accordance with this Order.

Procedural Matters

97. All of the above, and the supplemental information and details in the attached Information Sheet (incorporated herein), were considered in establishing the following conditions of discharge.

98. The Discharger, interested agencies, and interested persons were notified of the Central Valley Water Board's intent to prescribe the WDRs in this Order, and provided an opportunity to submit their written views and recommendations at a public hearing. (Wat. Code, § 13167.5)

99. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.

100. The Central Valley Water Board will review and revise the WDRs in this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED that WDRs Order R5-2007-0113-01 is rescinded (except for enforcement purposes) and, pursuant to Water Code sections 13263 and 13267, that the Discharger, its agents, employees, and successors shall comply with the following:

A. Standard Provisions and Reporting Requirements

1. Except as expressly provided herein, the Discharger shall comply with the Standard Provisions and Reporting Requirements dated 1 March 1991 (SPRRs).

B. Discharge Prohibitions

1. Discharge or application of waste at a location or in a manner different from that described in the Findings is prohibited.

2. Waste constituents shall not be discharged or otherwise released from the Facility (including during treatment and storage activities) in a manner that results in:

   a. Violations of the Groundwater Limitations of this Order; or

   b. Conditions of “nuisance” or “pollution,” as defined per Water Code section 13050.

3. Discharge or application of waste classified as “hazardous” (see Title 22, § 66261.1 et seq.) is prohibited.

4. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system’s capability to comply with this Order. Pollutant-free wastewater means rainfall, supplemental irrigation water, groundwater, cooling waters, or condensates that are essentially free of pollutants.

5. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the SPRRs.

   a. For the purposes of Standard Provision E.2., industrial wastewater is not considered a “treatment bypass” because the industrial wastewater does not contain domestic waste.

6. Except as expressly authorized under a separate permit, the discharge of wastes to surface waters or surface water drainage courses is prohibited.

7. Discharge of toxic substances into any wastewater treatment system or LAA such that biological treatment mechanisms are disrupted is prohibited.

C. Flow Limitations

1. Influent flows to the Facility, monitored at INF-001 (as defined in the MRP), shall not exceed a monthly average dry weather flow of 8.5 MGD. Monthly average dry weather flow is defined as the average daily flow over three consecutive dry weather months (e.g., July, August, and September).

2. Total irrigation flows to the LAAs, measured as the sum of the flows at locations LND-001 and IRR-001, shall not exceed a monthly average daily irrigation flow of 7.2 MGD.

D. Effluent Limitations

1. **Secondary Treated Effluent Discharged to Ponds.** The Discharger shall maintain compliance with the following effluent limitations specified in Table 11, with compliance measured at Monitoring Location EFF-001 as described in the separately issued MRP R5-2025-XXXX.

Table 11. Secondary Treated Effluent Limitations

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
BOD 5-day @ 20°C	mg/L	40	80
Settleable Solids	mL/L	0.2	0.5
Total Nitrogen	mg/L	10	N/A

1. **Tertiary Treated Effluent.** The Discharger shall maintain compliance with the following recycled water specifications and effluent limitations, with compliance measured at Monitoring Location REC-001 as described in the separately issued MRP R5-2025-XXXX.

    a. The Discharger shall treat the wastewater such that it complies with Title 22 section 60301.230 (“Disinfected Tertiary Recycled Water”).

    b. Effluent total coliform organisms shall not exceed:

        i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
        ii. 23 MPN/100 mL, more than once in any 30-day period; and
        iii. 240 MPN/100 mL for any single sample.

c. When coagulation is used, effluent turbidity shall not exceed any of the following:

   i. An average of 2 Nephelometric Turbidity Units (NTU) within a 24-hour period;
   ii. 5 NTU more than 5 percent of the time within a 24-hour period; and
   iii. 10 NTU at any time.

d. When coagulation is not used, the Discharger shall operate the treatment system to ensure:

   i. The turbidity of the influent to the filtration unit shall not exceed 5 NTU for more than 15 minutes and never exceed 10 NTU; and
   ii. The effluent turbidity measured at a location representative of effluent from the filtration system shall not exceed 2 NTU at any time.

E. Salinity Action Level

1. To comply with the Salt Control Program, the Discharger selected the Alternative Salinity Permitting Approach (i.e., participation in the P&O Study). Therefore, as discussed in Finding 68, these WDRs establish a **Salinity Action Level of 875 mg/L** on the discharge to the LAAs as a flow-weighted annual average for TDS. The flow-weighted average TDS concentration is based on total flow and concentration for each source of water discharged, including blended irrigation flows (monitoring location LND-001) and supplemental irrigation flows (monitoring location IRR-001). As part of the Annual Monitoring report required per MRP R5-2025-XXXX, the Discharger shall evaluate the flow-weighted annual average effluent TDS concentration (monitored at LND-001 and IRR-001). If the Facility's discharge exceeds the Salinity Action Level, the Discharger shall submit a Salinity Action Level Report by 1 March of the year following the exceedance of the Salinity Action Level. The Salinity Action Level Report shall, at a minimum, include the following:

   a. An evaluation of the Discharger's salinity effluent levels. This evaluation shall discuss any changes to the source water for the Discharger, any increased water conservation efforts implemented within the Facility or canneries, and any other changes to the Discharger's operations that could have contributed to the increased salinity concentrations.

   b. If additional time is needed to investigate the source(s) of the salinity in the Facility's discharge, a detailed work plan describing what actions the Discharger will conduct (with completion dates) to investigate the source(s) of salinity and report its findings to the Central Valley Water

Board. The findings from the investigations shall be submitted to the Central Valley Water Board no later than **October 1st** of the year following the exceedance of the Salinity Action Level.

c. An evaluation of the potential impacts the increased salinity concentrations could have on underlying groundwater and downgradient users. If additional time is needed for this evaluation, the Salinity Action Level Report shall propose a submittal date (**no later than October 1st** of the year following exceedance of the Salinity Action Level).

F. Mass Loading Limits

The Discharger shall maintain compliance with the following land discharge specifications, and loading calculations shall be performed as specified in the separately issued MRP, Section III.B.4.

1. The total nitrogen loading to any individual agricultural field (1A through 6G as shown in Attachment B), as determined by the methods described in MRP R5-2025-XXXX, shall not exceed crop demand.

2. The maximum BOD_5 loading limit to the LAAs, as calculated as a cycle average pursuant to the methods described in MRP R5-2025-XXXX, shall not exceed any of the following:

   a. 200 lb/acre/day as a cycle average; and

   b. The daily and cycle average loading rate that ensures compliance with Discharge Prohibition 2 of this Order.

G. Wastewater Discharge Specifications

1. Domestic wastewater shall be treated to at least undisinfected secondary recycled water standards, in accordance with Title 22 section 60301.220, prior to discharge to the LAAs.

2. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.

3. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.

4. The Discharger shall design, construct, operate, and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure.

   a. This Order does not require the secondary storage ponds to maintain a 2-foot freeboard. The Discharger submitted a report titled

"Geotechnical Engineering Evaluation Report, City of Lodi Pond Study, White Slough Water Pollution Control Facility" Wallace-Kuhl, 25 July 2011, which concluded that the pond berms meet Title 27 criteria for freeboard less than 2 feet. The pond berms are protected from erosion with geotextile/rock faces and the tops are paved. In addition, water from the ponds can be pumped to the Discharger's treatment system for discharge to Dredger Cut to prevent overflows. However, should the ponds overtop, the flows would remain on site and be returned through the agricultural tailwater system.

b. The operating freeboard in the tertiary recycled water storage 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.

5. 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.

6. Public contact with wastewater and Class B biosolids shall be prevented through use of fences, signs, or acceptable alternatives.

7. Objectionable odors shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions that affect an entire community or neighborhood, or any considerable number of persons.

8. As a means of discerning compliance with Discharge Specification 9, the dissolved oxygen (DO) content in the upper one foot of any of the secondary effluent storage ponds in use shall not be less than 1.0 mg/L for three consecutive sampling events. If DO concentrations are less than 1.0 mg/L for three consecutive sampling events and objectionable odors are perceivable beyond the property limits, the Discharger shall report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the odors within 30 days.

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. The Discharger shall monitor process residual solids accumulation in the pond(s) annually and shall periodically remove residual solids as necessary to maintain adequate storage capacity. Any sludge removed from ponds shall be hauled offsite for disposal or land applied in accordance with the Biosolids Discharge Specifications and Solids Disposal Specifications in this Order.

H. Biosolids Discharge Specifications

1. Biosolids shall comply with either Class A or Class B pathogen standards listed in Appendix B of 40 Code of Federal Regulations part 503.

2. Biosolids shall comply with either Class A or Class B pathogen standards listed in 40 Code of Federal Regulations part 505.33

3. If Class B biosolids are applied to a site where the soil will be tilled, biosolids shall be incorporated within 24 hours after application.

4. Biosolids may not be applied to any agricultural field 24 hours before forecasted precipitation, during periods of precipitation, and for at least 24 hours after cessation of precipitation, or when soils are saturated.

5. Biosolids less than 75 percent moisture shall not be applied during periods when the surface wind speed exceeds 25 miles per hour as determined by the nearest calibrated regional weather station (e.g., airport, CIMS).

6. Biosolids applied to LAAs shall have pollutant concentrations no greater than those tabulated below:

Table 12. Ceiling Concentrations

Constituent	Ceiling Concentration (mg/kg dry weight)
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

7. Biosolids shall not be applied to LAAs in amounts that cause the following cumulative metals loading limits to be exceeded:

Table 13. Cumulative Loading Rate Limits

Pollutant	Cumulative Pollutant Loading Rate Limit (lb/ac)
Arsenic	36
Cadmium	34
Cooper	1,336
Lead	267
Mercury	15
Molybdenum	16
Nickel	374
Selenium	89
Zinc	2,494

8. Biosolids distinguished as “Class B” in 40 Code of Federal Regulations part 503 must comply with the following:

   a. The discharge of tail water or field runoff is prohibited within 30 days after application of biosolids for areas where biosolids have not been incorporated into the soil and where there is not a minimum of 33 feet of unmowed grass or similar vegetation bordering the application area and along the path of runoff to prevent movement of biosolids particles from the application site.

   b. After an application of biosolids in any field, the discharger shall ensure the following:

      i. For at least 30 days, food, feed, and fiber crops are not harvested.

ii. For at least 60 days after application of biosolids in areas with average daily (daytime) air temperatures exceeding 50ºF or for at least 90 days after land application where such conditions are not met, domesticated animals are not grazed.

iii. For at least 12 months:

1. Public access to the site is restricted for sites with a high potential for public exposure;

2. Turf is not to be harvested if the harvested turf will be placed on land with a high potential for contact by the public as defined in 40 Code of Federal Regulations part 503.11; and

3. Grazing of milking animals used for producing unpasteurized milk for human consumption is prevented if the field is used as pasture.

iv. For at least 14 months, food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface are not harvested.

v. For at least 20 months, food crops with harvested parts below the land surface are not harvested when the biosolids remain exposed on the surface for four months or longer prior to incorporation.

vi. For at least 38 months, food crops with harvested parts below the land surface are not harvested when the biosolids remained exposed on the ground surface for less than four months prior to incorporation into the soil.

9. Biosolids staging, storage, and application areas shall be at least:

a. 10 feet from property lines, except where property lines are adjacent to properties also using biosolids as a soil amendment;

b. 500 feet from domestic water supply wells;

c. 100 feet from non-domestic wells, with the exception of onsite irrigation wells owned and operated by the Discharger;

d. 50 feet from public roads;

e. 100 feet from surface waters; and

f. 2,500 feet from any domestic surface water supply intake.

I. Biosolids Storage Specifications

1. Facilities for the storage of biosolids shall be located, designed, and maintained to restrict public access to biosolids.

2. Biosolids storage facilities shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.

3. The storage of biosolids, residual sludge, and solid waste on the Facility property shall be temporary and 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.

J. Recycled Water Specifications

1. Public contact with the recycled water shall be precluded or controlled through such means as fences, signs, and other acceptable alternatives.

2. All recycled water equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities, and these shall be of a type, or secured in a manner, that permits operation by authorized personnel only.

3. Recycled water shall be used in compliance with Title 22, division 4, chapter 3, article 3, and this Order.

4. The Discharger shall maintain compliance with the following UV disinfection operating specifications:

    a. The minimum hourly average UV dose in the UV reactor shall be 100 millijoules per square centimeter (mJ/cm^2).

    b. The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at Monitoring Location UVS-001 shall not fall below 55 percent.

    c. The lamp sleeves and cleaning system components must be visually inspected per the manufacturer’s operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.

    d. The lamp sleeves must be cleaned periodically as necessary to meet the UV dose requirements.

    e. Lamps must be replaced per the manufacturer’s operations manual, or sooner, if there are indications the lamps are failing to provide

adequate disinfection. Lamp age and lamp replacement records must be maintained.

f. The Facility must be operated in accordance with an approved operations and maintenance program that assures adequate disinfection.

5. Notwithstanding the preceding requirements, the production, distribution, and use of recycled water shall conform to a Title 22 Engineering Report prepared pursuant to Title 22 section 60323 and approved by DDW.

6. An engineering report must be submitted to DDW and the Central Valley Water Board for review and approval of any future use of recycled water or expansion of existing irrigation areas beyond those described in the approved Title 22 Engineering Report(s).

K. Land Application Area Specifications

1. Areas irrigated with wastewater shall be managed to prevent breeding of mosquitoes and other vectors. More specifically:

   a. The discharge of wastewater to, or stormwater within, any agricultural field (as shown in Attachment B) must infiltrate completely, or be returned to the Facility's storage ponds as tailwater, within 24 hours.

   b. Ditches shall be maintained essentially free of emergent, marginal, and floating vegetation.

   c. Low-pressure and unpressurized pipelines and ditches that are accessible to mosquitoes shall not be used to store wastewater.

2. The Discharger shall provide and maintain the following setbacks for all the Agricultural Fields shown in Attachment B:

   a. A 50-foot buffer zone between the Agricultural Fields and all property boundaries.

   b. A 100-foot buffer zone between any spring, domestic well, or irrigation well and the wetted area produced during irrigation with wastewater, with the exception of onsite irrigation wells owned and operated by the Discharger.

   c. The irrigation system shall be designed and managed to ensure even application of wastewater over any agricultural field and to minimize erosion.

3. Irrigation using recycled water shall not be performed during rainfall or when the ground is saturated.

4. All tailwater returns and runoff control systems must be fully functional prior to irrigation with wastewater.

5. The hydraulic loading of recycled water and supplemental irrigation water to the LAAs shall be managed to provide water in amounts consistent with crop needs, to maximize crop nutrient update and to minimize percolation of wastewater constituents below the evaporative and root zone.

L. Groundwater Limitations

Discharge of waste from any portion of the Facility shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or background groundwater quality, whichever is greater:

1. Contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations, excluding salinity.

2. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

M. Solids Disposal Specifications

For the purpose of this Order, pond sludge means the solid, semisolid, and liquid residues removed during the primary secondary and tertiary treatment processes that will not be subject to further treatment at the wastewater system. Biosolids refers to sludge that has undergone sufficient treatment and testing to qualify for reuse pursuant to the U.S. EPA Part 503 Biosolids Rule. (40 C.F.R. § 503.)

1. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.

2. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27 section 20005 et seq. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) that are operated in accordance with valid WDRs issued by the State Water Board or a regional water quality control board will satisfy these specifications.

3. The use and disposal of biosolids shall comply with existing federal and State laws and regulations, including permitting requirements and technical standards included in 40 Code of Federal Regulations part 503.

If the State Water Board and/or the Central Valley Water Board are, in the future, authorized to implement regulations contained in Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in Part 503 whether or not they have been incorporated into this Order.

4. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and U.S. EPA Regional Administrator at least 90 days in advance of the change.

N. Provisions

1. The Discharger shall comply with the separately issued **MRP R5-2025-XXXX** and any subsequent revisions thereto. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.

2. The treatment and storage facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

3. If the Discharger proposes to make any significant change to its systems which may impact discharge water quality, the Discharger shall notify the Executive Officer and submit a Report of Waste Discharge describing the proposed change(s), justification(s), and potential impact(s) to water quality. The Executive Officer will evaluate the proposed change with respect to the requirements of this Order.

4. At least 90 days prior to removing any LAAs from service, the Discharger shall submit to the Central Valley Water Board a technical report detailing impacts to current operations and demonstrating how loading limits will be met with reduced LAAs. The report shall include a revised water balance and be submitted by a California Registered Engineer or a Certified Engineering Geologist.

5. In accordance with 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.

6. The Discharger shall submit the technical reports and monitoring reports required by this Order for consideration by the Executive Officer and incorporate comments the Executive Officer may have in a timely manner, as appropriate. 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.

7. 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 include 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.

8. The Discharger shall provide certified wastewater treatment plant operators in accordance with California Code of Regulations, title 23, division 3, chapter 26.

9. In the event that the Discharger reports toxic chemical release data to the State Emergency Response Commission (SERC), the Discharger shall also report the same information to the Central Valley Water Board within 15 days of the report to the SERC, pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" (42 U.S.C. § 11023).

10. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or offsite 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.

11. In the event of any change in control or ownership of the Facility, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

12. 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 Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

13. If the discharge to land permitted under this Order ceases, and these WDRs are no longer necessary, the Discharger must contact the Central Valley Water Board's Compliance and Enforcement Unit to discuss wastewater treatment system closure requirements prior to rescission of this Order.

14. A copy of this Order, including the MRP, Information Sheet, Attachments, and SPRRs, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

ENFORCEMENT

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 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.

ADMINISTRATIVE REVIEW

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board for administrative review in accordance with Water Code section 13320, and California Code of Regulations, title 23, section 2050 et seq. To be timely, the State Water Board must receive the petition by 5:00 pm on the 30th day after the date of this Order, except that if the 30th day falls on a Saturday, Sunday or State Holiday, the petition must be received by the State Water Board by 5:00 pm on the next

business day. The law and regulations applicable to filing petitions are available on the internet at the State Water Boards' Public Notices Petitions for Water Quality webpage (http://www.waterboards.ca.gov/public_notices/petitions/water_quality). Copies will be provided upon request.

LIST OF ATTACHMENTS

Attachment A – Site Location Map

Attachment B – Site Map

Attachment C – Process Flow Diagram

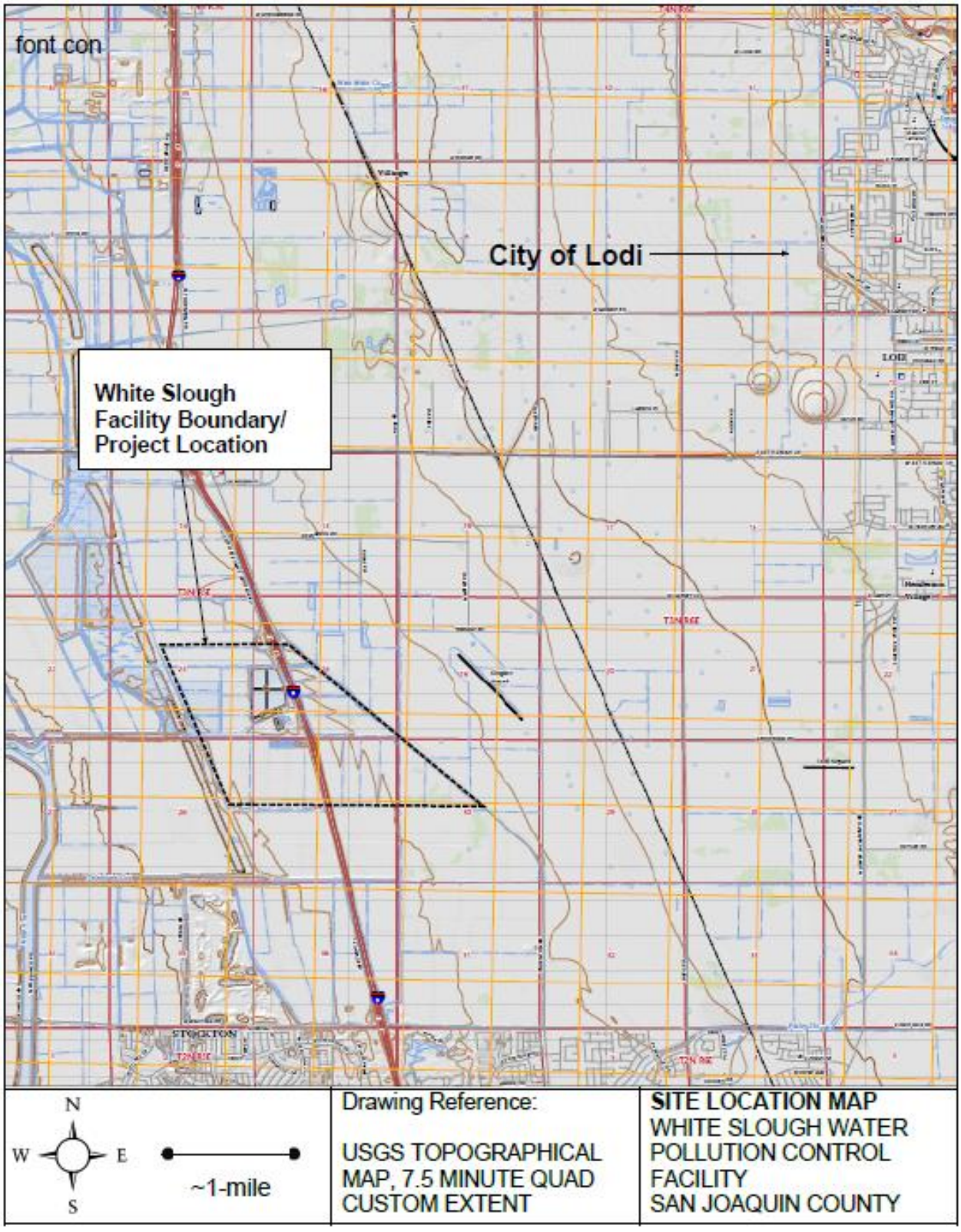
Attachment D – Monitoring Well Location Map

Attachment E – Land Application Area Quadrants

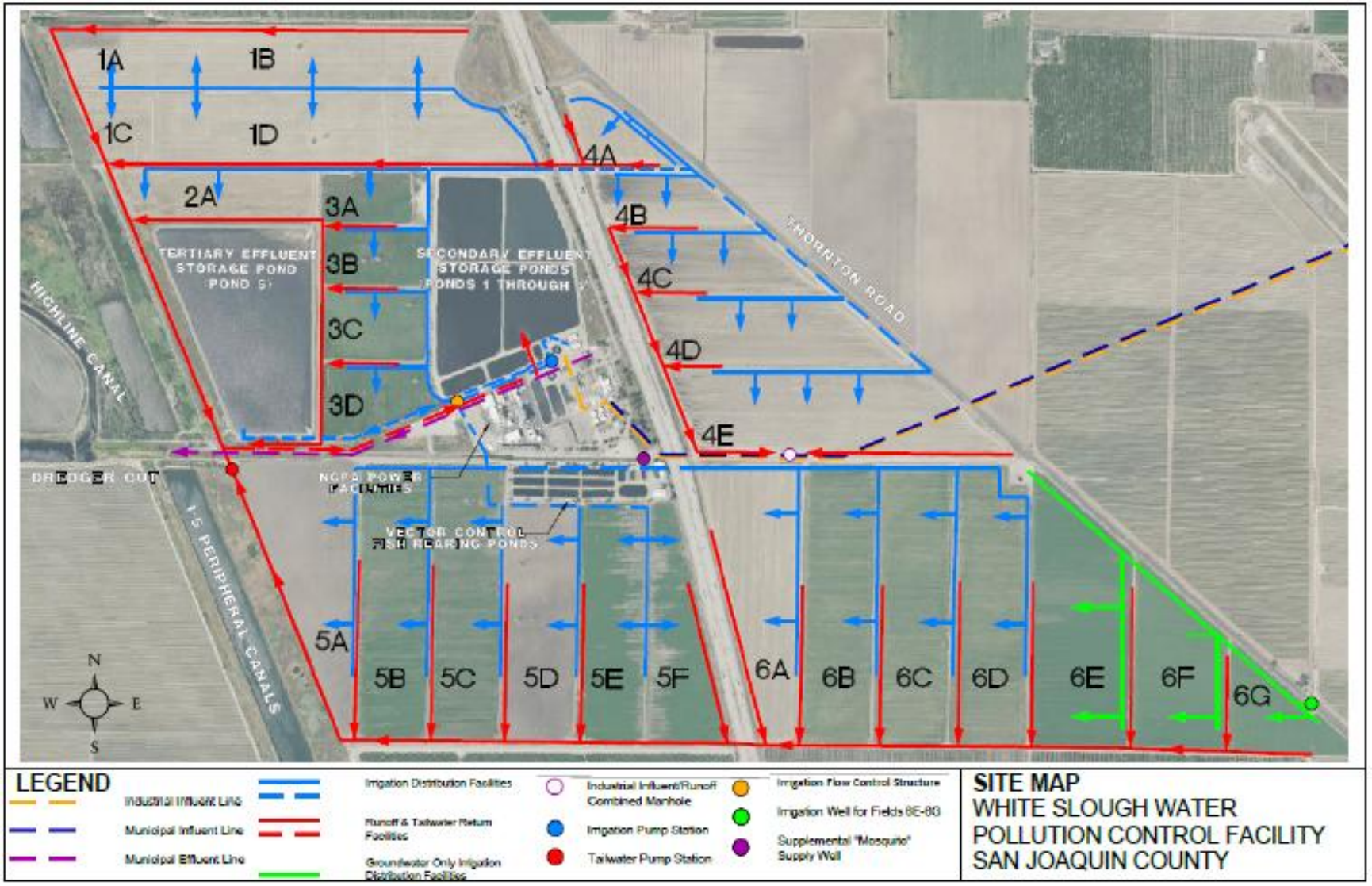
Information Sheet

Standard Provisions & Reporting Requirements dated 1 March 1991 (1 March 1991 SPRRs)
(https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/std_provisions/wdr-mar1991.pdf)

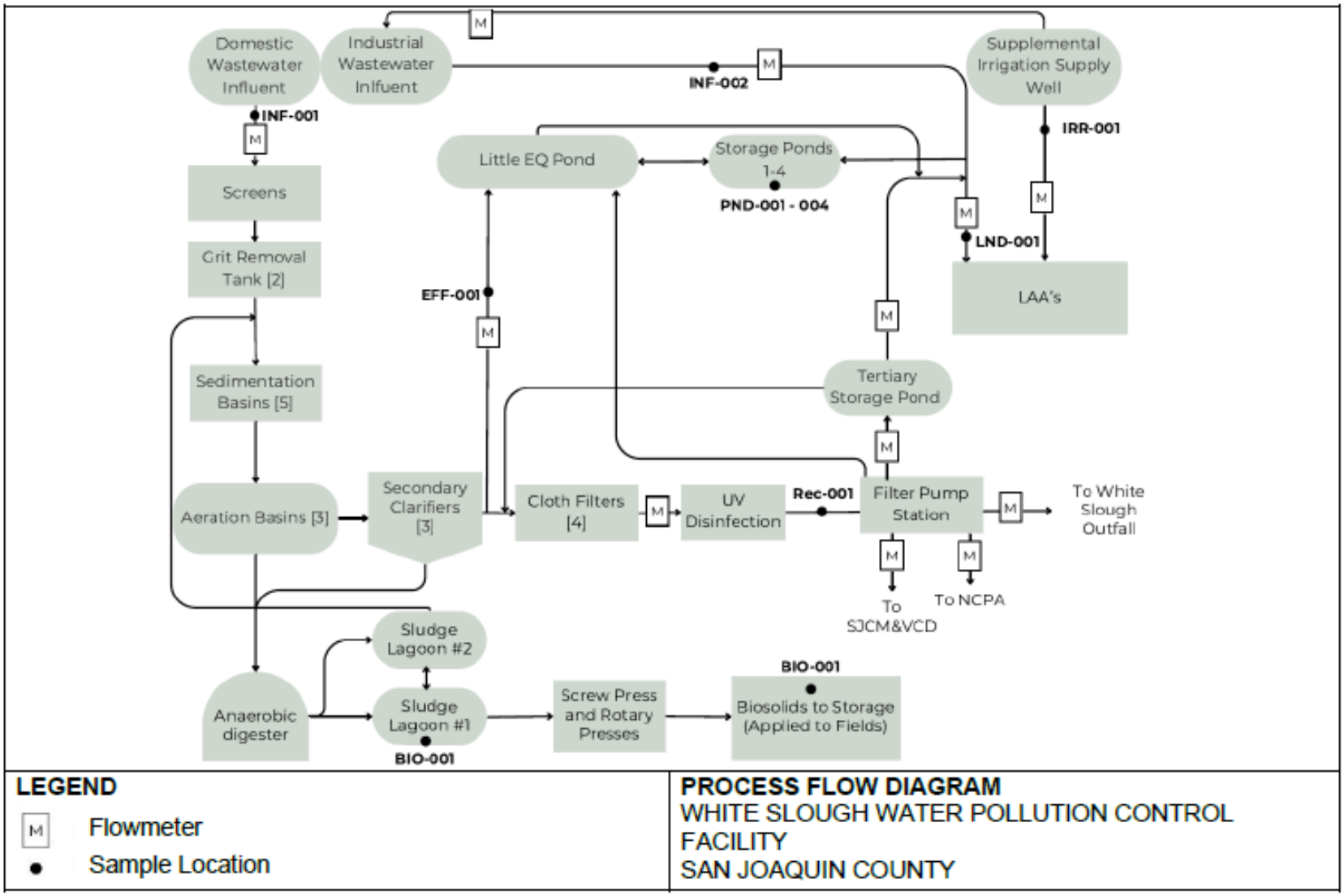
ATTACHMENT A – SITE LOCATION MAP



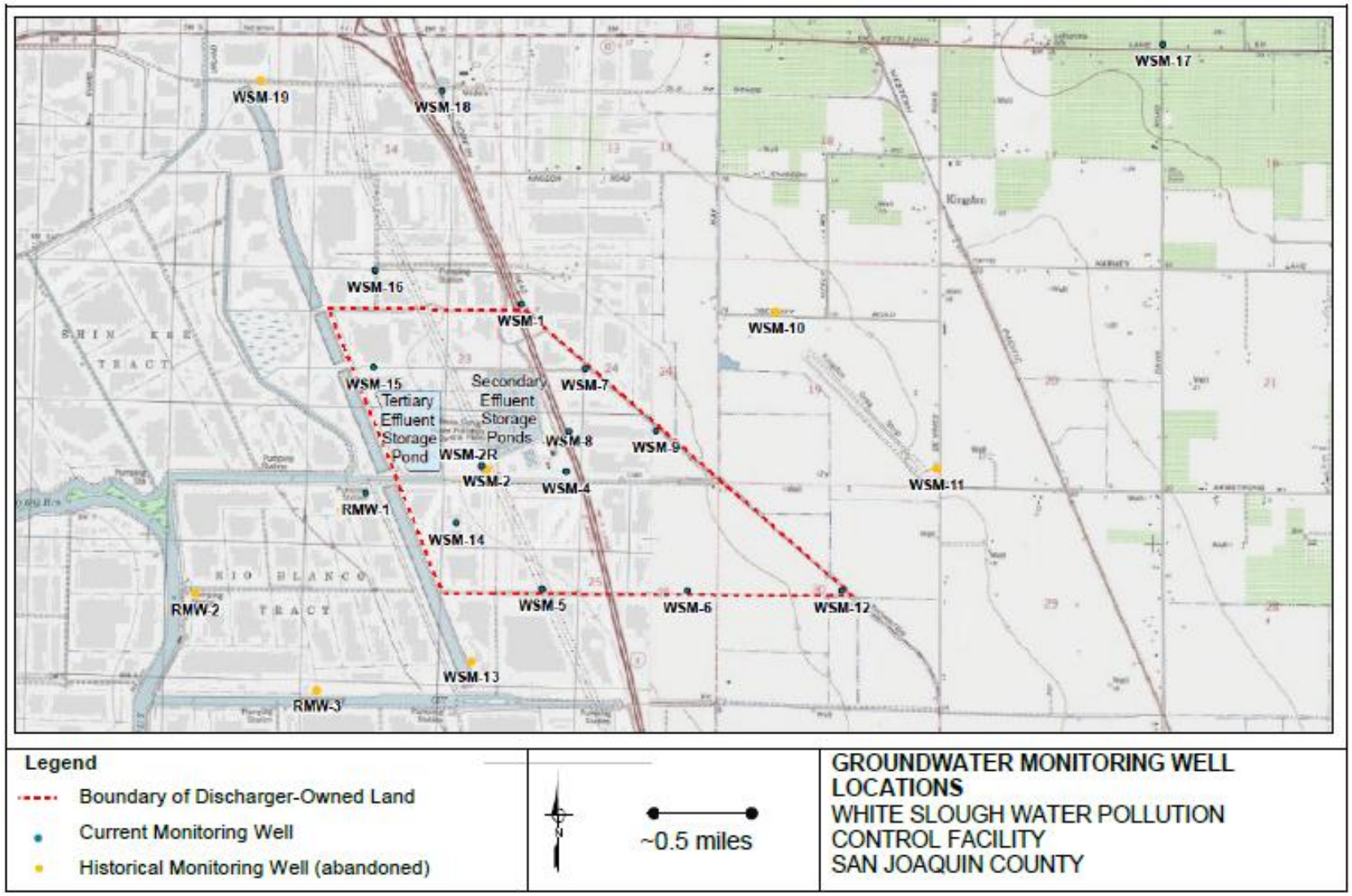
ATTACHMENT B – SITE MAP



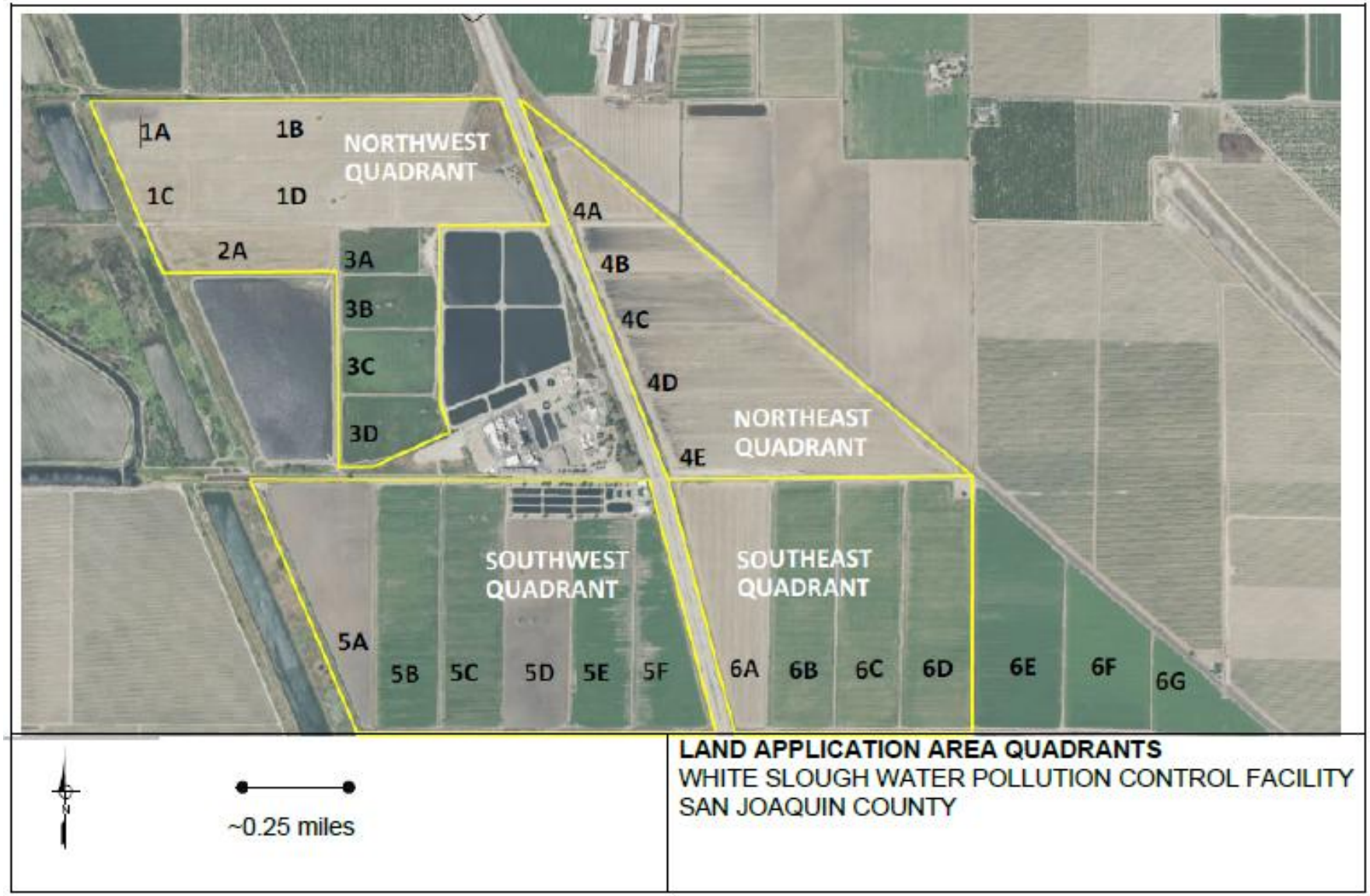
ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D – MONITORING WELL LOCATION MAP



ATTACHMENT E – LAND APPLICATION AREA QUADRANTS



INFORMATION SHEET

Background

The City of Lodi (Discharger) owns and operates the White Slough Water Pollution Control Facility (Facility) in Lodi, San Joaquin County. The Facility receives and treats domestic wastewater from the City of Lodi and receives and disposes of industrial waste from a separate collection system which is dominated by flows from a fruit canning facility.

The Facility is currently regulated under three waste discharge requirements (WDRs) orders. Discharge of up to 8.5 MGD of disinfected tertiary water to Dredger Cut is permitted under WDRs General Order R5-2023-0025, *WDRs for Municipal Wastewater Dischargers that Meet Objectives/Criteria at the Point of Discharge to Surface Water* (NPDES Permit No. CAG585001) (Municipal General Order), subject to the site-specific Notice of Applicability (NOA) as enrollee number R5-2023-0020-010. Discharge of undisinfected secondary effluent to the equalization ponds, four unlined undisinfected secondary storage ponds, and 816-acres of Discharger owned Land Application Areas (LAAs) was regulated under WDRs Order R5-2007-0113-01.[1] **WDRs Order R5-2025-XXXX** replaces and rescinds Order R5-2007-0113-01 and adds requirements for the discharge of disinfected tertiary water to the unlined tertiary recycled water storage pond which was constructed in 2018. Non-Discharger uses of disinfected tertiary recycled water, including water supplied to the Northern California Power Agency (NCPA) and San Joaquin County Mosquito and Vector Control District (VCD), which were previously regulated under R5-2007-0113-01, are regulated under the Recycled Water General Order (WQ-2016-0068-DDW-R5207).

The Facility produces nitrified and denitrified secondary undisinfected and tertiary disinfected wastewater. Secondary undisinfected wastewater is stored in four unlined storage ponds and used to irrigate crops on the 726-acres of Discharger-owned LAAs. The Facility also receives industrial wastewater, primarily made up of waste from a fruit cannery, which is sent to the secondary storage ponds during the winter months, and directly land applied to the LAAs during the irrigation season. Tertiary water produced at the facility can be stored in the tertiary recycled water storage pond or recycled at the NCPA and the VCD which are both located onsite. During the winter months, disinfected tertiary water is discharged to Dredger Cut, a part of the Sacramento-San Joaquin Delta (Delta) under a NOA to the Municipal General Order. Class B biosolids generated at the Facility are dewatered and land applied to LAA fields between cropping cycles.

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[1] In 2013, Order R5-2007-0113 was amended by R5-2013-0126 to remove NPDES requirements and include land application requirements; the amended order was assigned Order No. R5-2007-0113-01.

Wastewater Treatment Facility and Discharge

The Facility is currently designed and permitted for an Average Dry Weather Flow (ADWF) of 8.5 MGD, but the current ADWF to the facility is 4.5 to 4.6 MGD. Seasonal industrial flow makes up between two (2) to 26 percent of the monthly influent flow depending on the month. Influent flows from 2019-2023 are summarized below. Blended irrigation water samples are collected prior to discharging to the LAAs at sample location LND-001, which is representative of the quality of wastewater discharged to land. This sample location is a combination of flows pumped from the secondary storage ponds, industrial influent flows, and supplemental irrigation flows from an onsite groundwater well. Average and maximum concentrations for select constituents in blended irrigation water reported between 2019-2023 are summarized below:

Table 14. Blended Irrigation Water Quality 2019 - 2023

Parameter	Units	Average	Maximum
TDS	mg/L	640	2,620
Fixed Dissolved Solids (FDS)	mg/L	340	1,630
EC	mg/L	770	3,670
BOD	mg/L	550	5,170
Total Nitrogen	mg/L	16	65
Nitrate (as N)	mg/L	1.7	7.2
Ammonia (as N)	mg/L	5.8	41
Chloride	mg/L	70	180
Iron	µg/L	650	3,400
Manganese	µg/L	85	770

Groundwater Considerations

The groundwater monitoring network consists of fifteen shallow groundwater monitoring wells that were installed between 1989 and 2014. Eleven compliance wells (WSM-1 – WSM-15) are located within the Discharger owned property, three wells (WSM-16 – WSM-18) are located offsite and monitored for background quality, and one additional well (RMW-1) is located offsite and monitored for groundwater elevation only.

First encountered groundwater at the site ranges from 0 feet bgs near the western edge of the property to about 30 feet bgs on the eastern edge of the monitoring well network. Fluctuations in groundwater elevations are greatest to the east of the Facility, where they fluctuate by about 10 feet seasonally. The horizontal gradient to the east and southeast across the site is presumed to be impacted by recharge from the Delta and the associated ponds within the DWR White Slough Wildlife Area, which borders the western boundary of the Facility, and by groundwater pumping to the south-east of the

Facility. Groundwater quality surrounding the facility is likely also influenced by nearby CAFs and cropped land application areas, which can cause anoxic conditions, resulting in increasing concentrations of dissolved metals in groundwater.

Antidegradation

Antidegradation analysis and conclusions are discussed in Findings 71 through 77. As discussed in these findings, groundwater at the White Slough Facility is not identified as high-quality waters for salts or nitrate.

For most wells and constituents, the discharge of waste is not causing groundwater to contain waste constituents in concentrations statistically greater than upgradient water quality or WQOs. In several wells, iron, manganese, or salinity is elevated compared to upgradient concentrations or WQOs. However, intrawell analysis shows that concentrations are stable or decreasing in all wells with elevated concentrations of iron, manganese, or salinity compounds. This Order requires the Discharger to implement, or continue implementing, management practices that constitute the best practical treatment or control (BPTC) .

This Order sets a maximum BOD loading limit of 200 lb/ac/day, consistent with the most recent WDRs. In 2009 the Discharger submitted a draft *White Slough Organic Loading Study Technical Report* which evaluated increased loading of BOD to the agricultural fields. The results from test fields and soil columns demonstrated that BOD loading of 200 lb/acre/day did not have any impact on odor/nuisance or a measurable change in organics loading and concentrations of constituents of concern in the percolate. If manganese or iron concentrations show increasing concentration trends in the future, the BOD effluent limit may be re-evaluated at that time.

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

Based on the water balance, this Order limits monthly average dry weather flow to 8.5 MGD, and limits average monthly daily flow to the LAAs to 7.2 MGD.

This Order also sets a Salinity Action Level of 875 mg/L for TDS as a flow-weighed annual average. This limit was based on historical effluent and groundwater data and includes an approximate 25 percent safety factor to allow flexibility for water conservation efforts. By choosing to participate in the Prioritization and Optimization (P&O) Study, the Discharger may continue implementing reasonable, feasible, and practicable efforts to control salinity through performance-based measures.

In addition, the WDRs limit nitrogen loading to crop demand and set a maximum daily BOD loading limit of 200 lb/ac/day.

Monitoring Requirements

Section 13267 of the California Water Code authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of waste discharges on waters of the State. Water Code section 13268 authorizes assessment of civil administrative liability where appropriate. The Order includes treated domestic wastewater, industrial influent, pond, LAAs, recycled water, solids and groundwater monitoring requirements. This monitoring is necessary to characterize the discharge and evaluate any impacts to groundwater and compliance with the requirements and specifications in the Order.

Salt and Nitrate Control Programs Regulatory Considerations

As part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board adopted Basin Plan amendments (Resolution R5-2018-0034) incorporating new programs for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley at its 31 May 2018 Board Meeting. On 16 October 2019, the State Water Resources Control Board adopted Resolution No. 2019-0057 conditionally approving the Central Valley Water Board Basin Plan amendments and directing the Central Valley Water Board to make targeted revisions to the Basin Plan amendments within one year from the approval of the Basin Plan amendments by the Office of Administrative Law. The Office of Administrative Law (OAL) approved the Basin Plan amendments on 15 January 2020 (OAL Matter No. 2019-1203-03).

Pursuant to the Basin Plan amendments, dischargers received a Notice to Comply with instructions and obligations for the Salt Control Program within one year of the effective date of the amendments (17 January 2020). Upon receipt of the Notice to Comply, the Discharger will have no more than six months to inform the Central Valley Water Board of their choice between Option 1 (Conservative Option for Salt Permitting) or Option 2 (Alternative Option for Salt Permitting). The level of participation required of dischargers whose discharges do not meet stringent salinity requirements will vary based on factors such as the amount of salinity in the discharge, local conditions, and type of discharge. The Discharger (SALT ID: **3302**) has chosen to pursue Option 2 (Alternative Salinity Permitting Approach).

For the Nitrate Control Program, the Discharger falls within the Groundwater Basin 5-22.01 (Eastern San Joaquin Subbasin), a Priority 2 Basin. The Discharger is pursing pathway B: Local Management Zone. More information regarding the CV-SALTS regulatory planning process can be found at the following link: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/).

The CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs regionwide, including the WDRs that regulate discharges from the Facility. More information regarding the CV-SALTS regulatory planning process can be found at the following link: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/).

Reopener

The conditions of discharge in the 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 Order sets 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.

Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations

The Central Valley Water Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.