

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2019-0008
WASTE DISCHARGE REQUIREMENTS

FOR
CITY OF LEMOORE AND LEPRINO FOODS COMPANY
STONE RANCH PROPERTY
KINGS COUNTY

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

1. The City of Lemoore (City) provides sanitary wastewater treatment for its 26,000 residents at its wastewater treatment facility (WWTF) at 1145 South 18 1/2 Avenue, Lemoore, California. Waste Discharge Requirements (WDRs) Order 96-050 authorizes the discharge of up to 2.5 million gallons per day (mgd) of secondary disinfected effluent from the City's WWTF to the head of the Westlake Canal and then south to the discharge point on 50,000 acres owned by Westlake Farms, Inc. (Westlake). The City's WWTF was designed to treat both domestic and industrial wastes that historically included process wastewater from The Leprino Foods Company (Leprino) cheese processing plants.
2. Leprino owns and operates two cheese production facilities within the City known as the Leprino West Plant and the Leprino East Plant at 351 North Belle Haven Drive and 490 F Street, respectively. The two Leprino facilities process approximately 14 million pounds of milk and produce an average of 1.5 million pounds of mozzarella cheese per day.
3. Starting in 2002, process water from Leprino's two facilities is temporarily stored for flow equalization at the Leprino West Plant, then conveyed to Leprino's treatment facility, built adjacent to the City's WWTF, at 1250 South 19th Avenue for further treatment.
4. After treatment, Leprino's process water is combined with the City's treated effluent before the combined waste streams (combined effluent) are disinfected to comply with disinfected secondary-23 recycled water requirements as defined in section 60301.225 of California Code of Regulations, Title 22 (Title 22).
5. After treatment and disinfection, the combined effluent is conveyed via pipeline about six miles west to where it is discharged at the head of the Westlake Canal. Westlake received the combined effluent under an agreement with the City (8 January 1996) and WDRs Order 96-050; Westlake recycles the wastewater by using it to irrigate crops grown on Westlake's farmland.
6. The combined effluent discharged to the Westlake Canal was increased to approximately 4.5 mgd in accordance with a complete Report of Waste Discharge (RWD) submitted by the City and Leprino in October 2001, following completion of Leprino's treatment system upgrade and construction of a new outfall pipeline to handle the increased flows.

7. WDRs Order 96-050 contains Discharge Specification B.8, which states “*The maximum electrical conductivity (EC) of the discharge shall not exceed the average EC of the source water plus 500 µmho/cm*”. The average EC of the City’s source water is about 700 µmho/cm, and therefore the combined effluent discharge to the Westlake Canal was required to meet a limit of about 1,200 µmho/cm.
8. The combined effluent EC level from January 2014 through December 2016 averaged around 2,100 µmho/cm, which exceeds the limit set by Discharge Specification B.8 of WDRs Order 96-060. As a result, in early 2017 Westlake indicated that it would no longer accept the combined effluent. In 2018, Leprino entered an agreement with Sandridge Partners, LP (Sandridge) dated 11 January 2018 to discharge the combined effluent to land owned by Sandridge just south of Westlake Farms, in accordance with Time Schedule Order (TSO) R5-2018-0900 issued by the Central Valley Water Board’s Executive Officer on 27 March 2018. TSO Order R5-2018-0900 requires the City and Leprino to come into compliance with Order 96-050 by 26 March 2020 or submit a RWD to discharge to an alternate location.

Because there is uncertainty as to how long these arrangements will last, Leprino arranged to buy 2,200 acres of farmland north of the head of the Westlake Canal known as Stone Ranch.

9. On 8 June 2018, Leprino and the City submitted a RWD prepared by Kennedy/Jenks Consultants (Kennedy/Jenks) to discharge the combined effluent to the Stone Ranch property. The RWD proposes to discharge up to 5.0 mgd of combined effluent (monthly average) from the City and Leprino for reuse on approximately 1,900 acres of farmland at Stone Ranch. The combined effluent will be blended with existing irrigation water and applied to Stone Ranch to irrigate feed and fodder crops. The locations of the City’s WWTF, Leprino’s facilities, and Stone Ranch are depicted on **Attachments A and B** (incorporated herein).
10. Leprino and the City will use a portion of its existing effluent disposal pipeline to convey the combined effluent to Stone Ranch from the WWTF. However, a new pipeline will need to be constructed to connect the existing pipeline to the irrigation canal system at Stone Ranch, approximately four miles to the north.
11. The City and Leprino are named as co-dischargers in this Order and are responsible for compliance with these WDRs. The City and Leprino are collectively hereafter referred to as Dischargers.

Stone Ranch Property

12. The Stone Ranch property (or Stone Ranch) is approximately four miles west of the City Latitude 36°19’11.44”N, Longitude 119°53’34.98”W (Sections 3, 10, and 11, Township 19 South, Range 19 East, MDB&M), and comprises approximately 2,200 acres that has historically been used to grow crops such as cotton, alfalfa, wheat, tomatoes, and garlic.
13. The Crescent Bypass and a small section of the South Fork of the Kings River (or South Fork) border Stone Ranch to the east (**Attachment B**). Flows in the South Fork are controlled by releases from Pine Flat Dam. The Crescent Bypass is a man-made channel constructed in the 1930’s between a control structure on the North Fork of the Kings River and the South Fork and

is designed to convey flood waters to the Tulare Lake Basin under extreme flow conditions. According to the 2018 RWD, the Crescent Bypass has only been used twice since 1969.

14. Stone Ranch has approximately 1,900 acres of land available for irrigation (land application area or LAA). A subsurface drainage collection and evaporation basin system for the property was installed in 1984 and 1985. The LAA fields have subsurface drain lines, and the fields and evaporation basin are surrounded by interceptor drains and/or tailwater ditches that capture excess flows and prevent runoff and seepage into the Crescent Bypass. Drainage flows are collected in sumps and pumped to the evaporation basin at Stone Ranch.
15. Discharge of tile drainage water to the evaporation basin at Stone Ranch is currently regulated by WDRs Order 98-229. The evaporation basin covers approximately 200 acres adjacent to the Crescent Bypass, with a storage capacity of approximately 710 acre-feet with two feet of freeboard. The basin is divided into three cells (north cell, east cell, and west cell). Maximum depth of the basin is 5.75 feet with a maximum water depth of 3.75 feet and side slopes of approximately 8:1 (horizontal: vertical). A permeability test performed within the foot print of the basin prior to construction showed a seepage rate of 1.0×10^{-6} centimeters per second (cm/sec).
16. Order 98-229 will remain in effect to handle discharge of tile drainage water to the evaporation basin until the City and Leprino finalize plans and begin discharge of the combined effluent to the Stone Ranch Property for irrigation of crops. At that time, all the conditions in this Order including its Monitoring and Reporting Program will become effective.
17. An Environmental Impact Report (EIR) was prepared in 1993 for the Stone Ranch evaporation basin. The EIR concluded that the evaporation basin presents a minimal risk of adverse effects on water bird reproduction due to selenium. In 1997, the State Water Resources Control Board (State Water Board) Resolution 97-09 modified a previous Stone Ranch WDR (Order 93-156) to require, if selenium contamination exists, the use of US Fish and Wildlife Service (USFWS) protocols to determine the amount and type of wildlife habitat necessary to mitigate wildlife impacts. Use of these protocols for Order 98-229 determined that no wildlife compensation habitat was required.
18. Annual monitoring requirements for Stone Ranch (Order 98-229) include monitoring of selenium in evaporation basin water and sediment, in invertebrates collected from the basin cells, and in grebe eggs, when present. Bird counts and nest egg surveys are also required.

This Order carries over requirements for selenium monitoring of water, soil, and invertebrates within the evaporation basin, as well as wildlife monitoring including bird counts and nest egg surveys.

Facilities

19. Process water from Leprino's two facilities is combined in equalization tanks and conveyed through a 12,000-foot pipeline to the Leprino treatment facility adjacent to the City's WWTF. The Leprino treatment system utilizes two High-Rate Activated Sludge (HRAS) reactors, two Dissolved Air Flotation (DAF) units, and three Sequencing Batch Reactors (SBRs), as shown in **Attachment C** (incorporated herein). The HRAS system is used to remove 75% or more of soluble chemical oxygen demand. The DAF units act as clarifiers to remove activated sludge from the effluent stream to pump it back into the HRAS reactors. The SBRs are used to remove

additional BOD, and for nitrification and denitrification. The wastewater then goes through final filtration before it is discharged to an existing pipeline where it is (a) combined with the City's treated sanitary effluent and (b) disinfected using gas chlorination. Leprino's treatment system also includes two lined facultative lagoons used for off-spec wastewater and wasted solids.

20. Average water quality of Leprino's treated effluent (not combined with the City's effluent) is presented in Table 1 below.

Table 1 – Leprino Effluent Quality¹

Constituent/Parameter	Units	Average
Electrical Conductivity	µmhos/cm	2,657
Total Dissolved Solids	mg/L	1,561
Fixed Dissolved Solids ²	mg/L	1,331
Nitrate as Nitrogen	mg/L	3.8
Ammonia as Nitrogen	mg/L	0.8
Total Kjeldahl Nitrogen	mg/L	2.7
Biochemical Oxygen Demand	mg/L	10
Chloride	mg/L	396
Boron	mg/L	0.37
Sodium	mg/L	384
Sulfate	mg/L	21

1. Average of data from January 2013 to January 2018.
2. Average based on four samples collected between January and March 2018.

21. The City's WWTF treatment process consists of two clay-lined aerated ponds (Ponds 1A and 1B) and two partially aerated storage ponds (Ponds 2 and 3). Average water quality of the City's treated effluent prior to disinfection (not combined with Leprino's effluent) is presented in Table 2 below.

Table 2 – City's Effluent Quality¹

Constituent/Parameter	Units	Average
Electrical Conductivity	µmhos/cm	1,168
Biochemical Oxygen Demand	mg/L	33.5
pH	s.u.	7.0
Total Suspended Solids (TSS)	mg/L	43.5

1. Average based on data collected from January 2013 through January 2018.

22. Average water quality of the combined effluent after disinfection is presented in Table 3 below.

Table 3 – Combined Effluent Water Quality

Constituent/Parameter	Units	Average
Electrical Conductivity	µmhos/cm	2,141 ¹
Total Dissolved Solids	mg/L	1,405 ³
Fixed Dissolved Solids	mg/L	1,093 ³
Nitrate as Nitrogen	mg/L	3.2 ²
Ammonia as Nitrogen	mg/L	7.8 ¹
Total Kjeldahl Nitrogen	mg/L	13.6 ²
Total Nitrogen	mg/L	16.8 ²
Biochemical Oxygen Demand	mg/L	12.7 ¹
Total Suspended Solids	mg/L	22 ¹
Chloride	mg/L	353 ²
Boron	mg/L	0.56 ²
Sodium	mg/L	318 ¹

Constituent/Parameter	Units	Average
Sulfate	mg/L	14.5 ²
Arsenic	µg/L	4.03 ⁴
Selenium	µg/L	2.02 ⁴

1. Average based on data collected from January 2013 through January 2018.
2. Average based on three samples collected in March 2018.
3. Average based on four samples collected between January and March 2018.
4. Average based on three samples collected in March 2018, one in September 2018, and two in October 2018.

23. The source water used in the Leprino facilities is supplied by the City. Average source water quality data is presented in Table 4 below.

Table 4 – Source Water Quality¹

Constituent/Parameter	Units	Average
Electrical Conductivity	µmhos/cm	742
Total Dissolved Solids	mg/L	463
Chloride	mg/L	91
Sodium	mg/L	156
Sulfate	mg/L	1.4
Arsenic	µg/L	5.67 ²
Selenium	µg/L	1.30 ²

1. Average based on five semi-annual samples collected at the Leprino West Facility between 2015 - 2017.
2. Average based on one sample collected in September 2018 and two collected in October 2018.

24. Based on daily flow data collected between 2013 and 2018, Leprino discharges an average of 2.6 mgd of treated process water. This is combined with an average of 1.6 mgd of treated sanitary effluent from the City to create an average discharge of 4.2 mgd of combined effluent. This Order includes a monthly average flow limit of 5.0 mgd of combined effluent to Stone Ranch.
25. Solids/sludge from Leprino’s wastewater treatment system are captured or discharged to one of the double lined facultative lagoons shown in **Attachment C**. The lagoons have a clay liner overlain by a synthetic liner. As necessary, solids are removed from the lagoon using a dredge, then dewatered and stored temporarily on a concrete slab before being hauled off-site for further processing, disposal, or land application at the Stone Ranch property.
26. The City’s aerated treatment ponds are periodically dredged, as needed, to remove solids and sludge collected in the ponds. In the past, the sludge removed from the ponds has been taken off site for disposal at a permitted facility.

Land Application Area Practices

27. Stone Ranch has approximately 1,900 acres of farmland managed as 11 fields, all with irrigation water supply and drainage systems to support crop growth. The crops proposed for the land application program include winter wheat grown for forage (winter forage), alfalfa, and other crops that are allowed by Title 22 for irrigation of disinfected secondary-23 recycled water.
28. The water supply system for Stone Ranch consists of an extensive irrigation canal system with pump stations and gypsum treatment equipment that serve the entire farmed acreage. The canal system will receive combined effluent via the pipeline from Lemoore as well as

groundwater inputs from nine irrigation wells at Stone Ranch. The canal system will allow for blending of combined effluent and pumped groundwater prior to irrigation. Application will be by flood irrigation of checks within the individual fields.

29. The irrigation wells for Stone Ranch are described in Table 5 below.

Table 5 – Irrigation Well Completion Depths and Water Quality¹

Irrigation Well ID	Total Depth (Feet bsg³)	Screened Interval (Feet bsg³)	Estimated Pumping Rate (gpm)	Electrical Conductivity (µmho/cm)	TDS (mg/L)	Boron (mg/L)	Selenium (µg/L)
Well 2	220	180-220	500	1,440	970	2.3	<1
Well 6	584	116-584 ⁴	500	1,840	1,230	1.9	1
Well 13 ²	540	290-390 400-540	-	-	-	-	-
Well 14	520	280-410 420-520	700	913	560	1.8	<1
Well 15	530	280-380 390-530	500	711	430	1.3	<1
Well 16	540	320-430 440-540	1,000	4,070	3,110	3.2	3
Well 17	540	300-540	1,500	3,140	2,450	3.1	1
Well 18	540	300-540	1,500	1,920	1,250	2.6	<1
Well 19	1,290	1080-1150 1170-1270	2,500	1,030	620	1.6	2

1. Samples collected on 14 November 2017.
2. No sample collected from Well 13 in November 2017.
3. Below site grade (bsg).
4. Screened interval and depth assumed, actual details not available.

30. The drainage system for the LAA fields consists of drain lines installed at approximately eight feet below site grade (bsg). The drain line spacing and depth are shown in Table 6 below. Flows captured by the drainage system are collected in sumps and pumped to the existing evaporation basin at Stone Ranch. There are also interceptor drains around the evaporation basin to capture any lateral seepage, which are shown in **Attachment D** (incorporated herein). According to the RWD, the East Tailwater Ditch, between the evaporation basin and the Crescent Bypass, will be surveyed and possibly deepened so that it is below the bottom of the Crescent Bypass to ensure that no seepage from the evaporation basin into this surface water drainage channel occurs.

Table 6 – LAA Field Drain Line Spacing

LAA Field ID	Tile Drain Spacing (Feet)
Field 35	Perimeter Drains around field (~1,200 feet field width)
Field 34W	790
Field 27E, Field 27W	850
Field 11	500 – 600
Field 3NW, Field 3NE	420 – 680
Field 3SW, Field 10NW	470
Field 3SE, Field 10NE	660

31. The field drain lines collect water from both percolation below the crop root zone and shallow groundwater present throughout Stone Ranch. These flows discharge into six sumps distributed throughout the Stone Ranch property. Flows collected in the sumps are pumped to the evaporation basin, controlled by high and low water level sensors. Flow measurements are recorded at the sumps. The interceptor drains and tailwater ditches are also connected to the drainage sumps. Total sump flow and flow weighted average EC levels for four years are presented in Table 7 below. The relatively high EC levels are indicative of the shallow groundwater collected in the drain lines.

Table 7 – Sump Flow and EC Readings for Four Years

Year	Total Sump Flow (acre-ft/day)	Flow-Weighted Average Sump Electrical Conductivity (µmhos/cm)
2000	1,308	20,177
2006	882	24,487
2013	832	15,639
2016	412	15,104

32. Since the combined effluent from the City and Leprino has been treated, the concentrations of biochemical oxygen demand (BOD) (12.7 mg/L) and total nitrogen (16.8 mg/L) shown in Table 3 are low compared to other food processing wastewater. As a result, average loading rates at about 9 pounds per acre per day (lbs/acre/day) and 160 pounds per acre per year (lbs/acre/year), respectively for these constituents are well below the loading rate guidelines provided by the California League of Food Processors (Manual of Good Practice for Land Application of Food Processing/Rinse Water, 2007).

33. The 2018 RWD evaluated several cropping and combined effluent storage scenarios to develop a plan that would meet the needs of the project. The scenarios included (1) farming the LAA acreage with 50% alfalfa and 50% winter forage with and without storage and (2) farming the LAA with 75% alfalfa and 25% winter forage with and without storage. Based on the analysis of the cropping strategies, the Dischargers selected 50% alfalfa and 50% winter forage without additional storage as the proposed project.

34. The evaporation basin water balance included in the 2018 RWD uses the proposed discharge to the Stone Ranch property and demonstrates that there is sufficient storage in the existing evaporation basin for percolation and groundwater inflow from the subsurface drainage system to handle wastewater flows at the proposed flow rate of 5.0 mgd during 100-year return period annual precipitation conditions. Table 8 shows the results of the water balance analysis for an average climate year and a 100-year wet year. With the proposed crop plan of 50% alfalfa and 50% winter forage, the evaporation basin would need a maximum of 678 acre-ft of storage during a 100-year wet year to accommodate evaporation basin storage during March (the month requiring the most storage). With a storage capacity of about 710 acre-ft in the evaporation basin with two feet of freeboard, this would leave almost 32 acre-ft of excess capacity. Additional treated effluent storage is available within the effluent storage ponds and facultative lagoons in Lemoore and within the irrigation system to provide about 10 days of storage, at the proposed flow rate, during periods when the combined effluent cannot be applied to the LAA (e.g., during a storm event, power outage, etc.).

Table 8 – Evaporation Basin Water and Salt Balance Results

Water Balance Parameter	Average Climate	100-year Wet Year
Effective Rainfall (Acre-ft)	105	338
Adjusted Evaporation (Acre-ft)	733	879
Inflow from Collection Sumps (Acre-ft)	771	1,075
Basin Seepage (Acre-ft)	152	182
Basin Maximum Storage Requirement (Acre-ft)	404	678
Flow-Weighted Annual Average Collection Sump TDS (mg/L)	18,582	13,440
Flow-Weighted Annual Average Evaporation Basin TDS (mg/L)	33,613	21,434

35. Table 9 shows the results of the LAA soil water and salt balance analysis with the proposed cropping plan of 50% alfalfa and 50% winter forage under average and 100-year wet year climate conditions.

Table 9 – LAA Soil Water and Salt Balance Results

Water Balance Parameter	Average Climate	100-Year Wet Year
General Parameters		
Effective Rainfall (Inches)	8.4	20.6
Reference Evapotranspiration (Inches)	61.6	60.6
Combined Effluent Flow (mgd)	5.0	5.0
Blended Combined Effluent and Groundwater TDS (mg/L) ¹	1,269	1,262
Alfalfa LAA Fields		
Net Combined Effluent Irrigation (Inches)	35.9	35.9
Net Supplemental Irrigation (Inches)	35.6	32.7
Percolation (Inches)	19.4	31.6
Percolation (Acre-ft)	1,536	2,503
Percolate Collected by Drain Lines (Acre-ft)	308	501
Percolate TDS (mg/L)	2,147	1,556
Winter Forage LAA Fields²		
Net Combined Effluent Irrigation (Inches)	13.6	13.6
Net Supplemental Irrigation (Inches)	14.3	5.2
Percolation (Inches)	11.1	18.1
Percolation (Acre-ft)	878	1,431
Percolate Collected by Drain Lines (Acre-ft)	176	286
Percolate TDS (mg/L)	1,597	953

1. Flow weighted average. Based on the blend of combined effluent and supplemental irrigation water from groundwater wells.

2. Winter forage crops are not irrigated during the period between spring harvest and fall planting.

Water Recycling Regulatory Considerations

36. Undisinfected domestic wastewater contains human pathogens that are typically measured using total or fecal coliform organism as indicator organisms. The State Water Board's Division of Drinking Water (DDW), which has primary statewide responsibility for protecting water quality and public health, has established statewide criteria for the use of recycled water (Title 22, section 60301 et seq.). This Order implements the applicable portions of the Title 22 water recycling regulations.
37. Effluent from the WWTF will be treated to meet at least the requirements for disinfected secondary-23 recycled water, under Title 22, section 60301. This Order requires that the combined effluent be used for irrigation on crops at Stone Ranch in accordance with Title 22, section 60304.
38. On 3 February 2009, the State Water Board adopted Resolution 2009-0011, *Adoption of a Policy for Water Quality Control for Recycled Water* (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gas emissions.
39. On 23 April 2009, the Central Valley Water Board adopted Resolution R5-2009-0028, *In Support of Regionalization, Reclamation, Recycling and Conservation for Wastewater Treatment Plants*, which encourages water recycling, water conservation, and the regionalization of wastewater treatment facilities. Specifically, Resolution R5-2009-0028 requires dischargers to document:
 - a. Efforts to promote new or expanded wastewater recycling opportunities and programs;
 - b. Water conservation measures; and
 - c. Regional wastewater management opportunities and solutions (e.g. regionalization).
40. Recycling of the Discharger's combined effluent is consistent with the intent of the State Water Board's Recycled Water Policy and Resolution R5-2009-0028.
41. Title 22, section 60323 requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards to DDW for approval. Quad Knopf prepared a Title 22 Engineering Report on behalf of the City to demonstrate that the proposed discharge to Stone Ranch is consistent with Title 22 requirements for disinfected secondary-23 recycled water. This report was approved by DDW on 27 September 2018.

Site-Specific Conditions

42. Land uses in the vicinity of Stone Ranch are the Lemoore Naval Air Station and agricultural production. Crops grown in the area include cotton, alfalfa, wheat, tomatoes, and garlic.
43. Stone Ranch is in an arid climate characterized by dry summers and mild winters. Average annual reference evapotranspiration is 61.5 inches per year (in/yr) at the California Irrigation Management Information System (CIMIS) Stratford Station. The average annual precipitation is about 7.6 inches at the Stratford Station. The 100-year annual return precipitation of 24.6 in/yr

was based on the probability distribution of the annual precipitation dataset distributed per month in the same proportion as average precipitation.

44. The predominant soil types at Stone Ranch are Gepford Clay and Lethent Clay Loam. The Gepford Clay on the east side of Stone Ranch, is a very deep, poorly drained clay formed in lacustrine sediments. The Lethent Clay Loam soil type predominantly on the west side of Stone Ranch, generally consists of very deep, moderately well drained soils overlain on alluvial fans.
45. According to Federal Emergency Management Agency (FEMA) Map Number 06031C0135D (Sept. 2015), the majority of Stone Ranch is in Zone X, which has a minimal flood hazard. Some areas on the east side of Stone Ranch are in Zone AE with a base flood elevation of 206 feet.
46. The "Navy Ditch" runs through Stone Ranch north of the evaporation basin (**Attachment B**). This ditch historically discharged to the Crescent Bypass, but the connection was blocked with an earthen dam in the late 1980's.

Groundwater Considerations

47. Regional groundwater flow in the area is in the southwesterly direction, towards the Tulare Lakebed. This is based on deeper groundwater zones and does not necessarily reflect groundwater flow in the shallow groundwater zones beneath Stone Ranch.
48. There are three primary clay layers beneath Stone Ranch that restrict downward migration of groundwater. These layers are lacustrine deposits consisting of very fine, clay-rich textures with very low permeability. The first layer, the "A Clay", is approximately 60 to 100 feet bsg. The C Clay is approximately 250 to 300 feet bsg beneath Stone Ranch. The third layer, the E Clay (or Corcoran Clay) is located between 610 and 700 feet bsg.
49. Monitoring well MW-1 was installed in 1992 at Stone Ranch between the west and north evaporation basin cells. This well was installed above the A Clay to a total depth of 69 feet bsg with a screened interval from 46 to 56 feet bsg. According to the RWD, a flexible wall permeability test was performed on a soil sample obtained from this depth. The result of this test indicated a vertical permeability of 5.2×10^{-8} cm/s in the A Clay. The static water level above the A Clay at Stone Ranch ranges from 4 to 14 feet bsg.
50. There are nine onsite irrigation wells at Stone Ranch; all are completed in groundwater beneath the A Clay. One irrigation well is installed to 220 feet bsg, between the A and C Clays. Seven wells range in depth from 510 to 584 bsg (between the C and E Clays). One irrigation well is installed to 1,290 feet bsg (below the E Clay). Groundwater pumped from these wells will be blended with the combined effluent and used for irrigation at Stone Ranch.
51. In 1983, 25 shallow groundwater observation wells were installed to approximately 12 feet bsg at Stone Ranch. At that time, the drainage collection system had not yet been installed and flood irrigation was being used at Stone Ranch. Water level elevation data from these wells indicate that shallow groundwater was moving toward the northeast in April 1983 with depth to shallow groundwater ranging from 1 to 3 feet bsg. These wells no longer exist at the site.

52. Around the Stone Ranch evaporation basin, there are four arrays of piezometers that were installed to a depth of 14 feet in 1992. There are five piezometers in each array (20 piezometers total).
53. Depth to groundwater at Stone Ranch is measured quarterly at the 20 piezometer locations and at monitoring well MW-1. Based on water level elevation data collected in late 2017, shallow groundwater was moving toward the south-southeast.
54. In November 2017, 10 auger holes were advanced at Stone Ranch to depths ranging from 4 to 13 feet bsg. Water level elevation information collected from these borings indicate that shallow groundwater was moving toward the southeast.
55. Quality of groundwater above the A Clay is summarized in Table 10. Annual samples are collected from monitoring well MW-1. Groundwater grab samples were collected from the auger holes in November 2017, and from the piezometers in March 2018. The 1983 groundwater quality dataset collected from shallow monitoring wells in the area that have since been destroyed is also included in the table.

The shallow groundwater has been well characterized by long term monitoring at MW-1 and at the piezometer arrays (for EC and water level), with additional shallow groundwater datasets collected in 1983 and 2017.

Table 10 – Shallow Groundwater Quality Above the A Clay

Constituent	Monitoring Well (MW-1)¹	November 2017 Range for Auger Hole Samples²	March 2018 Range for Piezometer Samples³	1983 Dataset⁴
pH	7.8	7.3 - 7.7	7.3 - 8	-
Electrical Conductivity (µmho/cm)	42,500	4,090 - 47,800	932 - 82,500	> 15,000
Total Dissolved Solids (mg/L)	50,200	3,810 - 58,600	570 - 111,000	-
Calcium (mg/L)	411	229 - 761	28 - 500	1,215
Magnesium (mg/L)	1,300	119 - 1,910	34 - 3,390	-
Sodium (mg/L)	13,600	292 - 18,300	184 - 43,000	4,430
Potassium (mg/L)	27	5.0 - 32.0	7 - 71	-
Chloride (mg/L)	3,400	150 - 2,800	37 - 3,500	927
Sulfate (mg/L)	31,600	2,040 - 27,600	164 - 38,800	-
Iron (mg/L)	7.8	7.5 - 67.3	0.25 - 425	-
Manganese (mg/L)	1.3	0.14 - 4.2	0.164 - 328	-
Boron (mg/L)	46	3.2 - 67.4	1.2 - 126	11.4
Selenium (µg/L)	16 ⁽⁵⁾	<2.0 - 43.0	2 - 100	-
Arsenic (µg/L)	17	10 - 46	9 - 340	-
Nitrate-N + Nitrite-N (mg/L)	-	1.7 - 23	0.1 - 44	15
Screened Interval or Depth (ft bsg)	46 - 56	4.2 - 13.4	14	12

1 Average of annual data collected between 1993 and 2017.

2 Range for all samples except GP-1, located adjacent to the river where the concentrations for seven salinity constituents are an order or magnitude lower than those of other samples.

3 Samples collected from piezometers on March 2018.

4 Samples collected by J.M. Lord in 1983.

5 The median value for Selenium at MW-1 is 0.4 µg/L, due to the number of non-detect values in the dataset

56. Groundwater samples were collected from eight of the onsite irrigation wells in November 2017. The results from seven of the eight wells that are installed between the A Clay and E Clay are presented in Table 11 below.

Table 11 – Stone Ranch Irrigation Well Water Quality^{1, 2} (Between the A and E Clay)

Constituent	Irrigation Wells Between the A Clay and E Clay
pH	8.2
Electrical Conductivity (µmho/cm)	2,306
Total Dissolved Solids (mg/L)	1,672
Calcium (mg/L)	112
Magnesium (mg/L)	23
Sodium (mg/L)	389
Chloride (mg/L)	120
Sulfate (mg/L)	796
Iron (µg/L)	135
Manganese (µg/L)	214
Boron (mg/L)	2.5
Selenium (µg/L)	1.3
Arsenic (µg/L)	1.5

¹ Samples collected on 14 November 2017 from wells 2, 6, 14, 15, 16, 17, 18.

² Results are flow weighted based on estimated pumping rate of each well.

Basin Plan, Beneficial Uses, and Water Quality Objectives

57. The operative *Water Quality Control Plan for the Tulare Lake Basin* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference plans and policies of the State Water Board. In accordance with Water Code section 13263 (a), these waste discharge requirements implement the Basin Plan.
58. Stone Ranch is in the southwestern corner of the Kings Groundwater Basin 5-237 within the Tulare Lake Hydrologic Region. The Basin Plan identifies the following beneficial uses of groundwater in the basin: municipal (MUN); agricultural (AGR); and industrial service supply (IND).
59. The 1998 WDRs (Order No. 98-229) for Stone Ranch state the following:

The groundwater in the upper portion of the aquifer within one mile of the Stone Ranch does not have the beneficial use of municipal. The TDS typically exceeds 3,000 mg/L and the water contains excessive amounts of boron, chloride, sulfate, and sodium. This water cannot be used for municipal or domestic supply without extensive treatment, which is uneconomical given that excellent quality surface water (from the California Aqueduct or Kings River) and good quality groundwater (from below the “E” clay) are available. It is therefore not expected to ever supply a public water system.

The deeper confined groundwater (about 700 feet deep and beneath the “E” clay) is of good quality and can be beneficially used for municipal, agricultural, and industrial supply.

60. Stone Ranch lies within the Lower Kings River Hydrologic Area (No. 551.80). The Basin Plan specifies beneficial uses of the Kings River from Peoples Weir to Empire Weir No. 2 on the South Fork as agricultural supply (AGR), water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); and groundwater recharge (GWR).
61. The Basin Plan includes narrative water quality objectives for chemical constituents that, at a minimum, require water designated as domestic or municipal supply to meet the Maximum Contaminant Levels (MCLs) specified in Title 22 of the California Code of Regulations (hereafter Title 22). It also sets forth a numeric objective for total coliform organisms.
62. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100mL in MUN groundwater.
63. The Basin Plan water quality objectives do not require improvement over naturally occurring background groundwater quality. However, if background groundwater quality exceeds the numeric objectives, background water quality becomes the objective.
64. The Basin Plan establishes narrative water quality objectives for chemical constituents, taste and odors, and toxicity in groundwater. The narrative toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses.
65. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt a numerical limitation in order to implement the narrative objective.
66. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:
 - a. The maximum electrical conductivity (EC) in the effluent discharged to land shall not exceed the EC of the source water supply plus 500 $\mu\text{mhos/cm}$. When the supply water is from more than one source, the EC shall be calculated as the weighted average of all sources.
 - b. Discharges to areas that may recharge to good quality groundwater shall not exceed an EC of 1,000 $\mu\text{mhos/cm}$, a chloride concentration of 175 mg/L, or a boron concentration of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.
67. The Basin Plan authorizes an exemption to the incremental EC increase limit of 500 $\mu\text{mhos/cm}$ for food processing industries that discharge to land and exhibit a disproportionate increase in

EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected (the “food-processing exemption”). Exemptions must be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

68. The average fixed dissolved solids (FDS) to total dissolved solids (TDS) ratios of the combined effluent and the Leprino effluent are shown in Table 12. The FDS:TDS ratio for Leprino’s effluent is 0.77 which indicates that 23 percent of the TDS is organic dissolved solids and will degrade during land application. Based on this information, the combined effluent discharge qualifies for the food-processing exemption for EC.

Table 12 – FDS:TDS Ratios

Wastewater Source	EC (µmho/cm)	TDS (mg/L)	FDS (mg/L)	FDS:TDS Ratio
Combined Effluent	2,063	1,405	1,093	0.77
Leprino Effluent	2,670	1,736	1,331	0.77

69. The Basin Plan also authorizes an exemption (the “water conservation exemption”) to the incremental EC increase limit for industrial dischargers that meet the following condition:

An exception to this EC limit may be permitted for industrial sources when the discharger technically demonstrates that allowing a greater net incremental increase in EC will result in lower mass emissions of salt and in conservation of water, provided that beneficial uses are protected.

70. Leprino’s discharge qualifies for the water conservation exemption based on Leprino’s implementation of short and long term measures to reduce use of the City’s supply of potable water. The RWD indicates that Leprino employs best practicable treatment or control (BPTC) to conserve water and minimize salinity in its discharge including:
- Streamlining the clean-in-place (CIP) wash system and use of cleaning chemicals at recommended rates;
 - Replaces higher salinity well water with lower salinity “COW Water” (treated water separated from milk) for certain processes within the Plant replacing almost 1.2 mgd of the City’s potable water; and
 - Use of reverse osmosis treatment units to concentrate lactose solids in the raw product. The clean water from the treatment process is also reused.

71. This Order establishes a performance-based limit for FDS on the combined effluent of 1,400 mg/L. This is consistent with the salinity of current irrigation supplies at Stone Ranch (including all irrigation wells above and below the E Clay at 1,370 mg/L TDS), is slightly better than groundwater quality between the A and E Clays (1,672 mg/L TDS), and is an order of magnitude better than first encountered groundwater above the A Clay (50,200 mg/L TDS).

Antidegradation Analysis

72. The State Water Board's, *Policy with Respect to Maintaining High Quality Waters of the State*, Resolution 68-16 (Antidegradation Policy) prohibits degradation of groundwater unless it is demonstrated that:
- a. The degradation will not unreasonably affect present and anticipated beneficial uses;
 - b. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - c. The discharger employs best practicable treatment or control (BPTC) to minimize degradation; and
 - d. The degradation is consistent with the maximum benefit to the people of the State.
73. The Antidegradation Policy applies when an activity discharges to high quality waters and will result in some degradation of such high-quality waters. "High quality waters" are defined as 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 (SWRCB 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. Constituents of concern that were evaluated in the Antidegradation Analysis include organics, nutrients, and salts. These constituents are evaluated in the following findings.
- a. **For organics**, with an average BOD of approximately 13 mg/L in the combined effluent, the expected organic load to the LAA will be about 9 pounds per acre per day (lbs/acre/day) (assuming an irrigation rate of about 3 inches per day). With proper management of the LAA, this extremely low loading rate from the proposed discharge does not have the potential to cause nuisance conditions.
 - b. **For nitrogen**, there is limited data available for nitrogen concentrations in the combined effluent. Leprino's effluent has an average total nitrogen concentration of <10 mg/L so the total nitrogen concentration for the combined effluent is expected to be approximately 16 to 20 mg/L (based on three samples collected in March 2018). With a combined effluent total nitrogen concentration of 20 mg/L, the expected nitrogen loading to the 1,900-acre LAA at 5.0 mgd would be approximately 160 pounds per acre per year (lbs/acre/year). This loading rate is well below the nitrogen crop requirements for alfalfa and winter forage (approximately 500 lb/ac/yr) and, with proper management of the LAA, is not expected to degrade groundwater quality for nitrogen.
 - c. **For salinity**, while shallow groundwater beneath Stone Ranch is not considered a high-quality water with respect to salinity, the 2018 RWD provides a detailed analysis of the discharge and its potential impact on shallow groundwater. Water and salt balance analyses of the irrigation program were completed to address percolation beneath the root zone, drain line collection of water and salts, and seepage from the evaporation basin. Potential impacts to groundwater with respect to first encountered groundwater above the

A Clay as well as underlying groundwater below the A Clay are further discussed below in Findings 75 through 77.

75. Table 13 provides a comparison of the average concentrations for constituents in the combined effluent with a) current irrigation water at Stone Ranch, b) first encountered groundwater above the A Clay, and c) deeper groundwater between the A and E Clays (between about 60 and 600 feet bsg). The constituent levels in the combined effluent and groundwater irrigation supply are lower than those of the groundwater above the A Clay. Groundwater irrigation supply has better water quality than the groundwater between the A and E Clay layers because it includes one well completed below the E Clay. The combined effluent has lower constituent levels than those in groundwater between the A and E Clay, except for arsenic and chloride.

Table 13. Average Concentrations for Combined Effluent and Groundwater

Constituent	Combined Effluent	Irrigation Wells¹	Groundwater Above the A Clay²	Groundwater Between A and E Clays⁵
EC, µmho/cm	2,141	1,939	42,528 ³ / 13,369 ⁴	2,306
TDS [FDS], mg/L	1,405 [1,093]	1,370	50,228 ³ / 14,078 ⁴	1,672
Arsenic, µg/L	3.6	1.3	19 ³ / 24 ⁴	1.5
Boron, mg/L	0.56	2.3	46 ³ / 23 ⁴	2.5
Chloride, mg/L	353	107	3,440 ³ / 674 ⁴	120
Sodium, mg/L	318	352	13,584 ³ / 3,957 ⁴	389
Sulfate, mg/L	14.5	568	31,588 ³ / 7,142 ⁴	796

1. Flow-weighted average of results from 8 of the 9 irrigation wells at Stone Ranch. This includes one well installed below the E Clay.
2. First encountered groundwater above the A clay, approximately 60 feet bsg.
3. Average of annual samples from MW-1, within the footprint of the evaporation basin, collected from 1993 – 2017.
4. Average of samples from 10 auger holes collected across the site in November 2017.
5. Average of seven irrigation wells between the A and E clays

76. Potential impacts of the discharge on groundwater above the A Clay are addressed by comparing percolation beneath the cropped fields and seepage from the evaporation basin to the quality of groundwater above the A Clay. Table 14 summarizes the results of this analysis. The percolate beneath the cropped fields has constituent levels that are significantly below those for groundwater above the A Clay. The evaporation basin seepage has higher constituent levels as a result of evaporative concentration that occurs in the basin. However, because the seepage rate is much lower than the percolation rate beneath the fields, the combined percolate and seepage has significantly better water quality than underlying groundwater quality above the A Clay.

This Order sets a performance-based FDS limit of 1,400 mg/L on the combined discharge, consistent with the salinity of existing groundwater supplies, to ensure the discharge does not contribute to further degradation of groundwater for salinity.

Table 14. Comparison of Percolate and Seepage with Groundwater Quality above the A Clay

Constituent	Percolate from Cropped Fields	Evaporation Basin Seepage	Combined¹ Percolation and Seepage	Groundwater Above the A Clay²
Arsenic, µg/L	3.6	39	6	19
Boron, mg/L	2.0	77	8	46
Chloride, mg/L	361	6,288	827	3,440
Sodium, mg/L	525	22,643	2,263	13,584
Sulfate, mg/L	457	50,797	4,412	31,588
TDS, mg/L	1,932	83,700	8,357	50,228
EC, µmho/cm	3,202	74,671	8,817	42,528

1 Flow weighted average of seepage flow (152 Ac-ft) and field percolate (1,779 Ac-ft).

2. 1993 – 2017 Average for MW-1.

77. Potential impacts of the discharge on deeper groundwater below the A Clay were addressed by comparing the water quality of the combined effluent with the flow weighted average water quality for seven Stone Ranch irrigation wells completed between the A Clay and E Clay. The combined effluent discharge is expected to improve groundwater quality above the A Clay, partly because irrigation with the combined effluent replaces use of some of the poorer quality irrigation wells. The proposed discharge is not expected to cause degradation to groundwater between the A Clay and E Clay because shallow groundwater quality above the A Clay is likely to improve and the A Clay is known to have very low permeability. For similar reasons, the discharge is not likely to cause degradation to groundwater beneath the E Clay. If and when groundwater above the A Clay reaches the deepest groundwater, approximately 500 feet below the A Clay, the anticipated impact will be a slight improvement in water quality. This is because the discharge will improve groundwater quality above the A Clay and lessen any potential impacts from groundwater movement below the A Clay and into deeper layers.
78. The City of Lemoore provides BPTC at their WWTF. At the WWTF, the City provides wastewater treatment and discharges effluent that meets treatment and disinfection standards for secondary 23 recycled water. This allows reuse of the effluent for a variety of purposes including replacement of groundwater or surface water that would otherwise be used for irrigation.
79. Leprino provides BPTC including advanced treatment of its process wastewater from the two Leprino facilities to reduce organics and nitrogen, making it suitable for reuse as an irrigation water supply that can replace groundwater and surface water supplies. Leprino has also implemented process water pretreatment and reuse programs in their facilities to decrease potable water use and lower effluent salinity. These efforts result in water conservation by replacing use of the City's source supply with Leprino's treated water. Leprino's treatment and reuse of COW water replaces an average of 1.2 mgd of City's potable water. In addition to lowering source water TDS loading by using low TDS COW water, Leprino continues to lower salt loading by improving facility CIP systems and use of reverse osmosis to concentrate lactose solids and reusing the byproduct clean water stream within the facilities.

80. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State. The discharge of Leprino's treated effluent at Stone Ranch will provide a secure, long term method of wastewater management that will enable the company to continue to operate its two facilities in Lemoore. The presence of Leprino's processing facilities creates a demand for milk that will continue to provide local area dairies with a stable customer for their milk supply. The two facilities currently support over 100 individual dairies in the local area and the associated jobs at each of those dairies. In turn, the dairies maintain agricultural jobs and a strong market for goods and services. Leprino will continue to be an important employer in the area.
81. Leprino's two Lemoore facilities employ approximately 1,400 full time employees. Available information suggests that these two facilities have an annual economic impact of approximately \$4.2 billion, including approximately \$85 million in direct payroll and about \$10 million in local and state taxes. In addition, the citizens of the City of Lemoore will benefit from improved management of their wastewater.
82. Therefore, sufficient reason exists to accommodate the combined effluent discharge of the City and Leprino to Stone Ranch. The Stone Ranch will remain an agricultural operation while using far less groundwater and surface water for irrigation supply, conserving valuable water resources.
83. This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality greater than background or the water quality objectives set forth in the Basin Plan.
84. This Order is consistent with Antidegradation Policy because: (a) the Dischargers implement BPTC to minimize degradation, (b) the Order does not allow further degradation of groundwater at Stone Ranch, c) the discharge allowed by this Order will not unreasonably affect present and anticipated future beneficial uses of groundwater, and (d) the continued operation of the Leprino facilities and a stable discharge method for the City are of maximum benefit to the people of the State.

Other Regulatory Considerations

85. 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 necessarily subject to Water Code section 106.3 because it does not revise, adopt or establish a policy, regulation or grant criterion (see § 106.3, subd. (b)), it nevertheless promotes that policy by requiring discharges to meet MCLs designed to protect human health and ensure water is safe for domestic use where applicable.
86. Based on the threat and complexity of the discharge, the Facility is determined to be classified as a "2B" as defined below:
- a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."

- b. Category B complexity: "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."

87. California Code of Regulations, Title 27 (Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090, states in part:

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

(a) Sewage – Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division.

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

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

88. The discharge authorized herein (except for the discharge of residual sludge and solid waste), and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:

- a. The discharge of combined effluent to Stone Ranch and discharge of tile drainage water to the evaporation basin are exempt pursuant to Title 27, section 20090(b) because they are discharges of wastewater to land and:
 - i. The Central Valley Water Board is issuing WDRs;
 - ii. The discharge is in compliance with the Basin Plan; and
 - iii. The treated effluent discharged to the LAA and tile drainage water collected in the evaporation basin do not need to be managed as hazardous waste.

89. The City is currently enrolled under the State Water Board's Waste Discharge Requirements for Sanitary Sewer Systems, Order 2006-0003-DWQ, which applies to publicly-owned or operated sanitary sewer systems with collection systems in excess of one mile in length.
90. Because all stormwater at the Leprino facilities and at the City's WWTF is collected and disposed of onsite, the Dischargers are not required to obtain coverage under the Statewide General Permit for Storm Water Discharges Associated with Industrial Activities, State Water Board Order 2014-0057-DWQ, NPDES Permit No. CAS000001 (Industrial General Permit) at this time.
91. Water Code section 13267, subdivision (b)(1) provides as follows:

In conducting an investigation ... the regional board may require that any person who has discharged, discharges, or ... proposes to discharge ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
92. The technical reports required under this Order and attached Monitoring and Reporting Program Order R5-2019-0008 are necessary to ensure compliance with the WDRs prescribed herein. Additionally, the burden of producing such reports, as estimated by Central Valley Water Board staff, is also reasonably related to the need for such reports.
93. Absent promulgation of stricter standards pursuant to Water Code section 13801, Department of Water Resources' standards for the construction and destruction of groundwater wells per Bulletins 74-90 (June 1991) and 94-81 (December 1981), shall apply to all wells installed or monitored in connection with this Order.
94. Statistical data analysis methods outlined in the U.S. Environmental Protection Agency's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) are appropriate for determining compliance with Groundwater Limitations of this Order. Depending on circumstances, other methods may also be appropriate.
95. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 Code of Federal Regulations (CFR) part 503, *Standards for the Use or Disposal of Sewage Sludge*, which establish management criteria for protection of ground and surface waters, sets limits and application rates for heavy metals, and establishes stabilization and disinfection criteria.
96. The Central Valley Water Board is using the standards in 40 CFR as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing authority for the 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to EPA.
97. Pursuant to Water Code section 13263, subdivision (g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

CEQA

98. On 3 January 1989 the City of Lemoore certified a Final EIR in accordance with the California Environmental Quality Act (CEQA), Public Resource Code section 21000 et seq. for operation of the City's WWTF. As a responsible agency under CEQA, the Central Valley Water Board determined that the project as approved would not have a significant effect on water quality.
99. As the lead agency for the purposes of CEQA (Public Resource Code section 21000 et seq.), on 18 September 2018, the City adopted a Mitigated Negative Declaration for construction and operation of the new pipeline to carry effluent to the Stone Ranch property and reuse of the combined effluent from the City and Leprino for irrigation on the existing farmland. The Mitigated Negative Declaration determined compliance with waste discharge requirements would ensure that the proposed project would not have a significant impact on water quality.

As discussed earlier (Finding 17), an EIR was prepared in 1993 for the operation and use of the tile drainage system and the evaporation basin at the site. Analysis of the combined discharge shows that it is of similar quality to existing irrigation sources and the reuse of the combined effluent in place of groundwater for irrigation of crops will not significantly change the existing use of the site. This Order implements measures necessary to mitigate any adverse impacts to the environment as a result of the discharge to less than significant levels.

CV-SALTS Reopener

100. The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. These programs, once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate. For nitrate, dischargers that are unable to comply with stringent nitrate requirements will be required to take on alternate compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrate. Dischargers could comply with the new nitrate program either individually or collectively with other dischargers. For salinity, dischargers that are unable to comply with stringent salinity requirements would instead need to meet performance-based requirements and participate in a basin-wide effort to develop a long-term salinity strategy for the Central Valley. This Order may be amended or modified to incorporate any newly-applicable requirements.
101. The stakeholder-led Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative has been coordinating efforts to implement new salt and nitrate management strategies. The Board expects dischargers that may be affected by new salt and nitrate management policies to coordinate with the CV-SALTS initiative.

Public Notice

102. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the conditions of discharge of this Order.

103. The Dischargers and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge and have been provided an opportunity to submit written comments and an opportunity for a public hearing.

104. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that pursuant to sections 13263 and 13267 of the Water Code, the City of Lemoore and Leprino Foods Company, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of waste to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.
3. Treatment system bypass or overflow of untreated wastes is prohibited, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (SPRRs), incorporated herein.
4. Discharge of wastewater in a manner or location other than that described herein or in the RWD is prohibited.
5. Discharge of toxic substances into the wastewater treatment systems for the City and Leprino such that biological treatment mechanisms are disrupted is prohibited.
6. Discharge of toxic substances into the evaporation basin at Stone Ranch is prohibited.
7. The discharge of agricultural drainage water to surface water or to surface water drainage courses is prohibited. Drainage water reuse for irrigation purposes through ancillary structures (ditches, sumps, and ponds contained within the LAA and associated with its agricultural operations) is not prohibited.
8. Tires, other materials, and artificial structures that could entrap young birds along any evaporation basin cell bank are prohibited.

B. Effluent Limitations

1. The discharge of combined effluent to Stone Ranch shall not exceed a monthly average flow of 5.0 million gallons per day (mgd). **[Monitored at EFF-003]**
2. The discharge of combined effluent to Stone Ranch shall not exceed the following limitations. **[Monitored at EFF-003]**

<u>Constituent</u>	<u>Units</u>	<u>Annual Average</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ₅ ¹	mg/L	---	40	80
TSS ²	mg/L	---	40	80
FDS ³	mg/L	1,400	---	---

¹ Five-day biochemical oxygen demand at 20°C.

² Total suspended solids

³ Fixed Dissolved Solids

3. Total coliform bacteria in the combined discharge shall not exceed **[Monitored at EFF-003]**:
 - i. 23 most probable number (MPN) per 100 mL, as a 7-day median; and
 - ii. 240 MPN/100 mL more than once in any 30-day period.

C. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of Groundwater Limitations set forth in Section D of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The Dischargers shall operate all treatment systems and equipment to optimize the quality of the discharge.
4. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
5. Public contact with combined effluent shall be precluded through such means as fences, signs, or acceptable alternatives.
6. 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.
7. As a means of discerning compliance with Discharge Specification C.6, the dissolved oxygen (DO) content in the upper one foot of any wastewater storage and/or disposal pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Dischargers shall report the findings to the Central Valley Water Board in

writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.

8. The Dischargers shall operate and maintain all wastewater treatment, storage, and disposal ponds including the Stone Ranch evaporation basin to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Dischargers 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.
9. 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.
10. On or about **1 August** of each year, available capacity shall at least equal the volume necessary to comply with Effluent Limitation B.1 and Discharge Specifications C.8 and C.9.
11. 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 Dischargers shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
12. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within the pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.
13. Weeds and aquatic plants shall be minimized through the control of water depth, harvesting, and/or herbicides used in an approved manner. Dead algae, vegetation, and debris shall not accumulate on the water surface. Prior to discharging to any basin, the Dischargers shall remove vegetation from the cell.

14. When filling a cell within the evaporation basin, the Dischargers shall employ all feasible measures to attain the required 2-foot minimum depth as quickly as feasible. If the drainage flows diminish and the cell cannot be maintained at a depth of two feet, then the cell will be pumped dry with portable pumps until increased drainage flows occur and additional storage is needed.
15. The Dischargers shall maintain an effective interceptor system to minimize lateral seepage from the evaporation basin.
16. Construction, modification, and maintenance of levees, and removal of vegetation from the evaporation basin, shall not take place during the nesting season without a survey of bird nests by a qualified wildlife biologist and implementation of mitigation measures as necessary. In event of emergency, the Dischargers shall complete levee maintenance immediately and notify the Central Valley Water Board and California Department of Fish and Wildlife (DFW) within 24 hours thereafter of the circumstances and action taken.
17. Should nests be identified below the high water level of an evaporation basin cell, water levels in that basin shall be managed to the extent practicable to minimize flooding of eggs.
18. If the geometric mean concentration of selenium in invertebrates in any evaporation basin cell exceeds 4 mg/kg in any one composite sampling event, the Dischargers shall conduct a hazing program that effectively keeps birds moving until the geometric mean concentration is less than 4 mg/kg. Hazing, if necessary, shall be conducted on a daily basis during the months of February through July for all cells where birds are present. Hazing shall consist of whatever is determined to be effective. If a nest is established to the point where it contains one egg or more, hazing shall be terminated in the proximity of the nest for the remainder of the nesting season.
19. Bird carcasses shall be burned or buried unless an unusual number (more than 15) is found. Upon finding an unusual number, the DFW shall be notified within 24 hours and a bird carcass shall, at the DFW's discretion, be held for diagnosis. A record of the number, date, and species of carcasses found and burned or buried shall be kept.
20. If a significant fish population develops within a basin cell, the Dischargers shall implement a fish control and removal program.

D. Groundwater Limitations

Release of waste constituents from any component of any treatment, storage, delivery system, or land application area associated with the discharge of combined effluent to Stone Ranch shall not cause groundwater concentrations to exceed the concentrations specified below or background groundwater quality, whichever is greater:

1. Nitrate as Nitrogen of 10 mg/L.
2. For constituents identified in Title 22, the MCLs quantified therein.

E. Land Application Area Specifications

For the purposes of this Order “land application areas” (LAA) refers to the discharge area on the Stone Ranch Property described in Finding 14. These Land Application Area Specifications will become effective upon initiating the discharge of combined effluent from the City of Lemoore and Leprino to the Stone Ranch Property.

1. The BOD loading to the LAAs calculated as a cycle average as determined by the method described in the attached Monitoring and Reporting Program, shall not exceed 100 lbs/ac/day. The cycle average BOD loading rate shall be calculated as determined by the method described in the attached MRP.
2. Land application of wastewater shall be managed to minimize erosion.
3. The LAA shall be inspected periodically to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Dischargers shall temporarily stop irrigation with combined effluent and implement corrective actions to ensure compliance with this Order.
4. Any runoff of tailwater shall be confined to the LAAs or evaporation basin and shall not enter any surface water drainage course or storm water drainage system that leaves the Stone Ranch property.
5. The Dischargers may not discharge combined effluent to the LAA during rainfall or when soils are saturated.
6. Crops shall be grown on the LAAs. Crops shall be selected based on nutrient uptake, consumptive use of water, irrigation requirements to maximize crop uptake of water and nutrients, and acceptable crops to receive disinfected secondary-23 recycled water.
7. Application of waste constituents to the LAAs shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutrient loading of the LAAs, including the contributions of organic and chemical fertilizers, solids removed from process water, and the combined effluent, shall not exceed the annual crop demand.
8. Hydraulic loading of combined effluent and supplemental irrigation water shall be managed to:
 - i. Provide water only when water is needed and in amounts consistent with crop needs;
 - ii. Maximize crop nutrient uptake;
 - iii. Maximize breakdown of organic waste constituents in the root zone; and
 - iv. Minimize the percolation of waste constituents below the root zone.

The Central Valley Water Board recognizes that some leaching of salts is necessary to manage salt in the root zone of the crops. Leaching shall be managed to minimize

degradation of groundwater and maintain compliance with the Groundwater Limitations in this Order and prevent pollution.

9. The Dischargers shall ensure that water, BOD, and nitrogen are applied and distributed uniformly across each LAA field. The Dischargers shall implement changes to the irrigation system and/or operation practices as needed to ensure compliance with this specification.
10. The LAA shall be managed to prevent breeding of mosquitos. In particular:
 - a. All applied irrigation water must infiltrate within 48 hours;
 - b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store wastewater.

F. Recycling Specifications

The following recycled water specifications apply to the reclamation of combined effluent (recycled water) to the LAA at Stone Ranch.

1. No physical connection shall exist between recycled water piping and any domestic or irrigation water supply well that does not have an air gap or reduced pressure principle device.
2. Notwithstanding the following 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.
3. Recycled water shall be at least disinfected secondary-23 recycled water as defined in Title 22, section 60301.225.
4. Recycled water shall be used in compliance with Title 22, section 60304.
5. The Dischargers shall maintain a 100-foot setback distance from all domestic supply wells.
6. The perimeter of the LAA shall be graded to prevent runoff onto adjacent properties not owned or controlled by the Dischargers and to prevent ponding along public roads or other public areas.
7. Public contact with recycled water shall be controlled using signs and/or other appropriate means. Signs of a size no less than four inches high by eight inches wide with proper wording (shown below) shall be placed at all areas of public access and around the perimeter of the LAA and conveyance structures to alert the public of the use of recycled water. All signs shall display an international recycled water symbol similar to that shown in **Attachment E** (incorporated herein), and present the following wording:

“RECYCLED WATER – DO NOT DRINK”
“AGUA DE DESPERDICIO RECLAMADA – POR FAVOR NO TOME”

G. Solids Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes from the City's domestic WWTF. Solid waste refers to screenings, solids, and semi-solids, generated during preliminary and advanced treatment from Leprino's WWTF. Biosolids refers to sludge that has been treated, tested, and shown to be capable of being beneficially used as a soil amendment pursuant to federal and state regulations.

1. Sludge and solid waste shall be removed from screens, sumps, and ponds as needed to ensure optimal plant operations.
2. Any drying, handling and storage of solids and/or sludge at the facilities shall be temporary and controlled and contained in a manner that minimizes leachate formation and precludes the development of odor nuisance conditions and infiltration of waste constituent into soils in a mass or concentration that will violate groundwater limitations of this Order.
3. Sludge, biosolids and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
4. Use and disposal of biosolids from the City's WWTF shall comply with self-implementing federal regulations of 40 Code of Federal Regulations part 503, which are subject to enforcement by the U.S. EPA.
5. Any proposed change in solids use or disposal shall be reported to the Executive Officer at least **90 days** in advance of the change.

H. Provisions

1. Except as otherwise provided herein, the Dischargers shall comply with all provisions in the SPRRS (incorporated herein).
2. The Dischargers shall comply with MRP R5-2019-0008, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. A copy of this Order, including its MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the facilities for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The City shall maintain an approved Title 22 Engineering Report with DDW consistent with approved recycled water uses.
5. The City shall provide certified WWTF operators in accordance with Title 23, division 3, chapter 26.

6. Operation of the evaporation basin shall not cause violation of the Migratory Bird Treaty Act.
7. Subject to prior notice, and contingent upon a written report of findings being submitted to the Central Valley Water Board, Standard Provision A.8 shall include employees of DFW, USFWS, and U.S. Geological Survey – Biological Resources Division to the extent necessary to monitor conditions at the evaporation basin.
8. The Dischargers shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Dischargers shall submit the specified documents 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 Dischargers will be in compliance. The Dischargers shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
9. The Dischargers 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 Dischargers 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 Dischargers only when the operation is necessary to achieve compliance with the conditions of this Order.
10. Per the SPRRs, the Dischargers shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
11. A discharger whose waste flows have been increasing, or is projected to increase, shall estimate when flows will reach the hydraulic and treatment capacity of its treatment, collection, and disposal facilities. The projections shall be made, based on the last three year's average dry weather flows, peak flows, and total annual flows as appropriate and be included as part of the annual report. When a projection shows that the capacity of any part of the system may be exceeded within four years, the Dischargers shall notify the Central Valley Water Board.
12. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Dischargers shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

13. In the event of any change in control or ownership of the City's WWTF, Leprino's processing facilities or wastewater treatment system, or Stone Ranch Property, the Dischargers 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.
14. To assume operation as a 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 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.
15. **At least 60 days prior** to initiating the discharge of combined effluent from the City of Lemoore and Leprino to the Stone Ranch Property, the Dischargers shall submit a formal notification to the Central Valley Water Board. The notification shall also include the request to rescind WDRs Order 98-229.
16. **By 6 months following submittal of the notification required by Provision H.15**, Leprino shall submit a Solids Management Plan. The Solids Management Plan shall provide procedures for testing, handling, storage, and disposal of accumulated solids within the Leprino Facilities and its solids lagoon. If intended for land disposal on the Stone Ranch Property, the Solids Management Plan shall provide a list of testing requirements and calculations for estimating organic and nutrient loading for solids and wastewater to ensure application at agronomic rates.
17. **By 6 months following submittal of the notification required by Provision H.15**, Leprino shall develop and submit a Financial Assurance and Closure Plan (Closure Plan) with a schedule for decommissioning the drainage system and closing the evaporation basin. The Closure Plan shall assure fiscal capability to properly close the basin and relocate any wastes disposed in violation to these requirements. The Closure Plan shall include proposed plans for disposal of sediments containing elevated levels of minerals and trace elements per the requirements of Title 27. An update of the Closure Plan shall be submitted annually as part of the Annual Monitoring Report due February 1st of each year.
18. **By 1 year following submittal of the notification required by Provision H.15**, the Dischargers shall submit a Wastewater and Nutrient Management Plan. The Plan shall specify management practices that will be implemented to ensure wastewater and the nutrients contained therein are applied evenly at agronomic rates and will not cause nuisance conditions or unreasonable degradation of underlying groundwater. The objective of the Wastewater and Nutrient Management Plan is to identify and utilize site specific data to demonstrate wastewater loading will occur at reasonable

agronomic rates that will preclude degradation of groundwater or adversely affect beneficial uses.

19. **By 1 year following submittal of the notification required by Provision H.15**, the Dischargers shall submit a Salinity Reduction Study Workplan. The Dischargers shall prepare and implement a Salinity Reduction Study Workplan (Workplan) to identify and address sources of salinity to and from the facilities. The Workplan shall at a minimum include the following:
- i. Data on current influent and effluent salinity concentrations;
 - ii. Identification of known salinity sources;
 - iii. Description of current plans to reduce/eliminate known salinity sources;
 - iv. Preliminary identification of other potential sources;
 - v. A proposed schedule for evaluating sources; and
 - vi. A proposed schedule for identifying and evaluating potential reduction, elimination, and prevention methods.

Implementation progress of the Workplan shall be reported each year in the Annual Monitoring Report required pursuant to MRP R5-2019-0008.

20. **By 1 year following submittal of the notification required by Provision H.15**, the Dischargers shall prepare and submit a Wildlife Protocol Monitoring Plan (Wildlife Protocol) with procedures and standards to be used when conducting wildlife monitoring of the evaporation basin as specified in MRP R5-2019-0008. The Wildlife Protocol must be consistent with the protocols established by DFW for wildlife monitoring and shall be submitted to both the Central Valley Water Board and DFW for approval.
21. **By 4 years following submittal of the notification required by Provision H.15**, the Dischargers shall submit a technical report to the Central Valley Water Board and DFW summarizing the results of the evaporation basin and wildlife monitoring and assess whether existing operations are sufficient to compensate for potential impacts on target species, or if additional mitigation measures are necessary. The report shall be prepared by a qualified wildlife biologist and be sufficiently comprehensive and statistically sound to determine whether complete mitigation has been and can continue to be achieved.
22. The Dischargers shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Dischargers shall proceed with all work required by the foregoing provisions by the due dates specified.
23. 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 work plans 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 Dischargers shall bear the professional's signature and stamp.

24. If the Central Valley Water Board determines that there is an increasing trend of selenium in the combined discharge or the evaporation basin that could pose a threat to wildlife, this Order may be reopened for consideration of additional mitigation measures for use of the evaporation basin.
25. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

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

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

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

I, PATRICK PULUPA, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 8 February 2019.

ORIGINAL SIGNED BY

PATRICK PULUPA, Executive Officer

Order Attachments:

Attachment A—Project Area Map

Attachment B—Facility Map

Attachment C—Process Flow Diagram

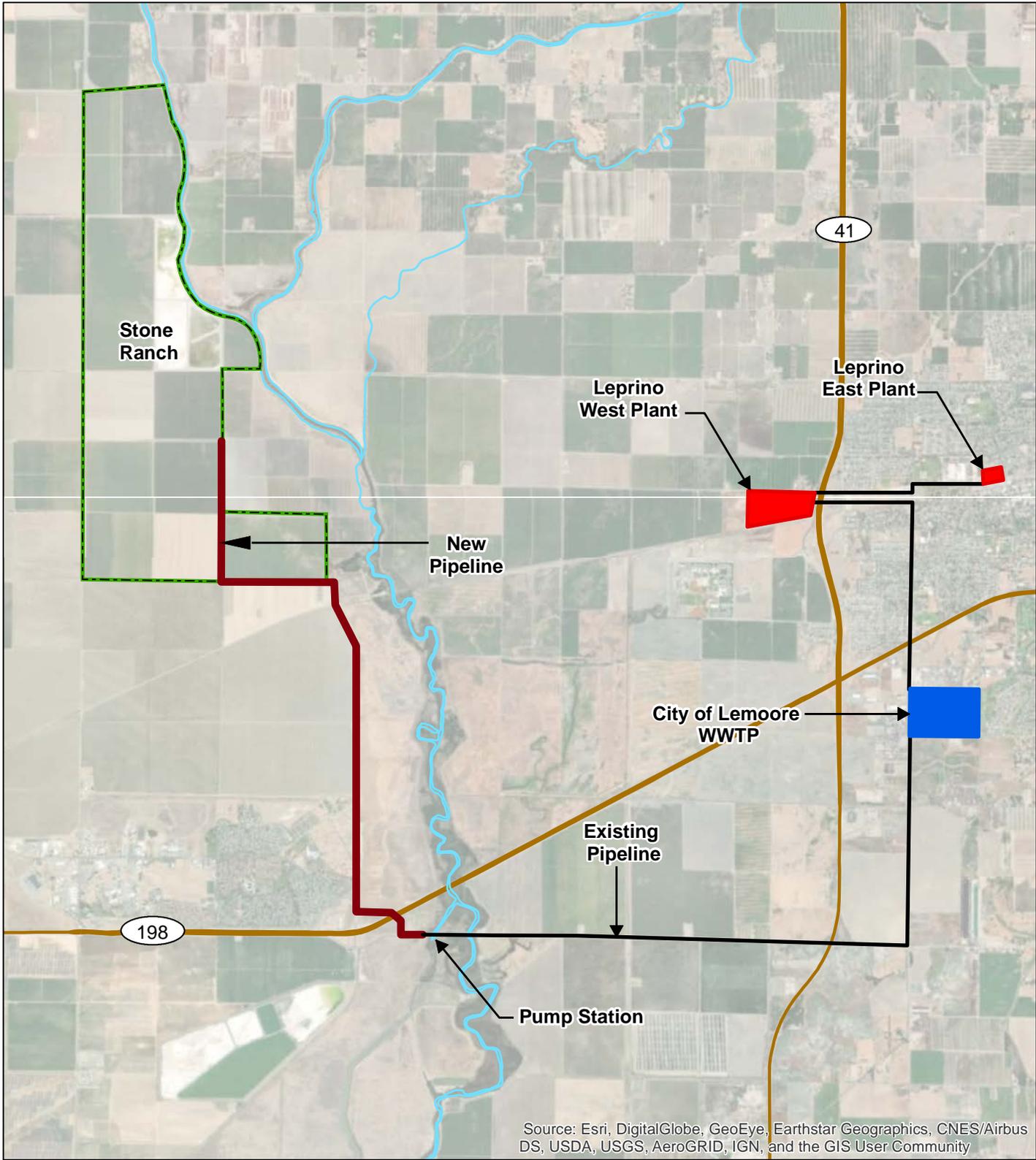
Attachment D—Drainage Collection System

Attachment E—Recycled Water Symbol

Monitoring and Reporting Program R5-2019-0008

Information Sheet

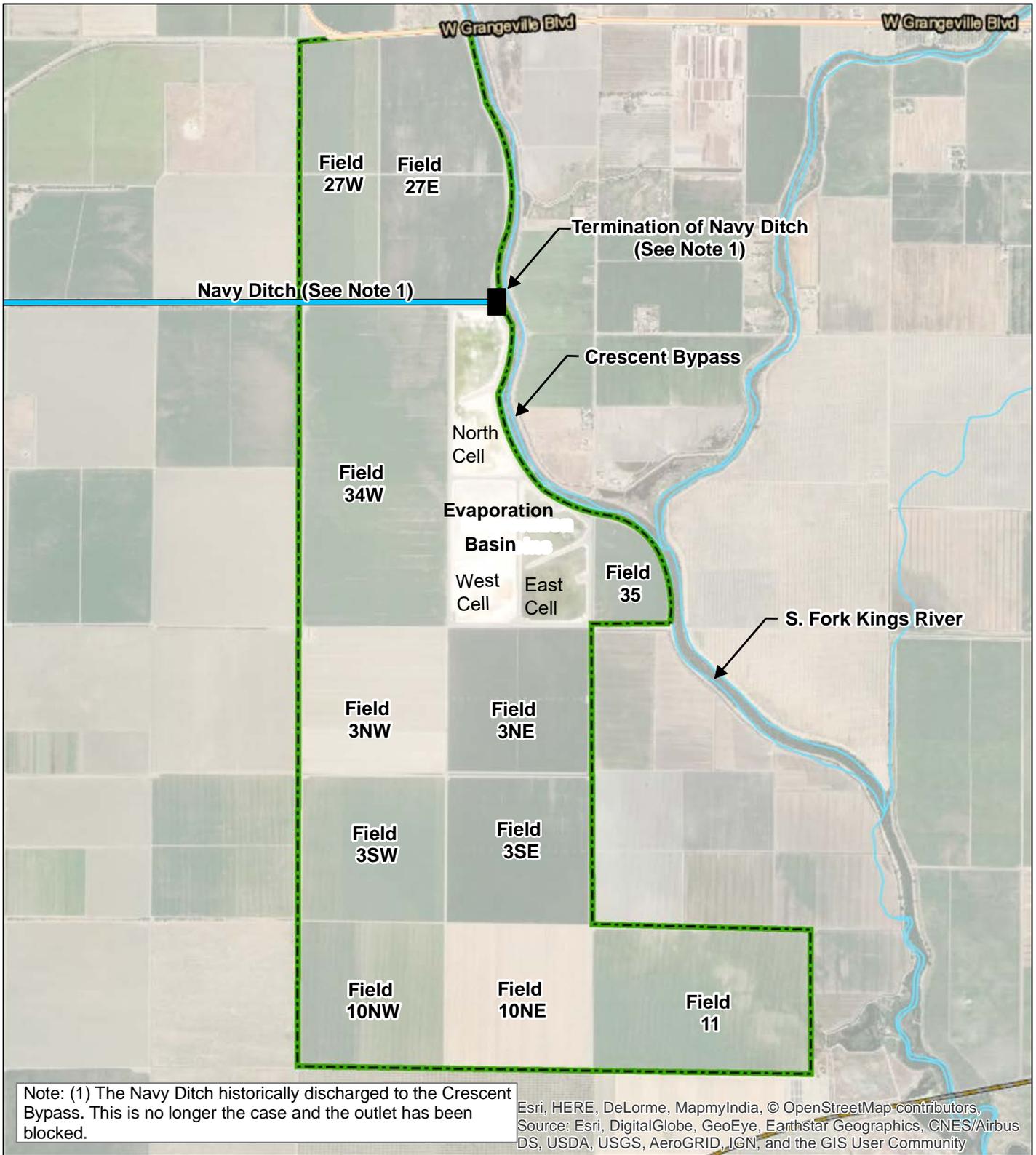
Standard Provisions and Reporting Requirements dated 1 March 1991



PROJECT AREA MAP

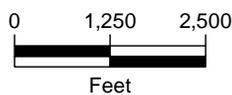
ORDER R5-2019-0008
 WASTE DISCHARGE REQUIREMENTS
 FOR
 CITY OF LEMOORE AND LEPRINO FOODS COMPANY
 STONE RANCH PROPERTY
 KINGS COUNTY

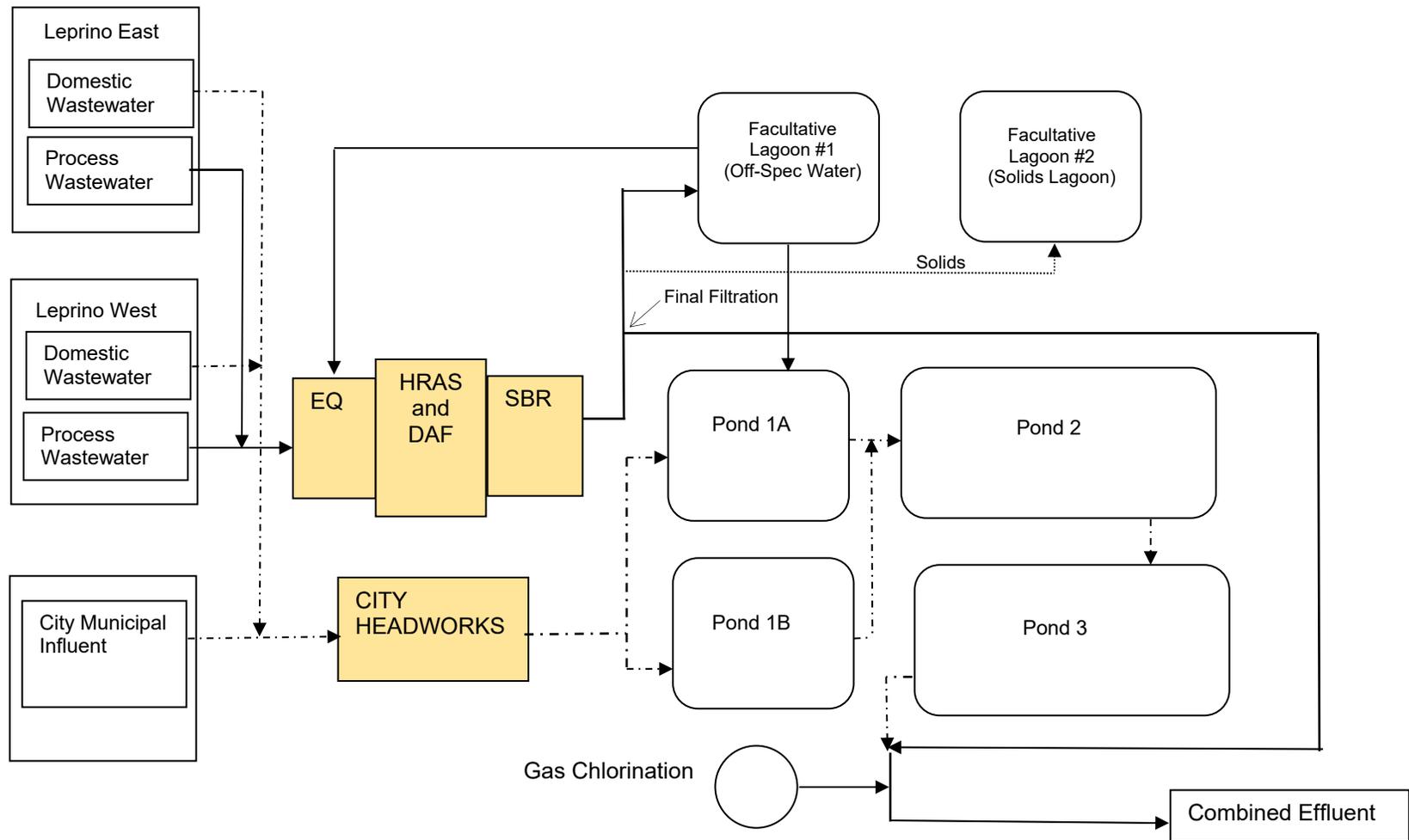




FACILITY MAP

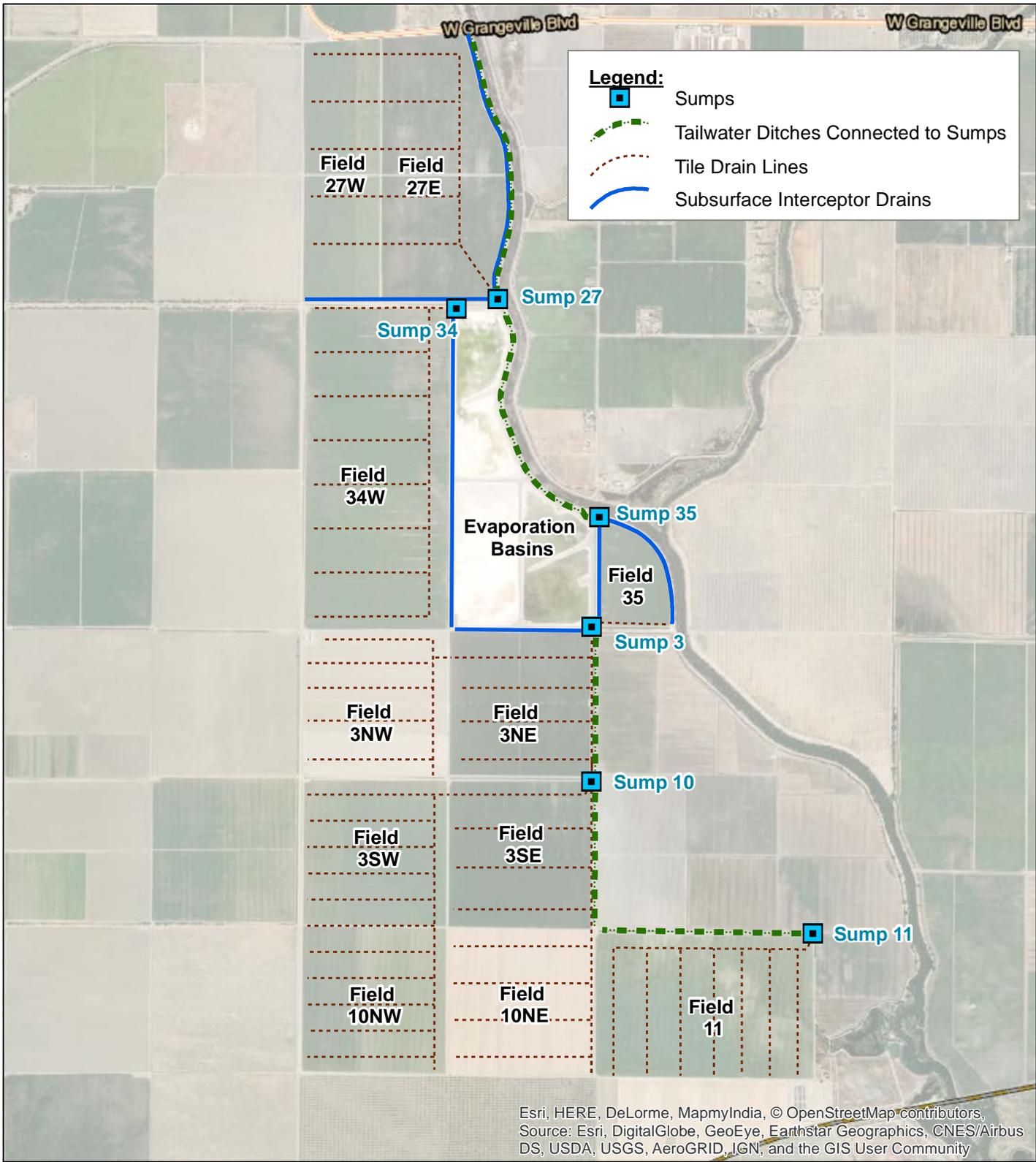
ORDER R5-2019-0008
 WASTE DISCHARGE REQUIREMENTS
 FOR
 CITY OF LEMOORE AND LEPRINO FOODS COMPANY
 STONE RANCH PROPERTY
 KINGS COUNTY





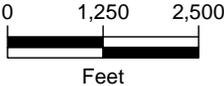
PROCESS FLOW DIAGRAM

ORDER R5-2019-0008
 WASTE DISCHARGE REQUIREMENTS
 FOR
 CITY OF LEMOORE AND LEPRINO FOODS COMPANY
 STONE RANCH PROPERTY
 KINGS COUNTY



DRAINAGE COLLECTION SYSTEM

ORDER R5-2019-0008
 WASTE DISCHARGE REQUIREMENTS
 FOR
 CITY OF LEMOORE AND LEPRINO FOODS COMPANY
 STONE RANCH PROPERTY
 KINGS COUNTY





RECYCLED WATER SYMBOL

ORDER R5-2019-0008
WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF LEMOORE AND LEPRINO FOODS COMPANY
STONE RANCH PROPERTY
KINGS COUNTY

ATTACHMENT E

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2019-0008
FOR
CITY OF LEMOORE AND LEPRINO FOODS COMPANY
STONE RANCH PROPERTY
KINGS COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code section 13267. The City of Lemoore (City) and Leprino Foods Company (Leprino) collectively referred to as Dischargers shall not implement any changes to this MRP unless and until the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopts, or the Executive Officer issues, a revised MRP.

Section 13267, subsection (b)(1) of the California Water Code states:

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

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

“(a)(1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267, failing or refusing to furnish a statement of compliance as required by subdivision (b) of Section 13399.2, or falsifying and information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).

. . .

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

The City and Leprino own and operate their respective facilities that are subject to the Waste Discharge Requirements (WDRs) cited herein, and the monitoring reports are necessary to determine compliance with the WDRs.

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

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

I. GENERAL MONITORING REQUIREMENTS

A. FLOW MONITORING

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

B. MONITORING AND SAMPLING LOCATIONS

Samples shall be obtained at the monitoring points specified in this MRP. The Central Valley Water Board Executive Officer shall approve any proposed changes to sampling locations prior to implementation of the change.

The Dischargers shall monitor the following locations at their respective wastewater treatment facilities and at Stone Ranch to demonstrate compliance with the requirements of this Order:

B.1 CITY OF LEMOORE WASTEWATER TREATMENT FACILITY

Monitoring Location Name	Monitoring Location Description
INF-001	Location where a representative sample of the influent to the City's Wastewater Treatment Facility can be obtained prior to treatment.
EFF-001	Location where a representative sample of the effluent from the City's WWTF can be obtained after treatment (excluding disinfection) but prior to comingling with Leprino's effluent.
SPL-001	Source Water Supply for the City and Leprino.
PND-002 and PND-003	The City's effluent storage ponds.
BIO-001	Sludge/biosolids from the City's WWTF.

B.2 LEPRINO WASTEWATER TREATMENT FACILITY

Monitoring Location Name	Monitoring Location Description
EFF-002	Location where a representative sample of the effluent from Leprino can be obtained after treatment (excluding disinfection) but prior to comingling with the City's effluent.
LG-01 and LG-02	Leprino's facultative lagoons.
BIO-002	Sludge/residual solids from Leprino's wastewater treatment system.

B.3 STONE RANCH

Monitoring Location Name	Monitoring Location Description
EFF-003	Location where a representative sample of the combined effluent from the City and Leprino can be obtained after disinfection but prior to discharge to the land application area (LAA or Stone Ranch).
IRRIGATION SUPPLY WELLS	Irrigation supply wells (includes Well 2, Well 6, Well 13, Well 14, Well 15, Well 16, Well 17, Well 18, Well 19, and any future supply wells added to the network).
LAA-001	Land application area at Stone Ranch where the combined effluent is applied.
GROUNDWATER	Groundwater monitoring (includes MW-1, and any additional monitoring wells installed at the site).
PIEZOMETERS	Piezometer monitoring shall include the piezometer arrays P1, P2, P3, and P4 set around the evaporation basin.

B.4 EVAPORATION BASIN

Monitoring Location Name	Monitoring Location Description
DRAINAGE SUMPS	Drainage collection sump monitoring (includes Sumps #3N, #3-10, #11, #27, #34, and #35).
EVB-North, EVB-East, and EVB-West	Evaporation basin monitoring (North cell, East cell, and West cell).
SEDIMENT	Evaporation basin sediment monitoring.
INV-North, INV East, and INV-West	Invertebrate monitoring (North cell, East cell, and West cell).
WILD	Wildlife monitoring.

C. SAMPLING AND SAMPLE ANALYSIS

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

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

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

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated at the frequency recommended by the manufacturer;

3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

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

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

Approved editions shall be those that are approved for use by the United States Environmental Protection Agency (EPA) or the State Water Resources Control Board (State Water Board), Division of Drinking Water's Laboratory Accreditation Program (ELAP). The Dischargers may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least 12 months of monitoring, the Dischargers may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency. This monitoring program shall remain in effect unless and until a revised MRP is issued.

II. SPECIFIC MONITORING REQUIREMENTS

B.1 CITY OF LEMOORE WASTEWATER TREATMENT FACILITY

a. City Influent Monitoring (INF-001)

Samples shall be representative of the volume and nature of the discharge. Time of collection of samples shall be recorded. At a minimum, the influent shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Flow	mgd	Meter ¹	Continuous
Electrical Conductivity	µmhos/cm	Grab	Monthly
BOD ₅	mg/L	24-Hour Composite	Monthly
Total Suspended Solids	mg/L	24-Hour Composite	Monthly
Total Kjeldahl Nitrogen	mg/L	24-Hour Composite	Quarterly
Nitrate as Nitrogen (NO ₃ -N)	mg/L	24-Hour Composite	Quarterly
Nitrite as Nitrogen (NO ₂ -N)	mg/L	24-Hour Composite	Quarterly
Ammonia as Nitrogen	mg/L	24-Hour Composite	Quarterly
Total Nitrogen	mg/L	24-Hour Composite	Quarterly

¹ For continuous analyzers, the Dischargers shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.

b. City Effluent Monitoring (EFF-001)

Samples shall be representative of the volume and nature of the discharge. Time of collection of samples shall be recorded. At a minimum, effluent shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Flow	mgd	Meter ¹	Continuous
pH	pH Units	Grab	Weekly
Electrical Conductivity	µmhos/cm	Grab	Weekly
Biochemical Oxygen Demand	mg/L	Grab	Weekly
Total Suspended Solids	mg/L	Grab	Weekly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly
Nitrate as Nitrogen (NO ₃ -N)	mg/L	Grab	Quarterly
Nitrite as Nitrogen (NO ₂ -N)	mg/L	Grab	Quarterly
Ammonia as Nitrogen	mg/L	Grab	Quarterly
Total Nitrogen	mg/L	Grab	Quarterly
Arsenic and Selenium	µg/L	Grab	Annually
Total Dissolved Solids	mg/L	Grab	Annually
General Minerals ²	mg/L	Grab	Annually

¹ For continuous analyzers, the Dischargers shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.

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

c. Source Water Monitoring (SPL-001)

Shall be representative of the source water supplied to the City and the Leprino Facilities. If the source water is from more than one source, the results shall be presented as a flow-weighted average of all sources. In addition, the City shall submit a copy of the most current Division of Drinking Water Consumer Confidence Report as part of the Annual Monitoring Report. At a minimum, source water shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Electrical Conductivity	µmhos/cm	Grab	Annually
Total Dissolved Solids	mg/L	Grab	Annually
Nitrate as Nitrogen (NO ₃ -N)	mg/L	Grab	1/Three Years ²
General Minerals ¹	mg/L	Grab	1/Three Years ²

¹ General minerals shall include, at a minimum, the following: boron, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfate, total alkalinity (including alkalinity series), hardness, and verification that the analysis is complete (i.e., cation/anion balance).

² Samples shall be collected once every three years starting in 2019.

d. City Pond Monitoring (PND-002 and PND-003)

The City's effluent storage ponds shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Dissolved Oxygen (DO)	mg/L	Grab ¹	Daily ²
Freeboard	Feet ³	Measurement	Weekly

¹ Samples shall be collected between 8:00 a.m. and 10:00 a.m. opposite the pond inlet at a depth of approximately one foot below the surface of the pond.

² If the DO is below 1.0 mg/L in any effluent pond for more than three consecutive sampling events, the Dischargers shall report the findings to the Central Valley Water Board in writing within 10 days with a specific plan to resolve the issue.

³ Freeboard shall be monitored to the nearest tenth of a foot.

The Dischargers shall inspect the condition of the effluent storage ponds weekly and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the storage pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be submitted along with the quarterly monitoring reports.

e. City Sludge/Biosolids Monitoring (BIO-001)

When sludge is removed from the treatment ponds, but prior to disposal, a composite sample of the sludge/biosolids shall be collected and analyzed for the following:

Arsenic	Cadmium	Copper
Lead	Mercury	Molybdenum
Nickel	Selenium	Zinc

Monitoring shall be conducted using the methods in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (SW-846) and updates thereto, as required in Title 40 of the Code of Federal Regulations (40 CFR), Part 503.8(b)(4). The Dischargers also needs to demonstrate that the facility where sludge is hauled to complies with 40 CFR, Part 503.

If intended for land application, the Dischargers shall demonstrate that treated sludge (i.e., biosolids) meets Class A or Class B pathogens reduction levels by one of the methods listed in 40 CFR, Part 503.32. The Dischargers shall track and keep records of the operational parameters used to achieve Vector Attraction Reduction requirements in 40 CFR, Part 503.33(b).

B.2 LEPRINO WASTEWATER TREATMENT FACILITY

a. Leprino Effluent Monitoring (EFF-002)

Samples shall be representative of the volume and nature of the discharge. Time of collection of samples shall be recorded. At a minimum, effluent shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Flow	mgd	Meter ¹	Continuous
pH	pH Units	Grab	Weekly
Electrical Conductivity	µmhos/cm	Grab	Weekly
BOD ₅	mg/L	24-Hour Composite	Monthly
Total Suspended Solids	mg/L	24-Hour Composite	Monthly
Total Kjeldahl Nitrogen	mg/L	24-Hour Composite	Quarterly
Nitrate as Nitrogen (NO ₃ -N)	mg/L	24-Hour Composite	Quarterly
Nitrite as Nitrogen (NO ₂ -N)	mg/L	24-Hour Composite	Quarterly
Ammonia as Nitrogen	mg/L	24-Hour Composite	Quarterly
Total Nitrogen	mg/L	24-Hour Composite	Quarterly
Total Dissolved Solids	mg/L	24-Hour Composite	Quarterly
Fixed Dissolved Solids	mg/L	24-Hour Composite	Quarterly
Arsenic and Selenium	µg/L	24-Hour Composite	Annually
General Minerals ²	mg/L	24-Hour Composite	Annually

¹ For continuous analyzers, the Dischargers shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.

² General minerals shall include, at a minimum, the following: boron, calcium, chloride, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

b. Leprino Lagoon Monitoring (LG-01 and LG-02)

Leprino’s facultative lagoons, when in use, shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Dissolved Oxygen (DO)	mg/L	Grab ¹	Weekly
Freeboard	Feet ³	Measurement	Weekly

¹ Samples shall be collected between 8:00 a.m. and 10:00 a.m. opposite the pond inlet at a depth of approximately one foot below the surface of the pond.

² Freeboard shall be monitored to the nearest tenth of a foot.

The Dischargers shall inspect the condition of the facultative lagoons weekly when in use and record visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether grease, dead algae, vegetation, scum, or debris are accumulating on the storage pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (e.g., dark green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log shall be submitted along with the quarterly monitoring reports.

c. Leprino Solids Monitoring (BIO-002)

Leprino shall monitor the sludge depth in its facultative lagoons on an annual basis and include the results in the Annual Monitoring Report. If used for land application, the Dischargers shall collect composite samples of the solids removed from the wastewater treatment system and the facultative lagoons for analysis prior to disposal. At a minimum, composite samples shall be analyzed for the following:

Constituent/Parameter	Units	Monitoring Frequency
Total Solids	%	Prior to disposal
Total Nitrogen	mg/kg	Prior to disposal
Total Phosphorus	mg/kg	Prior to disposal
Total Potassium	mg/kg	Prior to disposal
Metals ¹	mg/kg	Prior to disposal

¹ Metals analysis shall include the following: arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc.

The sampling results shall be submitted to the Central Valley Water Board along with proposed method of disposal for Executive Officer approval. Additional analysis may be required depending on the final disposal site. Sampling records should be retained for a minimum of five years. A log shall be kept of the quantities generated, and handling and disposal activities. A summary of the log notations shall be included as part of the annual monitoring report.

B.3 STONE RANCH DISCHARGE

a. Combined Effluent Monitoring (EFF-003)

Monitoring of the combined effluent from the City and Leprino shall be collected at EFF-003, on days when the combined effluent is discharged to the land application area (or LAA). Samples shall be representative of the volume and nature of the discharge. Time of collection of samples shall be recorded. At a minimum, the combined effluent shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Flow	mgd	Calculated ¹	Continuous
pH	pH Units	Grab	Weekly
Electrical Conductivity	µmhos/cm	Grab	Weekly
Total Coliform Organisms	MPN/100 ml	Grab	Daily
BOD ₅	mg/L	24-Hour Composite	Monthly
Total Suspended Solids	mg/L	24-Hour Composite	Monthly

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Total Kjeldahl Nitrogen	mg/L	24-Hour Composite	Monthly
Nitrate as Nitrogen (NO ₃ -N)	mg/L	24-Hour Composite	Monthly
Nitrite as Nitrogen	mg/L	24-Hour Composite	Monthly
Ammonia as Nitrogen	mg/L	24-Hour Composite	Monthly
Total Nitrogen	mg/L	24-Hour Composite	Monthly
Total Dissolved Solids	mg/L	24-Hour Composite	Monthly
Fixed Dissolved Solids	mg/L	24-Hour Composite	Monthly
Arsenic and Selenium	µg/L	24-Hour Composite	Quarterly
General Minerals ²	mg/L	24-Hour Composite	Quarterly
SAR ³	mg/L	Calculated	Quarterly

¹ If representative of actual flows, the combined effluent can be calculated as the sum of the effluent flows from the City and Leprino measured at EFF-001 and EFF-002.

² General minerals shall include, at a minimum, the following: boron, calcium, chloride, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

³ Sodium adsorption ratio (SAR) = $\frac{Na}{\sqrt{\frac{Ca+Mg}{2}}}$, where Na, Ca, and Mg are in meq/L.

b. Irrigation Supply Well Monitoring

The Stone Ranch property has nine irrigation supply wells (Well 2, Well 6, Well 13, Well 14, Well 15, Well 16, Well 17, Well 18, Well 19), which provide supplemental irrigation water for the property. If supplemental water is provided from more than one well, the results for EC and TDS shall be presented as a flow-weighted average of all sources. At a minimum, supplemental irrigation water shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Flow	gallons	Meter	Daily
Electrical Conductivity	µmhos/cm	Grab	Annually
Total Dissolved Solids	mg/L	Grab	Annually
Arsenic and Selenium ¹	µg/L	Grab	Annually
General Minerals ^{1,2}	mg/L	Grab	Annually

¹ Samples for metals shall be filtered prior to preservation, digestion, and analysis using a 0.45-micron filter.

² General minerals shall include, at a minimum, the following: boron, calcium, chloride, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, total alkalinity (including alkalinity series), hardness, and verification that the analysis is complete (i.e., cation/anion balance).

c. Land Application Area Monitoring (LAA-001)

The Dischargers shall perform the following routine monitoring and loading calculations for each discrete irrigation area within the LAA each day when water is applied. The data shall be presented in both graphical (map) and tabular format and shall include at least the following:

Constituent/Parameter	Units	Sample Type	Frequency
Application Area/Field	Acres	Calculated	Daily ¹
Wastewater Flow	Gallons	Metered	Daily ¹
Wastewater Loading	Inches/day	Calculated	Daily ¹
Supplemental Irrigation Flow	Gallons	Metered	Daily ¹
Supplemental Irrigation Loading	Inches/day	Calculated	Daily ¹
Precipitation	Inches	Rain gage ²	Daily ¹
Total Hydraulic Loading ³	Inches/(acre-month)	Calculated	Monthly
<u>BOD₅ Loading⁴</u>			
Day of Application	lbs/acre/day	Calculated	Daily ¹
Cycle Average ⁵	lbs/acre/day	Calculated	Cycle
<u>Nitrogen Loading⁴</u>			
From Wastewater	lbs/acre/yr	Calculated	Annually
From Fertilizers and Sludge/Solids	lbs/acre/yr	Calculated	Annually
From Supplemental Irrigation	lbs/acre/yr	Calculated	Annually
<u>Salt Loading⁴</u>			
From Wastewater	lbs/acre/yr	Calculated	Annually
From Supplemental Irrigation	lbs/acre/yr	Calculated	Annually

¹ When wastewater is applied to the LAA.

² National Weather Service or CIMIS data from the nearest weather station is acceptable.

³ Combined loading from wastewater, irrigation water, and precipitation.

⁴ The BOD₅, salt, and nitrogen loading rates shall be calculated as specified in Section III of this MRP.

⁵ A cycle average is calculated by taking the pounds of BOD₅ applied to the LAA in a given period, divided by the sum of the total days wastewater was applied plus the number of days of rest (no application of wastewater). See Section III of this MRP for the formula to calculate the cycle average loading rate.

In addition, the Dischargers shall inspect the LAA at least once a week. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in the log book and included as part of the quarterly monitoring report.

d. Groundwater Monitoring

Groundwater monitoring will consist of periodic sampling of the existing monitoring well MW-1, and any additional monitoring wells installed at the site. Prior to purging or sampling, depth to groundwater shall be measured in each well to the nearest 0.01 feet. At a minimum, groundwater shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Depth to Groundwater ¹	0.01 feet	Measurement	Quarterly
Groundwater Elevation ¹	0.01 feet	Calculation	Quarterly
pH	pH Units	Grab	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly
Nitrate as Nitrogen (NO ₃ -N)	mg/L	Grab	Quarterly
Nitrite as Nitrogen (NO ₂ -N)	mg/L	Grab	Quarterly
Ammonia as Nitrogen	mg/L	Grab	Quarterly
Total Nitrogen	mg/L	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Arsenic and Selenium ²	µg/L	Grab	Quarterly
General Minerals ^{2,3}	mg/L	Grab	Quarterly

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

² Samples for metals shall be filtered prior to preservation, digestion, and analysis using a 0.45-micron filter.

³ General Minerals shall include, at a minimum, the following: boron, calcium, chloride, iron, manganese, magnesium, potassium, sodium, sulfate, total alkalinity (including alkalinity series), hardness, and verification that all analysis are complete (i.e., cation/anion balance).

e. Piezometer Monitoring

All piezometers in the piezometer arrays P1, P2, P3, and P4 set around the evaporation basin shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Depth to Groundwater ¹	0.01 feet	Measurement	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Quarterly

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

B.4 EVAPORATION BASIN DISCHARGE

The Dischargers shall monitor the Evaporation Basin for the parameters specified below. The results of the Evaporation Basin monitoring shall be tabulated and submitted as an Annual Monitoring Report to both the Central Valley Water Board and California Department of Fish and Wildlife (DFW).

a. Drainage Collection Sump Monitoring

There are six drainage collection sumps (#3N, #3-10, #11, #27, #34, and #35) at Stone Ranch, which discharge collected groundwater and percolate from the tile drains and tail water and interceptor ditches to the Evaporation Basin. At a minimum, water collected in the drainage collection sumps shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Flow	gpd	Meter ¹	Daily
Electrical Conductivity	µmhos/cm	Grab	Quarterly/Annually ²
Total Dissolved Solids	mg/L	Grab	Quarterly/Annually ²
Selenium	µg/L	Grab	Quarterly/Annually ²
Arsenic, Boron, and Molybdenum	µg/L	Grab	Quarterly/Annually ²
General Minerals ³	mg/L	Grab	Annually

¹ For continuous analyzers, the Dischargers shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation.

² Upon initiating the discharge of combined effluent to Stone Ranch, the drainage collection sumps shall be monitored quarterly for one year (4 quarters). If, at the end of at least four quarterly sampling events, the data shows minimal to no change in the constituent concentrations, the Dischargers may submit a written request, for Executive Officer approval, to reduce the monitoring frequency for these constituents from quarterly to annually.

³ General Minerals shall include, at a minimum, the following: calcium, chloride, iron, manganese, magnesium, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

b. Evaporation Basin Monitoring (EVB-North, EVB-East, and EVB-West)

There are three cells within the Evaporation Basin at Stone Ranch (North cell, East cell, and West cell). If drainage water is discharged to a cell during the specified monitoring period (e.g., month, quarter, year, etc.), that cell shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Mean Water Depth	Feet ¹	Measurement	Monthly
Electrical Conductivity	µmhos/cm	Grab	Monthly
Selenium	µg/L	Grab	Quarterly
Arsenic, Boron, and Molybdenum	µg/L	Grab	Quarterly
General Minerals ²	mg/L	Grab	Annually

¹ Measured to the nearest tenth of a foot.

² General Minerals shall include, at a minimum, the following: calcium, chloride, iron, manganese, magnesium, potassium, sodium, sulfate, total alkalinity (including alkalinity series), and hardness.

c. Evaporation Basin Sediment Monitoring

Composite samples consisting of at least three discrete samples shall be collected from the upper two to three inches of sediment from the bottom of each cell within the Evaporation Basin to monitor any change in the character of the bottom sediments. Sediments from the Evaporation Basin shall be monitored as specified below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Selenium	mg/kg	Composite	Annually ¹
Arsenic	mg/kg	Composite	Annually ¹
Boron	mg/kg	Composite	Annually ¹
Molybdenum	mg/kg	Composite	Annually ¹

¹ Samples shall be collected near the end of the third quarter.

d. Invertebrate Monitoring (INV-North, INV-East, INV-West)

The Dischargers shall analyze aquatic invertebrates for selenium levels within each of the Evaporation Basin cells. Invertebrate sampling shall be conducted for each cell on a monthly basis, the samples shall be stored appropriately and a 4-month composite sent to the lab for analysis. Each composite, consisting of at least five grams (approximately six discrete samples), shall be representative of the aquatic invertebrates present in each cell, and monitored for the constituents below:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Selenium ¹	mg/kg	4-month Composite ²	Monthly

¹ Results shall be presented as the mean concentration of all invertebrates in the sample for the quarter.

² Composites shall represent; (a) the Breeding Period (April, May, June, and July), (b) the Migration Period (August, September, October, and November), and (c) the Wintering Period (December, January, February, and March).

e. Wildlife Monitoring

Wildlife monitoring shall be conducted in accordance with the protocols established between the Dischargers and DFW as required by Provision H.19 of WDRs R5-2019-0008 and shall be submitted as part of the annual monitoring report to both the Central Valley Water Board and DFW. Wildlife monitoring of the evaporation basin will be conducted by or under the direct supervision of a qualified wildlife biologist, and shall include the parameters listed below:

- Monthly bird counts from December through July;
- Semi-monthly breeding bird nest surveys from April through July; and
- Counts of nests and nest fates by species.

In addition, the Dischargers shall inspect the evaporation basin weekly for dead birds. Inspections shall be increased to daily at any cell where the water depth is less than two feet or when a botulism or fowl cholera outbreak is occurring in the area, as confirmed by DFW. The Discharges shall consult with DFW on the best management approach for disposal.

III. REPORTING REQUIREMENTS

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
 Region 5 – Fresno Office
 1685 “E” St.
 Fresno, California 93706

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

Program: Non-15,
WDID: 5D160104001,
Facility: Stone Ranch Property
Order: R5-2019-0008
County: Kings
Place ID: 223055

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

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

Laboratory analysis reports do not need to be included in the monitoring reports; however, all laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3. For a discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

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

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

A. Quarterly Monitoring Reports

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

1. Results of **Influent, Effluent, Source Water, Pond, and Sludge/Biosolids Monitoring** for the City of Lemoore Wastewater Treatment Facility specified in Section II. B.1a through B.1e.
2. Results of the **Effluent, Lagoon, and Solids Monitoring** for Leprino’s Wastewater Treatment Facility specified in Section II. B.2a through B.2c.
3. Results of the **Combined Effluent Monitoring and Irrigation Supply Well Monitoring** for the Stone Ranch Discharge (or LAA) specified in Section II.B.3a through B.3b, including;
 - a. Calculation of the maximum daily flow, monthly average flow, and cumulative annual flow for each month of the quarter;
 - b. Calculation of the monthly average concentration of biochemical oxygen demand (BOD), fixed dissolved solids (FDS), and total nitrogen of the combined effluent for each month of the quarter;
 - c. Calculation of the flow-weighted average EC and total dissolved solids (TDS) of supplemental irrigation water for the quarter. Results must include supporting calculations;
 - d. A comparison of the combined effluent monitoring data with flow and effluent limitations and an explanation for any violations of those limitations.
4. Results of **Land Application Area Monitoring** specified in Section II. B.3c., including:
 - a. A summary of the inspection activities conducted for the LAA;
 - b. Calculated daily BOD₅ Loading rate for the LAA;
 - i. The mass of BOD₅ applied to each discrete field in the LAA on a daily basis shall be calculated using the following formula:

$$M = \frac{8.345(CV)}{A}$$

Where: M = Mass of BOD₅ applied to a LAA in lbs/ac/day
 C = Concentration of BOD₅ in mg/L based on the most recent monitoring result collected
 V = Volume of wastewater applied to discrete LAA fields in millions of gallons per day
 A = Area of the LAA irrigated in acres
8.345 = Unit conversion factor.

- c. Calculated cycle average BOD₅ loading rate for the LAA.
 - i. The mass of BOD₅ applied to discrete fields in the LAA on a cycle average basis shall be calculated using the following formula:

$$M = \frac{8.345(CV)}{AT}$$

Where: M = Mass of BOD₅ applied to an LAA in lbs/ac/day
 C = Concentration of BOD₅ in mg/L based on the three most recent monitoring results
 V = Total volume of wastewater applied to discrete LAA fields during the irrigation cycle,

		in millions of gallons
A	=	Area of the LAA irrigated in acres
T	=	Irrigation cycle length in days (from the first day water was applied to the last day of the drying time)
8.345	=	Unit conversion factor.

5. Results of **Groundwater/Piezometer Monitoring**, as specified in Section II. B.3d., including:
 - a. A table presenting the results of depth-to-water and groundwater elevation measurements, and sampling for the quarter.
 - b. A field log for each well documenting depth to groundwater; method of purging; parameters measured before, during, and after purging; sample preparation (e.g., filtering); and sample preservation.
 - c. A scaled map showing relevant structures fields, and features, the locations of monitoring wells, surface waters.

B. Annual Monitoring Reports

An Annual Report shall be submitted by **1st February of each year**, and shall include the following:

1. Names, title, and certificate grade (if required) and general responsibilities of persons operating and maintaining the wastewater treatment facilities and LAA.
2. Names and telephone numbers of persons to contact regarding the facilities for emergency and routine situations.
3. Monitoring equipment and calibration records, as described in Standard Provision C.4.
4. A discussion and summary of the compliance record for the reporting period. If violations have occurred, the report shall also discuss corrective actions taken and planned to bring the discharge into compliance.
5. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.
6. A statement of when the wastewater treatment system Operation and Maintenance Manual was last reviewed for adequacy and a description of any changes made during the calendar year.
7. Total annual effluent flow and average monthly flows for the City of Lemoore, Leprino, and the combined discharge for each month of the year.
8. A table summarizing the results of all influent and effluent monitoring for the City of Lemoore, Leprino, and the combined discharge for year.
9. Results of sludge depth monitoring of the aerated ponds and facultative lagoons.
10. A summary of information on the disposal of sludge and/or solid waste during the calendar year.

11. For the LAA, a chronological log of dates for fertilizer, sludge and/or solids applications. Nitrogen and salt loading calculations shall be included.

12. Calculated flow-weighted annual average FDS/TDS concentration for the LAA.

a. The flow-weighted annual average FDS/TDS concentrations shall be calculated using the following formula:

$$C_a = \frac{\sum_1^{12} [(C_{Pi} \times V_{Pi}) + (C_{Si} \times V_{Si})]}{\sum_1^{12} (V_{Pi} + V_{Si})}$$

Where: C_a = Flow-weighted average annual FDS concentration in mg/L
 i = The number of the month (e.g., January = 1, February = 2, etc.)
 C_{Pi} = Monthly average combined discharge FDS concentration for calendar month i in mg/L
 C_{Si} = Monthly average supplemental irrigation water TDS concentration for calendar month i in mg/L (considering each supplemental source separately)
 V_{Pi} = Volume of combined effluent applied to discrete LAA fields during calendar month i in million gallons
 V_{Si} = Volume of supplemental irrigation water applied to discrete LAA fields during calendar month i in million gallons (considering each supplemental source separately)

12. Calculated total nitrogen loading rate for each field in the LAA for each month and the total annual load.

a. The mass of total nitrogen applied to each discrete field in the LAA on a monthly and annual basis shall be calculated using the following formula and compared to published crop demand for the crops actually grown:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x)}{A}$$

Where: M = Mass of nitrogen applied to LAA in lbs/ac/yr
 C_i = Monthly average concentration of total nitrogen for month i in mg/L
 V_i = Volume of combined effluent applied to discrete LAA fields during calendar month i in million gallons
 A = Area of the field irrigated in acres
 i = The number of the month (e.g., January = 1, February = 2, etc.)
 M_x = Nitrogen mass from other sources (e.g., fertilizer, sludge/solids, and compost) in pounds
 8.345 = Unit conversion factor

13. The results of the Evaporation Basin monitoring including **Drainage Sumps, Basin Cells, Basin Sediment, Invertebrate, and Wildlife Monitoring** as specified in Section II. B.4a through B.4e. The results of the monitoring data shall be tabulated and submitted to both the Central Valley Water Board and DFW. Reports submitted to DFW shall be mailed to the California Department of Fish and Wildlife at 1234 E. Shaw Avenue, Fresno, CA 93710.

14. Update of the Financial Assurance and Closure Plan required by Provision H.16 of WDRs R5-2019-0008.
15. Update on implementation of the Salinity Reduction Study Workplan.
16. A discussion of any data gaps and potential deficiencies or redundancies in the monitoring system or reporting program.

The Dischargers shall implement the above monitoring program upon initiating discharge of the combined effluent to the Stone Ranch Property.

I, PATRICK PULUPA, Executive Officer, do hereby certify the forgoing is a full, true and correct copy of the Monitoring and Reporting Program issued by the California Regional Water Quality Control Board, Central Valley Region, on 8 February 2019.

ORIGINAL SIGNED BY

PATRICK PULUPA, Executive Officer

GLOSSARY

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

WASTE DISCHARGE REQUIREMENTS ORDER R5-2019-0008
CITY OF LEMOORE AND LEPRINO FOODS COMPANY
STONE RANCH PROPERTY
KINGS COUNTY

INFORMATION SHEET

Background

The City of Lemoore (City) provides sanitary wastewater treatment for its 26,000 residents at its wastewater treatment facility (WWTF). Waste discharge requirements (WDRs) Order 96-050 authorizes the discharge of secondary disinfected effluent from the City's WWTF to the head of the Westlake Canal for reuse on up to 50,000 acres of farmland owned by Westlake Farms, Inc. (Westlake). Leprino Foods Company (Leprino) historically relied on the City's WWTF to treat process wastewater from its cheese processing facilities. However, in 2002, Leprino completed construction on its own treatment system to treat its process wastewater as proposed in a 2001 Report of Waste Discharge (RWD). After treatment, Leprino's process wastewater is combined with the City's effluent before being discharged to the Westlake Canal. A Monitoring and Reporting Program (MRP) R5-2003-0807 was issued 25 February 2003 to the City and Leprino for the described discharge.

Historically, Westlake received the combined effluent under an agreement with the City dated 8 January 1996 and recycled the wastewater by using it to irrigate fodder and fiber crops. In early 2017, Westlake indicated that it would no longer accept the combined effluent due to elevated levels of salinity in the discharge. In 2018, Leprino signed an agreement with Sandridge Partners, LP to discharge the combined effluent to land owned by Sandridge Partners just south of Westlake Farms, in accordance with a 27 March 2018 Time Schedule Order (TSO) issued by the Central Valley Water Board. The TSO requires the City and Leprino to come into compliance with Order 96-050 or submit a RWD for an alternate location. Because there is uncertainty as to how long this arrangement will last, Leprino has arranged to buy approximately 2,200 acres of farmland four miles west of Lemoore known as Stone Ranch.

On 8 June 2018, Leprino and the City submitted a RWD to discharge the combined effluent to Stone Ranch. The RWD proposes to discharge up to 5.0 million gallons per day (mgd) (monthly average) of the combined effluent for reuse as irrigation water on approximately 1,900 acres of farmland at Stone Ranch. On 27 September 2018, the State Water Resources Control Board, Division of Drinking Water approved the Title 22 Engineering Report of reuse of disinfected secondary-23 wastewater for irrigation of fodder crops at Stone Ranch.

Wastewater Generation and Disposal

The City's WWTF treatment process consists of two clay-lined aerated lagoons (Pond 1A and Pond 1B) and two partially aerated effluent storage ponds (Pond 2 and Pond 3).

Process wastewater from Leprino's two facilities is combined in equalization tanks and conveyed through the Leprino treatment facility adjacent to the City's WWTF. The Leprino treatment system utilizes two High-Rate Activated Sludge (HARS) reactors, two Dissolved Air Flotation (DAF) units, and three Sequencing Batch Reactors (SBRs). The HRAS system is used to remove 75% or more of soluble chemical oxygen demand. The DAF units act as clarifiers to remove activated sludge from the effluent stream to pump it back into the HRAS reactors. The SBRs are used to remove additional BOD, and for nitrification and denitrification. The wastewater then goes through final filtration before it is discharged to an existing pipeline where it is (a) combined with the City's treated sanitary effluent and (b) disinfected using gas chlorination. Leprino's treatment system also includes two lined facultative lagoons used for off-spec wastewater and wasted solids.

A wastewater treatment flow schematic showing wastewater flows from the City and Leprino is included in Attachment C of the Order. Once it reaches Stone Ranch, the combined effluent will be discharged into the irrigation canal system and blended with existing irrigation water before being applied to crops.

Average wastewater quality for the City, Leprino, and the combined effluent from January 2013 through January 2018 is presented in Table 1 below:

TABLE 1. Average Wastewater Quality

<u>Constituent</u>	<u>Units</u>	<u>City of Lemoore¹</u>	<u>Leprino¹</u>	<u>Combined Effluent</u>
Biochemical Oxygen Demand	mg/L	33.5	10	12.7 ¹
Total Suspended Solids	mg/L	43.5	15	22 ¹
Electrical Conductivity	µmho/cm	1,168	2,657	2,141 ¹
Nitrate as Nitrogen	mg/L	---	3.8	3.2 ²
Ammonia as Nitrogen	mg/L	---	0.8	7.8 ²
Total Kjeldahl Nitrogen	mg/L	---	2.7	13.6 ²
Total Nitrogen	mg/L	---	6.5	16.8 ²
Total Dissolved Solids	mg/L	---	1,561	1,405 ³
Fixed Dissolved Solids	mg/L	---	1,331 ³	1,093 ³
Sodium	mg/L	---	384	318 ¹
Calcium	mg/L	---	83	56 ¹
Chloride	mg/L	---	396	353 ²
Sulfate	mg/L	---	21	14.5 ²
Boron	mg/L	---	0.37	0.56 ²
Arsenic	µg/L	---	---	4.03 ⁴
Selenium	µg/L	---	---	2.02 ⁴

1. Average based on monthly data collected from January 2013 through January 2018.

2. Average based on only three samples collected in March 2018.

3. Average based on only four samples collected between January and March 2018.

4. Average based on three samples collected in March 2018, one in September 2018, and two in October 2018.

Based on Stone Ranch irrigation well sampling in November 2017, irrigation supplies at Stone Ranch are of similar quality to the combined effluent (Table 13).

Stone Ranch Evaporation Basin

A subsurface drainage system consisting of tile drains, collection sumps, and an evaporation basin were installed at Stone Ranch in 1984 due to shallow groundwater in the area. Discharge of tile drainage water to the evaporation basin is currently regulated by WDRs Order 98-229 issued to the Stone Land Company, Inc. on 11 December 1998. An Environmental Impact Report (EIR) was prepared in 1993 for construction and operation of the evaporation basin. The EIR concluded that operation of the evaporation basin presents a minimal risk of adverse effects on water bird reproduction due to low selenium levels. Order 98-229 will remain in effect to handle discharge of tile drainage water to the evaporation basin until the

City and Leprino begin discharge of the combined effluent to the Stone Ranch Property, at which time all the conditions in the Order including its Monitoring and Reporting Program (MRP) will become effective.

Sampling shows that selenium levels in the combined effluent is relatively low and of similar quality to existing irrigation water at Stone Ranch so the reuse of the combined effluent for irrigation of crops at Stone Ranch is not expected to significantly change selenium levels in the evaporation basin. The Order requires continued monitoring of the combined effluent for selenium and carries over requirements for selenium monitoring of water, sediment and invertebrates in the evaporation basin, and wildlife monitoring including bird counts and nest egg surveys as well as specific prohibitions and discharge specification related to operation of the evaporation basin from WDRs Order 98-229. Furthermore, this Order requires the Dischargers to prepare and submit a technical report within four years upon initiating the discharge of combined effluent from the City and Leprino to the Stone Ranch Property, summarizing the results of the evaporation basin and wildlife monitoring and to assess whether existing operations are sufficient to compensate for potential impacts to wildlife or if additional mitigation measures are necessary.

Groundwater Considerations

There are three primary clay layers beneath Stone Ranch that restrict downward migration of groundwater; the "A Clay" between 60 and 100 feet below site grade (bsg); the "C Clay" between 250 and 300 feet bsg; and the "E Clay" (or Corcoran Clay) between about 610 and 700 feet bsg. Shallow groundwater beneath the site ranges from about 4 to 14 feet bsg, based on monitoring data from monitoring well (MW-1) and 20 piezometers installed at Stone Ranch in 1992. Shallow groundwater at Stone Ranch has been characterized by long-term monitoring at MW-1 and the piezometers, auger holes drilled at the site in November 2017, and shallow wells installed at the site in 1983 prior to installation of the tile drainage system. Groundwater quality monitoring data from MW-1, the piezometers, 2017 auger holes, and the 1983 dataset are summarized in Table 10 of the Order.

Groundwater considerations are discussed in Findings 47 through 56 of the Order.

Antidegradation

Antidegradation analysis and conclusions are discussed in Findings 72 through 84 of the Order.

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The Order limits the maximum daily discharge flow to 5.0 mgd and sets effluent limits on the combined discharge for BOD and TSS of 40 mg/L (monthly average) and 80 mg/L (daily maximum); FDS of 1,400 mg/L (annual average); and total coliform organisms of 23 MPN/100 mL (7-day median), and 240 MPN/100 ML (30-day maximum). The Order also sets a cycle average BOD₅ loading limit of 100 lbs/acre/day for the LAA, and requires wastewater be applied at agronomic rates. In addition, the Order prescribes groundwater limitations that state that the discharge shall not cause or contribute to groundwater containing concentrations in excess of the maximum contaminant levels (MCLs) identified in Title 22 or in excess of natural background water quality, whichever is greater.

The Order also includes provisions requiring the Dischargers to prepare and submit a Wastewater and Nutrient Management Plan for discharge to the Stone Ranch property, and a

Salinity Reduction Study Workplan.

Monitoring Requirements

Section 13267 of the 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 influent, effluent, sludge/solids, source/irrigation water, LAA, groundwater, evaporation basin, and wildlife monitoring requirements. This monitoring is necessary to characterize the discharge and evaluate compliance with the effluent/groundwater limitations, discharge specifications, and provisions prescribed in the Order.

CV-SALTS Regulatory Considerations

The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. These programs once effective, could change how the Central Valley Water Board permits discharges of salt and nitrate. The Salinity Control Program currently being developed would subject dischargers that do not meet stringent salinity numeric values (700 $\mu\text{mhos/cm}$ EC as a monthly average to protect the AGR beneficial use and 900 $\mu\text{mhos/cm}$ as an annual average to protect the MUN beneficial use) to performance-based salinity requirements, and would require these dischargers to participate in a Basin-wide Prioritization and Optimization Study to develop a long-term strategy for addressing salinity accumulation in the Central Valley.

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 Central Valley Water Board anticipates that the CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs region-wide, including the WDRs that regulate discharges from the City of Lemoore and Leprino to Stone Ranch. More information regarding this 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.