CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2019-0086

WASTE DISCHARGE REQUIREMENTS

FOR
UNITED STATES AIR FORCE
BEALE AIR FORCE BASE WASTEWATER TREATMENT PLANT
YUBA COUNTY

FINDINGS

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

1. On 15 August 2018, the United States Air Force submitted a Report of Waste Discharge (RWD) to apply for revised Waste Discharge Requirements (WDRs) for an existing wastewater treatment plant (WWTP), which serves Beale Air Force Base in Yuba County. Additional information to complete the RWD was submitted on 4 September 2018, 6 November 2018, and 6 December 2018.

2. The United States Air Force (Discharger) owns and operates the Beale Air Force Base (AFB) WWTP and is responsible for compliance with these WDRs.

3. The WWTP is at 6425 B Street at Beale AFB (Section T14N, R5E, MDB&M) (facility identification number 124), as shown on Attachment A, incorporated herein.

4. The WWTP is regulated under WDRs Order 5-01-087, adopted by the Central Valley Water Board on 27 April 2001; Order R5-2004-0045, adopted on 23 April 2004; and Order R5-2009-0060, adopted on 12 June 2009. The Orders prescribe requirements for discharges to land and surface water. Due to the age of the existing Orders and changes in facility operations, an updated permit is required. Therefore, Orders 5-01-087, R5-2004-0045, and R5-2009-0060 will be rescinded and replaced with this Order.

EXISTING FACILITY AND DISCHARGE

5. The WWTP collects, treats, and disposes domestic and industrial wastewater from approximately 800 buildings located on base (335 single family units, 218 multi-family units, and 250 commercial, industrial, and institutional facilities). The WWTP is in the southwest portion of the base, as shown on Attachment B, incorporated herein. The average dry weather flow from October 2012 through September 2017 is 0.29 million gallons per day (mgd) and the annual average is 0.41 mgd. The average dry weather flow, July through September 2017, is 0.50 mgd.

6. The WWTP treatment and disposal system consists of a headworks, a primary clarifier, trickling filters, a secondary clarifier, a chlorination unit, effluent ponds, and land application areas (LAAs), as shown on Attachment C, incorporated herein. The

wastewater is treated to disinfected secondary-23 recycled water requirements. An onsite generator provides backup power sufficient to run the entire WWTP in the event of a power outage.

7. Potable water for the Base is supplied by domestic wells located in the western portion of the Base which are sampled annually for water quality. Analytical results for select constituents from composite samples collected in December 2017 from the domestic wells are shown below.

Table 1. Source Water Quality (mg/L)

Constituent	Results
Total Dissolved Solids [1]	241
Bicarbonate as hydroxide	Not detected
Alkalinity	156
Total Recoverable Boron	54.3
Chloride	34.3
Total Recoverable Iron	0.36
Total Recoverable Manganese	0.16
Nitrate as Nitrogen	2.14
Total Recoverable Potassium	2.1

Table reference: Figure 2.2.5 of the 2018 RWD (Beale AFB).

[1] As reported in the Second Quarter 2018 Groundwater Monitoring Report.

8. The sanitary sewer collection system is comprised of approximately 38 miles of gravity lines, 11 sewer lift stations, 8,000 feet of force main, and seven oil/water separators. A contractor is responsible for inspecting and cleaning the separators on a periodic basis.

9. Inflow and infiltration (I/I) into the sanitary sewer system is an on-going issue and the Discharger continues to investigate, conduct studies, and make repairs to the collection system. Between 2008 and 2017, an average of approximately 38.7 million gallons (MG) per year of I/I is entering the system.

10. Two small groundwater remediation treatment systems, CG041-017 and TU002, are located in the eastern portion of the Base and discharge treated groundwater into the sanitary sewer collection system. The remediation systems are operated by the Air Force Civil Engineer Center (AFCEC), with oversight by the Central Valley Water Board, Department of Toxic Substances Control (DTSC), and other regulatory agencies. In 2017, CG041-17 and TU002 discharged approximately 6.6 MG and 0.39 MG, respectively, of treated groundwater into the sewer system. The effluent from both remediation systems are sampled prior to discharging to the sewer system. Both remediation systems are designed to capture any untreated water passing through the remediation system due to system failures, which prevents untreated groundwater from discharging to the sewer system. A complete list of documents for all Air Force Bases,

including documents associated with the CG041-017 and TU002 groundwater remediation systems, can be found at Air Force's Administrative Record webpage (http://afcec.publicadmin-record.us.af.mil/).

11. Influent flow rates to the WWTP, including flows from the CG041-17 and TU002 groundwater remediation systems and I/I estimates, averaged 12.06 MG per month between 2013 and 2017. Monthly influent average flow rates to the WWTP are summarized below.

Table 2. Monthly Influent Flow Rates (MG)

Month	2014	2015	2016	2017
January	4.24	8.48	29.93	48.28
February	14.46	13.36	10.96	43.55
March	20.48	8.41	33.81	17.78
April	9.69	7.82	9.64	20.79
May	6.89	6.91	8.45	9.50
June	7.26	7.14	8.07	9.57
July	8.08	8.23	7.03	15.46
August	7.95	7.88	8.21	17.09
September	6.66	6.55	11.02	13.61
October	8.07	7.11	12.04	11.36
November	10.18	8.36	12.57	13.4
December	33.59	12.21	22.78	10.13
Annual Avg Daily Flow (MGD)	0.37	0.28	0.48	0.63

12. Wastewater enters the WWTP through a reinforced concrete pipe and discharges to the headworks, which contains an automated bar screen, a flume, and a pH meter. A conveyor removes, washes, and dewaters the collected solids which are then dumped into garbage bags in a compactor. The garbage bags are removed from the compactor and disposed of in dumpsters. Wastewater then enters a wet well for the influent pumps. From the headworks, the wastewater is pumped to a primary clarifier. Influent wastewater samples are collected from a composite sampler located between the headworks and the primary clarifier.

13. The primary clarifier reduces the concentration of settleable solids and floating materials in the wastewater stream. Sludge removed from the clarifiers is pumped to anaerobic sludge digesters. Sludge and scum from the primary clarifier are treated in primary and secondary anaerobic digesters. The sludge is treated to "Class B" Pathogen Reduction Standards as defined in 40 CFR 503 regulations, which requires a mean cell residence of 15 days at 35 to 55 degrees Celsius and 60 days at 20 Celsius for anaerobic digestion. Both the primary and secondary digesters have a liquid holding volume of 382,000 gallons. Treated sludge is dried in 32 cement lined drying beds, located in the western portion of the WWTP, where approximately one drying bed is filled per month with sludge. The sludge remains on the beds for a minimum of three months, in

accordance with “Class B” Pathogen Reduction Standards. Sludge is tested for acceptance and then disposed of every three years at the Ostrom Road Landfill, located just south of the Base. The drying beds are equipped with a drain system that returns any wastewater back to the headworks.

14. Effluent from the primary clarifier is pumped to trickling filters to remove organic matter from the wastewater. The filters are aerobic attached-growth, biological treatment processes. Each filter is 100 feet in diameter and approximately 6 feet deep. Rocks are used as the bed on which the microorganisms attach themselves. After flowing through the rock bed, the wastewater flows out of the filters through an underdrain system and enters the secondary clarifier.

15. The secondary clarifier removes settleable solids (sludge) that have sloughed off from the trickling filters. The solids are removed from the clarifier and returned to the influent sewer main upstream of the headworks. Wastewater exits the secondary clarifier and flows through a chlorine contact basin. A summary of the monthly maximums and averages for biochemical oxygen demand (BOD) and total suspended solids (TSS) in 2017 for wastewater in the headworks, primary clarifier, and secondary clarifier is shown below.

Table 3. Maximum and Average BOD and TSS Concentrations (mg/L)

Constituent (mg/L)		Influent (Headworks)	Primary Clarifier	Secondary Clarifier
BOD	Max	298	199	40.1
BOD	Avg	87.1	38.4	9.1
TSS	Max	940	266	73
TSS	Avg	66.4	21.7	7.8

Avg = average concentration
Max = maximum concentration

16. The chlorine contact basin is constructed of concrete and has a volume of approximately 55,200 gallons. Sodium hypochlorite is used as the disinfecting agent to kill pathogenic bacteria. A chlorine analyzer paces the chlorine feed pump and maintains a chlorine concentration in the contact basin between 1.5 and 1.8 parts per million (ppm). Wastewater effluent quality from the chlorine contact basin compared to the effluent limits included in the 2001 WDRs is summarized below.

Table 4. Wastewater Effluent Quality

Constituent [1]	2015	2016	2017	Effluent Limits 30 Day Avg
TDS (mg/L)	598	550	547	350
Chloride (mg/L)	182	231	201	Not established
Mercury (µg/L)	0.2	ND	ND	0.2
Nitrate (mg/L)	26	24	27.3	Not established
Nitrite (mg/L)	1.4	0.9	1.0	Not established

Constituent [1]	2015	2016	2017	Effluent Limits 30 Day Avg
TKN (mg/L)	19.1	13.2	11	Not established
TN (mg/L)	29.4	24.4	30	Not established
Cadmium (µg/L)	1.8	3	1.1	1.3
Copper (µg/L)	17	29.3	18	20
Sodium (mg/L)	92.8	146	89.4	Not established
Boron (µg/L)	191	281	197	250

[1] Table C3 in the Second Quarter 2018 Groundwater Monitoring Report.
[2] Concentrations shown are the maximum monthly average for the year.
TN = total nitrogen
TKN = total Kjeldahl nitrogen
ND = not detected

17. The WWTP effluent is sampled for total coliform at the outfall of the chlorine contact basin. Total coliform results for Title 22 requirements for disinfected secondary-23 recycled water cannot exceed the most probably number (MPN) of 23 per 100 milliliters (MPN/100mL) as a 7-day median and cannot exceed 240 MPN/100mL in more than one sample in any 30-day period. While the total coliform results for the 7-day median have not exceeded 23 MPN/100 mL in the last three years (2015, 2016, and 2017), there are several exceedances of the 240 MPN/100 mL requirement. The number of total coliform results exceeding 240 MPN/100mL for each month for a three-year period is shown below.

Table 5. Total Coliform Exceedances

Month	2015	2016	2017
January	--	--	3
February	--	--	5
March	--	3	2
April	--	--	--
May	--	--	--
June	--	2	--
July	--	2	--
August	--	--	--
September	2	--	--
October	--	--	2
November	--	--	--
December	--	--	--

-- = value did not exceed 240 MPN/100mL in more than one sample for the month.
Between 2015 and 2017, the 7-day median of less than 23 MPN/100mL for coliform was not exceeded.

18. Effluent from the chlorine contact basin flows by gravity to the effluent pond. The pond is concrete lined with a capacity of approximately 2.6 million gallons, where the treated effluent is stored and aerated by a floating surface aerator.

19. A significant source of influent flow to the effluent pond, in addition to the effluent from the WWTP, is from groundwater remediation treatment plant CG044-013, which began operating in 1994. The system was installed to remediate groundwater contamination associated with Landfill No. 1 (Site LF013), located just west of the sludge drying beds at the WWTP. The remediation system is operated and regulated by AFCEC, with oversight by the Central Valley Water Board, DTSC, and other regulatory agencies. Extracted groundwater from Site LF013 is treated by an air stripping process to remove trichloroethene (TCE) and other volatile organic compounds (VOCs). The system is controlled through a Supervisory Control and Data Acquisition (SCADA) system. The treatment system is designed so that it cannot operate without all components of the system being active (i.e., the extraction system cannot operate without the air stripper blowers or conveyance pumps operating). This control prevents releases of untreated groundwater to the effluent pond at the WWTP. The effluent from the remediation system is analyzed for numerous VOCs prior to discharging to the effluent pond. A complete list of documents for all Air Force Bases, including documents associated with the CG044-013 remediation system, can be found at the Air Force's Administrative Records webpage (http://afcec.publicadmin-record.us.af.mil/).

20. Since the operation of the groundwater remediation treatment system began in 1994, TCE concentrations in effluent from the groundwater remediation system have exceeded the maximum contaminant level (MCL) in two samples; one collected in October 2001 and one in July 2010. No other VOCs have exceeded MCLs.

21. A summary of the volume of effluent produced by the Site CG044-013 groundwater treatment that is discharged to the effluent pond is summarized below.

Table 6. Monthly Flow Rates from Site CG044-013 to Effluent Pond (MG)

Month	2014	2015	2016	2017	Average Monthly Flow
January	12.51	10.00	6.02	1.22	7.44
February	12.23	10.94	9.87	0	11.01
March	8.30	13.2	13.38	4.87	9.19
April	4.90	13.2	13.20	2.82	8.53
May	5.15	13.77	12.75	10.68	10.59
June	5.73	13.36	13.70	13.05	11.46
July	9.36	12.50	13.34	7.44	10.66
August	12.46	12.15	13.52	0	12.71
September	8.66	12.98	12.88	0	11.51
October	7.24	13.32	13.87	3.99	9.61
November	8.47	12.44	12.64	13.22	11.69
December	5.18	8.76	8.49	14.3	9.18

Month	2014	2015	2016	2017	Average Monthly Flow
Average Yearly Flow (MG)	8.35	12.22	11.72	7.98	

22. Total flows in million gallons per month to the effluent pond, including effluent from groundwater remediation treatment plant CG044-013 and the WWTP, are summarized below.

Table 7. Total Flows (MG)

Month	Average WWTP Flow to Effluent Pond	Average Remediation System Flow to Effluent Pond	Average Flow to Effluent Pond
January	22.73	7.44	30.17
February	20.58	11.01	31.59
March	20.12	9.19	29.31
April	11.96	8.53	20.49
May	7.94	10.59	18.53
June	8.01	11.46	19.47
July	9.7	10.66	20.36
August	10.82	12.71	23.53
September	9.46	11.51	20.97
October	9.63	9.61	19.24
November	11.13	11.69	22.82
December	19.68	9.18	28.86

23. Treated wastewater from the effluent pond is pumped to Pond 4, located approximately 3,000 feet southeast of the WWTP. Pond 4 is unlined, has a surface area of approximately 27 acres and is up to 19 feet deep for a total holding capacity of 109 million gallons, not including 2 feet of freeboard. Treated effluent is stored in this pond prior to being pumped to the A-Street Pond at the golf course or an irrigation field (Irrigation Field #1).

24. In the event of a process failure at the WWTP that could result in discharges of partially treated wastewater, WWTP staff would first attempt to store the wastewater in the effluent pond. When the capacity of the effluent pond is approached, the partially treated wastewater would then be pumped to Pond 4, which would be used to provide storage for the 20-day period required by Title 22. In addition, effluent from the CG044-013 groundwater treatment remediation system would cease until the process failure at the WWTP has been corrected.

25. The A-Street Pond is a small unlined holding pond near the golf course. The pond has a surface area of approximately two acres and a depth ranging from three to eight feet with a storage volume of approximately two million gallons. The wastewater from the

A-Street pond is used to irrigate the 120-acre on-base, restricted access golf course. Sprinkler irrigation occurs at night with most of irrigation taking place in the summer months.

26. Irrigation Field #1 is located approximate 3,000 feet northwest of Pond 4 and is used to dispose treated wastewater when water is not needed for golf course irrigation. Non-edible vegetation on the 40-acre field is sparse and consists of native grasses or fodder and non-native invasive weeds. There are no managed or planted agricultural grasses or seed crops grown on site and the field is not mowed. The field is sprinkler irrigated using irrigation cannons. There is no tailwater return system, but the field is bermed to contain treated effluent.

27. Five flow meters measure the volume of wastewater that enters the WWTP and is treated and disposed. The meter numbers and measured wastewater sources are shown below. Flow meter locations are shown on Attachment C.

Table 8. Flow Meters

Flow Meter	Description
Meter Station 1	Influent to the Headworks
Meter Station 2	Effluent from the Chlorine Contact Basin
Meter Station 3	Effluent Pond to Pond 4
Meter Station 4	Pond 4 to A-Street Pond
Meter Station 5	Pond 4 to Irrigation Field #1

28. The WWTP uses the SCADA system to monitor and control wastewater treatment plant processes, the pumps at Pond 4, water levels at the A-Street Pond, and the irrigation at Irrigation Field #1.

29. The sewer collection system is old and significant storm water inflow and infiltration (I/I) into the sanitary sewer system is an issue. Several projects over the past few years have been conducted to remedy I/I. All of the main sewer lines have been close circuit televised (CCTV) and repairs have been made using trenchless technology to line the interior of the pipes. New lift stations were constructed in 2017 which allowed the Base to abandon several creek crossings and old sewer lines. Additional studies and remedies for I/I are on-going.

PLANNED CHANGES IN THE FACILITY AND DISCHARGE

30. Construction of an additional irrigation field (Irrigation Field #2) was completed in September 2011 but has not yet received wastewater. Irrigation Field #2 is comprised of two separate areas, as shown on Attachment B. The eastern field consists of 39 acres and will use spray cannons for irrigation. The western field of Irrigation Field #2 is comprised of 20 acres and can accommodate two spray cannons. Both fields are bermed to contain the wastewater on the fields. Vegetation on the fields consists of native and non-native invasive weeds, which are not non-edible and are not harvested

for human consumption. Discharges to Irrigation Field #2 are regulated under this Order and a flow meter is required to be installed prior the use of the field.

31. The Discharger plans on utilizing small animals (goats or sheep) as a measure for vegetation control for the irrigation fields.

32. There are two existing ponds, Ponds 2 and 3, that have been constructed but have not been used. Both ponds are unlined and bermed. Ponds 2 and 3 have capacities of 1.3 MG and 26.5 MG, respectively. If water levels in Pond 4 become a concern, such as insufficient freeboard in Pond 4, wastewater from Pond 4 can be diverted and pumped to Ponds 2 and 3 for temporary storage. Once the water level in Pond 4 subsides, the water from Ponds 2 and 3 will gravity flow back to Pond 4. The Discharger has requested that Ponds 2 and 3 be added to this Order for use as a contingency measure in the event that 2 feet of freeboard cannot be maintained in Pond 4.

33. A project to enlarge A-Street Pond is also under consideration to increase the storage capacity of the pond. The amount of increased storage capacity has not been determined due to some constraints regarding existing vernal pools in the vicinity. Additional evaluations may be conducted.

34. Infrastructure is in place that would allow the effluent from the CG044-013 groundwater remediation system to discharge directly to the A-Street Pond, bypassing the Effluent Pond and Pond 4. Conveyance of CG044-013 effluent directly to A-Street Pond will not affect water quality as the Site CG044-013 effluent is proven to be of a higher quality than Title 22 disinfected secondary-23 recycled water standards. Flows from CG044-013 into the A-Street Pond will be measured at flow meter station 4 (M4).

INDUSTRIAL DISCHARGE PRETREATMENT

35. Industrial discharges to publicly owned wastewater treatment facilities (WWTFs) can cause one or more of the following problems if not adequately controlled:

    a. *Interference or Upset.* Discharges of high volumes or concentrations of certain pollutants can inhibit or interfere with the proper operation of the WWTF, causing it to do an inadequate job of treating wastes. As a result, the facility could be prevented from meeting its permit requirements.

    b. *Sludge Management.* Industrial pollutants, particularly metals and other toxic pollutants, can limit the sludge management alternatives available to the Discharger and increase the cost of sludge management and disposal. Additionally, biosolids contaminated with toxic pollutants could be rendered unsuitable as a soil amendment.

    c. *Pass-through.* Some industrial pollutants may not receive adequate treatment and pass through the treatment system at concentrations that can could unreasonably degrade groundwater quality and/or prevent recycling of domestic wastewater.

Additionally, the discharge of explosive, reactive, or corrosive wastes can cause damage to the wastewater collection system or the treatment works and may also pose a threat to worker or public safety.

36. The Discharger has implemented an industrial pretreatment program to regulate the discharge of industrial wastes into the wastewater collection system or treatment works to prevent damage to the sewer system or treatment works, inhibit or disrupt the treatment process, or cause violation of the effluent or groundwater limits of this Order. As part of the Discharger's industrial pre-treatment program, sampling was conducted for six consecutive months beginning in October 2016. The samples were taken from the secondary clarifier as 24-hour composite samples. No constituent concentrations exceeded the effluent limits in the existing WDRs for the WWTP effluent. The complete analytical data set was included in the 2018 RWD. This Order contains provisions that require the Discharger continue to implement the program, periodically review and update the program as appropriate, and report any proposed new industrial discharges.

SITE-SPECIFIC CONDITIONS

37. The surrounding land use around Beale AFB is primarily agricultural. Surface water drainage in the area is to Hutchinson Creek, which eventually discharges to Bear River.

38. In the western portion of the Base, the area consists of relatively flat grassland. The plains transition eastward into low, rolling hills that gradually merge with the foothills of the Sierra Nevada. Elevations range from 80 to 90 feet above mean sea level (amsl) along the western and southwestern boundaries and is more than 400 feet amsl at the northeastern boundary.

39. The majority of the Base consists of low alluvial plains and former stream floodplains and channels, which has deposited sands, gravels, silt, and clay over time. Foothills of the Sierra Nevada are present in the eastern portion of the Base and the topography becomes progressively steeper and outcrops expose mostly older consolidated sedimentary rocks. Some igneous and metamorphic crystalline basement rock of the Sierra Nevada is exposed near the eastern boundary.

40. The 100-year return period total annual precipitation value for Beale AFB is 39.33 inches. The average evapotranspiration rate is approximately 57 inches annually.

GROUNDWATER CONDITIONS

42. Groundwater under Beale AFB flows mainly through alluvial deposits, consisting of sediments deposited by water in stream beds, flood plains, lakes, and alluvial fans. Alluvial fans are characterized by heterogeneous particle sizes and distribution, resulting in highly variable hydraulic properties. Because of the complexity of the alluvial deposits, local aquifers are not clearly defined.

43. Groundwater beneath Pond 4 and Irrigation Field #1 ranges between 15 feet to 33 feet below ground surface (bgs). Near the A-Street pond and the Golf Course, depth to groundwater ranges from 27 feet to 33 feet bgs. The base-wide downgradient flow direction is southwest but is more westerly in the southwest portion of the Base. Localized flow directions can vary due to pumping of groundwater for domestic use and groundwater remediation projects. Based on the Second Quarter 2018 Groundwater monitoring report, groundwater flows southwest near Pond 4, but flows northeast near the A-Street Pond and Golf Course.

44. Fourteen groundwater monitoring wells are used to monitor shallow groundwater quality near Pond 4, Irrigation Field #1, and the A-Street Pond. Well construction details are included in the Information Sheet and well locations are shown on Attachment D and Attachment E, incorporated herein.

45. Ten of the fourteen monitoring wells (P4C001MW to P4C009MW and background well BGL003MW) are used to evaluate groundwater quality at Pond 4. Monitoring well BGL003MW was identified as a background well for Pond 4 and the A-Street pond and is located 1.2 miles east of Pond 4 and 1.7 miles south of A-Street pond. This well is located in area unlikely to be influenced by infiltration from the ponds or other potential sources of contamination. Analytical data for the upgradient Pond 4 monitoring wells from 2015 to 2017 and the first two quarters in 2018 are summarized below.

Table 9. Average and Maximum Concentration (mg/L)

Constituent (mg/L) [1]		BGL003MW[1]	P4C001MW	P4C002MW	P4C003MW	P4C007MW[2]
TDS	Avg	152	291	107	139	219
TDS	Max	176	385	137	238	280
Nitrate as N	Avg	3.2	3.7	2.4	3.4	6.7
Nitrate as N	Max	4.7	5.6	3.31	4.22	8.7
TKN	Avg	0.4	0.5	0.2	0.3	0.7
TKN	Max	0.9	2.3	1	1.1	4
Ammonia	Avg	0.2	0.2	0.2	0.2	0.6
Ammonia	Max	0.7	1.5	0.6	0.4	3.4
Chloride	Avg	6.9	52.9	1.6	8.4	11.9
Chloride	Max	12.2	111	2.1	31.5	13.8
Sodium	Avg	9.6	14.2	6.6	7.84	15.7
Sodium	Max	16	16.9	7.4	9.1	40.7
Total Iron	Avg	0.02	0.07	0.12	0.49	0.14
Total Iron	Max	0.18	0.28	0.32	0.99	1.04
Total Mn	Avg	0.0003	0.004	0.002	0.006	0.08
Total Mn	Max	0.0006	0.02	0.01	0.02	0.35

Avg = average concentration
Max = maximum concentration
mg/L = milligrams per liter
Iron = 0.3 mg/L (Secondary Maximum Contaminant Recommended Level)

Manganese = 0.05 mg/L (Secondary Maximum Contaminant Recommended Level)

[1] Background well

[2] Cross gradient well

46. Coliform results in upgradient monitoring wells near Pond 4 are summarized below.

Table 10. Average and Maximum Coliform Results

Total Coliform[1] (MPN/100mL)	BGL003MW[2]	P4C001MW	P4C002MW	P4C003MW	P4C007MW
2015	<2	8	22	30	17
2016	<2	<2	140	<2	130
2017	60	8	17	<2	<2
2018	<2	170	2	<2	<2

[1] Maximum concentrations of total coliform reported for each year are shown.

[2] Background well.

47. Groundwater quality in downgradient monitoring wells near Pond 4 is summarized below.

Table 11. Downgradient Groundwater Quality near Pond 4

Constituent (mg/L)		P4C004MW	P4C005MW	P4C006MW	P4C008MW	P4C009MW
TDS	Avg	327	275	207	345	142
TDS	Max	374	375	272	380	203
Nitrate as N	Avg	0.6	1.75	1.4	1.6	0.4
Nitrate as N	Max	1.7	7.43	3.8	2.5	1
TKN	Avg	0.2	0.3	0.3	0.6	0.3
TKN	Max	0.6	0.7	0.8	5	0.7
Ammonia	Avg	0.1	0.3	0.1	0.2	0.1
Ammonia	Max	0.2	0.8	0.2	0.9	0.6
Chloride	Avg	58	62.3	45	66.7	5.6
Chloride	Max	71.4	99.4	97.9	81.7	7.1
Sodium	Avg	18.9	32	25.7	13	11.4
Sodium	Max	25.5	42.2	40.5	15.6	14.5
Total Iron	Avg	0.10	0.005	0.07	0.20	0.17
Total Iron	Max	1.01	0.005	0.28	1.61	1.61
Total Manganese	Avg	0.004	0.05	0.0005	0.03	0.008
Total Manganese	Max	0.01	0.20	0.001	0.38	0.07

Avg = average concentration

Max = maximum concentration

[1] Groundwater data from 2015-2017 and two quarters from 2018

48. Coliform results in downgradient monitoring wells near Pond 4 are summarized below.

Table 12. Downgradient Coliform Results

Total Coliform[1] (MPN/100mL)	P4C004MW	P4C005MW	P4C006MW	P4C008MW	P4C009MW
2015	<2	17	13	2	30
2016	<2	2	8	30	<2
2017	2	8	1600	2	<2
2018	<2	4	14	2	<2

[1] Maximum concentrations of total coliform reported for each year are shown.

49. Concentrations of total manganese and iron exceed concentrations protective of beneficial uses in upgradient wells P4C002MW and P4C003MW and cross gradient well P4C007MW.

50. Concentrations of all constituents in monitoring wells downgradient of Pond 4 are less than concentrations protective of beneficial uses, except for total manganese and total iron.

51. Concentrations of chloride, nitrate as nitrogen, and TDS in all monitoring wells near Pond 4, including background well BGL003MW, show either stable concentration trends over time or decreasing trends. Groundwater samples were also analyzed for TKN and ammonia as nitrogen. When evaluated as components of total nitrogen, along with nitrate, concentrations of TKN and ammonia were than less than nitrate as nitrogen concentrations.

52. Four of the fourteen groundwater monitoring wells are used to monitor shallow groundwater quality in the vicinity of the A-Street Pond. Monitoring wells PA03 and PA04 were previously identified as downgradient wells; however, due to fluctuating groundwater flow directions, PA03 and PA04 are located upgradient of the pond as documented in the Second Quarter 2018 Groundwater Monitoring Report. Because of the fluctuating groundwater flow directions, the four wells were each evaluated as a location potentially impacted from infiltration from the A-Street Pond instead of representing conditions upgradient and downgradient of the pond. Groundwater quality data for the monitoring wells near the A-Street Pond are summarized below.

Table 13. Groundwater Quality Near A-Street Pond

Constituent[1] (mg/L)		BGL003MW[2]	PA01	PA02	PA03	PA04
TDS	Avg	152	181	171	193	289
TDS	Max	176	234	242	220	344
Nitrate as N	Avg	3.2	1.7	3.1	3.7	1.1
Nitrate as N	Max	4.7	2.4	3.6	4.1	1.25
TKN	Avg	0.4	0.3	0.3	0.4	0.3

Constituent[1] (mg/L)		BGL003MW[2]	PA01	PA02	PA03	PA04
TKN	Max	0.9	0.9	0.9	1.7	1.8
Ammonia	Avg	0.2	0.2	0.1	0.2	0.1
Ammonia	Max	0.7	0.9	0.2	0.5	0.2
Chloride	Avg	6.9	14	9.8	31.6	56.7
Chloride	Max	12.2	16.9	11.2	41.4	71.1
Sodium	Avg	9.6	32.8	18.6	14.3	15.8
Sodium	Max	16	38.3	22.9	15.9	18.4
Total Iron	Avg	0.02	0.41	1.28	0.26	0.36
Total Iron	Max	0.18	0.88	3.26	0.99	2.22
Total Manganese	Avg	0.0003	0.009	0.08	0.004	0.009
Total Manganese	Max	0.0006	0.06	0.12	0.009	0.06

[1] Groundwater data from 2015-2017 and two quarters from 2018

[2] Background well

53. Coliform results in the A-Street Pond monitoring wells are summarized below.

Table 14. Coliform Results in Groundwater Near the A-Street Pond

Total Coliform (MPN/100mL)	BGL003MW (background)	PA01	PA02	PA03	PA04
2015	<2	4	<2	4	8
2016	<2	<2	<2	<2	4
2017	60	4	<2	2	<2
2018	<2	<2	<2	<2	<2

54. Concentrations of nitrate as nitrogen, chloride, and TDS show stable or decreasing concentration trends over time in data generally collected between 2009 and 2018, with the exception of chloride in PA02. Chloride concentrations show an increasing trend. However, since 2009, the maximum concentration was 12 mg/L, less than the concentration protective of beneficial use of 500 mg/L. In addition, the average chloride concentration of 6.9 mg/L in background well BGL003MW is relatively equivalent to the the average concentration in PA02 (9.8 mg/L).

55. Groundwater samples are analyzed for contaminants associated with the CG044-013 groundwater remediation treatment plant, which include total petroleum hydrocarbon as diesel (TPHD) and VOCs. Since 2013, TPHD and VOCs have not been detected in groundwater from the shallow groundwater monitoring wells located near Pond 4 and the A-Street pond.

56. Between 2015 and the second quarter of 2018, total coliform concentrations greater than 2.2 MPN/100mL have been detected in all monitoring wells located around the

A-Street Pond and Pond 4 (with the exception of PA02), including background well BGL003MW.

BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

57. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan) designates beneficial uses, establishes water quality objectives (WQOs), contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263, subdivision (a), waste discharge requirements must implement the Basin Plan.

58. Local drainage is to Hutchinson Creek, which discharges to Western Pacific Interceptor, and finally to Bear River. The beneficial uses of surface water, as stated in the Basin Plan, are municipal and domestic supply (MUN); agricultural supply (AGR); industrial power (POW); hydropower generation; water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms (MIGR); and spawning, reproduction, and/or early development (SPAWN).

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

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

61. The Basin Plan's numeric WQOs for bacteria requires that the most probable number (MPN) of coliform organisms shall be less than 2.2 MPN/100 mL in MUN groundwater.

62. At a minimum, the Basin Plan's narrative WQO for chemical constituents requires waters designated as supporting the MUN beneficial use to meet California Code of Regulations, title 22 (Title 22) maximum contaminant levels (MCLs). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

63. The narrative WQOs for toxicity requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.

64. Quantifying a narrative WQO requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific

beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numeric limits in order to implement the narrative objective.

65. In the absence of specific numeric WQOs, the Basin Plan methodology is to consider any relevant published criteria to derive appropriate permit limits. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 µmhos/cm. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 µmhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

66. 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. On 16 October 2019, the State Water Resources Control Board adopted a resolution approving the Central Valley Water Board Basin Plan amendments and also directed the Central Valley Water Board to make targeted revisions to the Basin Plan amendments within one year from the approval of the Basin Plan amendments by the Office of Administrative Law. 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 µmhos/cm EC as a monthly average to protect the AGR beneficial use and 900 µmhos/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.

67. 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 Salt and Nitrate Control Program 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 Facility. More information regarding this regulatory planning process can be found on the Central Valley Water Board CV-SALTS website (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/).

ANTIDEGRADATION ANALYSIS

68. State Water Resources Control Board Resolution 68-16 (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution 68-16) prohibits the Board from authorizing the degradation of high-quality water unless it has been shown that:

a. The degradation is consistent with the maximum benefit to the people of the state.

b. The degradation will not unreasonably affect present and anticipated future beneficial uses.

c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more WQOs, and

d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

69. Degradation of groundwater by some of the typical waste constituents associated with discharges from a municipal wastewater utility, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from reliance on numerous, concentrated individual wastewater systems, and the impact on water quality will be substantially less. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.

70. The Discharger has been monitoring groundwater quality at the site since 1996. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this facility must be based on existing background groundwater quality.

71. The following constituents of concern have the potential to degrade groundwater. Analytical data are presented in milligrams per liter.

Table 15. Antidegradation Summary

Constituent	Effluent [1]	Background Groundwater [2]	Downgradient Groundwater near Pond 4 [2]	Groundwater near A-Street Pond [2]	Concentrations Protective of Beneficial Uses
TDS	442	146	266	209	1,000 [3]
Nitrate Nitrogen	13.51	3.2	1.2	2.4	10 [4]
Ammonia Nitrogen	NA	0.19	0.18	0.15	Not established
TKN	6.15	0.36	0.36	0.32	Not established
Total Nitrogen	19.87	Not analyzed	Not analyzed	Not analyzed	Not established
Sodium	Not analyzed	9.6	25.5	19.9	69 [5]

Constituent	Effluent [1]	Background Groundwater [2]	Downgradient Groundwater near Pond 4 [2]	Groundwater near A-Street Pond [2]	Concentrations Protective of Beneficial Uses
Chloride	Not analyzed	6.9	49.6	28.3	500 [6]
Total Iron	Not analyzed	0.02	0.12	0.59	0.3 [7]
Total Manganese	Not analyzed	0.0003	0.02	0.02	0.05 [7]

Note: Half the reporting limit was used for non-detects for averaging purposes.
Flow weighted average from 2014-2017.

1. Results from 2015-2017 and the first two quarters of 2018.
2. Secondary Maximum Contaminant Upper Level.
3. Primary Maximum Contaminant Level.
4. Agricultural Water Quality Goals, Taste and Odor Threshold
5. Secondary Maximum Contaminant Upper Level.
6. Secondary Maximum Contaminant Level.

a. Total Dissolved Solids. TDS concentrations in the effluent are greater than concentrations in shallow groundwater monitoring wells associated with Pond 4 and the A-Street Pond. In 2017, TDS was reported in domestic well water at a concentration of 241 mg/L, which is relatively equivalent to concentrations reported in the shallow groundwater monitoring wells. The domestic well field is located approximately 4 miles northwest of Pond 4 and would not likely be influenced by discharges to Pond 4, the irrigation field, or the A-Street Pond. TDS concentration trends are either stable or decreasing in groundwater monitoring wells. Based on TDS concentrations in effluent, shallow groundwater near the ponds, TDS concentrations in domestic wells in the area, and TDS concentration trends, it does not appear the discharge is impacting groundwater with respect to TDS. This Order requires continued groundwater monitoring and does not allow an exceedance in groundwater of the concentration protective of beneficial use.

b. Nitrate. For nutrients such as nitrate, the potential for degradation depends not only on the quality of the treated effluent, but the ability of the vadose zone below the effluent disposal ponds to provide an environment conducive to nitrification and denitrification to convert the effluent nitrogen to nitrate and the nitrate to nitrogen gas before it reaches the water table. The effluent nitrate nitrogen concentration currently averages 13.5 mg/L and the background groundwater concentration averages 3.2 mg/L. In shallow groundwater monitoring wells downgradient of Pond 4 and around the A-Street Pond, nitrate as nitrogen concentrations are less than background and concentration trends are either stable or decreasing. This Order requires continued groundwater monitoring and does not allow an exceedance of the concentration protective of beneficial use for nitrate as nitrogen in groundwater.

c. Total Coliform Organisms. For coliform organisms, the potential for exceedance of the Basin Plan's numeric WQO depends on the ability of vadose zone soils below the effluent storage/disposal ponds and saturated soils within the shallow water bearing zone to provide adequate filtration. Between 2015 and the second quarter of 2018, median concentrations of total coliform in effluent samples have been less than 23 MPN/100mL seven-day median but has exceeded 240 MPN/100mL in more than one sample for the 30-day period requirement. These exceedances have likely resulted in groundwater impacts as total coliform have been detected in groundwater monitoring wells at concentrations greater than the 2.2 MPN/100mL requirement. This Order requires continued monitoring of groundwater and includes effluent and groundwater limits for total coliform. This Order does not allow a total coliform exceedance of the Title 22 disinfected secondary-23 recycled water standards.

72. This Order establishes effluent and groundwater limitations for the WWTP that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds WQOs set forth in the Basin Plan.

    a. For nitrate as nitrogen and TDS, current groundwater monitoring data indicate that groundwater has not been degraded from the discharge of wastewater beyond background groundwater quality (as established by data from background well BGL003MW). The requirements of this Order do not allow an exceedance of concentrations protective of beneficial use.

    b. For total coliform, current groundwater monitoring data indicates that the discharge has caused (or contributed to) exceedances of the concentration protective of beneficial use. The provisions of this Order require that the Discharger implement BPTCs and includes a time schedule to bring the discharge into compliance with concentrations protective of beneficial use.

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

    a. On-going collection system improvements to reduce and limit inflow and infiltration;
    b. A Supervisory Control and Data Acquisition (SCADA) system for early detection of potential wastewater and treatment disruptions;
    c. Wastewater treatment plant that provides secondary treatment with chlorine disinfection;
    d. Fully contained treatment vessels, lined effluent pond, and concrete lined solids drying beds; and
    e. Spray irrigation applied at agronomic loading rates for water and nutrients to minimize groundwater quality degradation.

    The Discharger's implementation of these practices, in combination with the time schedule to achieve compliance with applicable WQOs as soon as practicable, are considered BPTC for the wastes in the discharge. This Order requires the Discharger to maintain these practices consistent with the *State Antidegradation Policy*.

WATER RECYCLING REGULATORY CONSIDERATIONS

74. Undisinfected domestic wastewater contains human pathogens that are typically measured using total or fecal coliform organisms as indicator organisms. The State Water Board's Division of Drinking Water (DDW), which has primary statewide responsibility for establishing drinking water quality regulations for the benefit of public health, has established statewide criteria in Title 22, section 60301 et seq. (Title 22) for the use of recycled water.

75. On 3 February 2009, the State Water Board adopted Resolution 2009-0011 (Recycled Water Policy). The Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and to reduce greenhouse emissions.

76. On 23 April 2009, the Central Valley Water Board adopted Resolution R5-2009-0028, which encourages water recycling, water conservation, and regionalization of wastewater treatment facilities. This resolution requires that municipal wastewater treatment agencies document:

    a. Efforts to promote new or expanded wastewater recycling opportunities and programs;

    b. Water conservation measures; and

    c. Regional wastewater management opportunities and programs.

    The distribution of recycled water by the Discharger is consistent with the intent of the *Recycled Water Policy* and Central Valley Water Board Resolution R5-2009-0028.

77. In accordance with Title 22, the Discharger submitted to DDW an Engineering Report for recycling water (per Title 22, § 60301.230) to the Central Valley Water Board and DDW. DDW approved the Engineering Report on 3 July 2013 and included several recommendations for the water recycling program to the Central Valley Water Board, including the submittal of an Operations and Maintenance Manual for the ultraviolet light disinfection system; however, the ultraviolet light system was never put into use.

OTHER REGULATORY CONSIDERATIONS

78. 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 that water is safe for domestic use.

79. For the purposes of this Order, the WWTP is classified as "2B," which denotes as follows:

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

    b. Category B complexity, defined as: *"Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units."*

80. The discharges of waste authorized under this Order, and the associated operation of treatment ponds (as described herein), are exempt from the prescriptive requirements set forth in California Code of Regulations, title 27, section 20000 et seq. (See Cal. Code Regs., tit. 27, § 20090, subd. (a)-(b).)

81. 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 the circumstances, other methods may also be appropriate.

82. Beale AFB is covered 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).

83. Water Code section 13267, subdivision (b)(1) provides as follows:

    > [T]he 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.

    Technical reports required under this Order (and per the separately issued Monitoring and Reporting Program Order R5-2019-0086) 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.

84. 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 (Dec. 1981), shall apply to all wells installed or monitored in connection to this Order.

85. This Order does not authorize the disposal of biosolids generated by the WQCF. Separate regulatory requirements are set forth in 40 Code of Federal Regulations part 503. Disposal operations must obtain coverage under the *WDRs General Order for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural and Land Reclamation Activities,* State Water Board Order 2004-0012-DWQ (Biosolids General Order).

86. The ability to discharge waste to the waters of the State of California is not a right but a privilege. (see Wat. Code, § 13263, subd. (g).) Accordingly, the adoption of this Order shall not be construed as creating a vested right to continue in any discharges otherwise authorized herein.

87. The United States Air Force has previously determined that the operation of this facility does not require the County to undertake a discretionary approval under the California Environmental Quality Act ("CEQA") (Pub. Resources Code, § 21000 et seq.). All wastewater management systems at the facility have already been installed and are currently in use. This Order places additional requirements on the continued operation of the facility in order to ensure the protection of waters of the state. The issuance of this Order is therefore exempt from the provisions of CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting … of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.

88. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in Code of Federal Regulations (C.F.R.) part 503, *Standard for the Use or Disposal of Sewage Sludge*, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.

89. The Central Valley Water Board is using the Standards in 40 C.F.R. part 503 as guidelines in establishing this Order, but the Central Valley Water Board is not the implementing agency for such regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.

90. Pursuant to Water Code section 13263 subdivision (g), the ability to discharge waste is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

PUBLIC NOTICE

91. All the above and supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharger.

92. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe WDRs for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.

93. All comments pertaining to the discharge were heard and considered in a public hearing.

REQUIREMENTS

IT IS HEREBY ORDERED that Orders 5-01-087, R5-2004-0045, and R5-2009-0060 are rescinded; and, pursuant to Water Code sections 13263 and 13267, the United States Air Force (Discharger), its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.

2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

3. Except as authorized per Section E.2 of the Standard Provisions and Reporting Requirements for WDRs, 1 March 1991 ed. (SPRRs) and Finding 34 for the CG044-13 effluent, treatment system bypass of untreated or partially treated waste is prohibited.

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

5. Toxic substances shall not be discharged into the wastewater treatment system such that biological treatment mechanisms are disrupted.

B. Flow Limitations

1. **Effectively immediately**, influent and effluent flows shall not exceed the following limits:

Table 16. Initial Flow Limits

Location	Flow Measurement	Flow Limit	Flow Meter
Influent Flows to WWTP	Average Daily Flow	0.75 mgd	Meter Station 1 (M1)
Flows to Pond 4	Total Maximum Annual Flow	300 MG	Meter Station 3 (M3)

2. Effective on the date of the Executive Office approval, the average daily flow may be increased to a maximum of 0.75 mgd and the maximum annual flow may be increased up to 465 MG upon completion and approval of Construction Completion Reports and water balances pursuant to Provision I.1.g.

Table 17. Flow Limits Upon Approval

Location	Flow Measurement	Flow Limit	Flow Meter
Influent to the WWTP	Average Daily Flow	0.75 mgd	Meter Station 1 (M1)
Flows to Pond 4	Total Maximum Annual Flow	465 MG	Meter Station 3 (M3)

C. Effluent Limitations

1. Effluent discharged from the chlorine contact basin shall not exceed the following limits:

Table 18. Effluent Limitations

Constituent	Units	Limit	Compliance Determination
Total coliform organisms	MPN/100mL	23	7-day median
Total coliform organisms	MPN/100mL	240 [1]	Monthly maximum

[1] No more than one result shall exceed 240 MPN/100mL in a 30-day period.

2. Prior to discharge to the LAAs (golf course and irrigation fields), effluent shall not exceed the following limits for total coliform organisms:

   a. The 7-day median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed 23 MPN/100mL. Compliance with this requirement will be determined using data for each calendar week.

   b. The number of total coliform bacteria shall not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.

Compliance with this requirement shall be determined based on samples obtained at the sampling locations shown on Attachment C.

3. BOD concentrations in Pond 4 shall not exceed the following limit:

Table 19. BOD_5 Concentration Limit for Pond 4

Constituent	Units	Limit	Basis of Compliance Determination
BOD_5	mg/L	90	Monthly average

D. Discharge Specifications

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

2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.

3. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.

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

5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. Public contact with wastewater at the WWTP shall be prevented through such means as fences, signs, or acceptable alternatives.

7. Objectionable odors shall not be perceivable beyond the limits of the WWTP property at an intensity that creates or threatens to create nuisance conditions.

8. Compliance with the above Discharge Specification 7 shall be determined based on the dissolved oxygen (DO) content in the upper one foot of each WWTP wastewater pond. Accordingly, DO in each pond shall not be less than 1.0 mg/L for three consecutive sampling events. In the event that the same pond's DO is below 1.0 mg/L for three consecutive sampling events, the Discharger shall, within 10 days, report the findings to the Central Valley Water Board (in writing), and include a specific plan to resolve low DO results within 30 days or justify why the low DO is not a concern.

9. The Discharger shall design, construct, operate, and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. The operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

10. 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 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.

11. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications D.9 and D.10.

12. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:

    a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.

    b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.

    c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

    d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

13. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

14. Beginning January 2021, the Discharger shall monitor sludge accumulation in the wastewater treatment/storage ponds every five years (or less), and periodically remove sludge as necessary to maintain adequate storage capacity. If at any point the volume of sludge in a pond is estimated to exceed 10 percent of the pond volume, the Discharger shall complete a sludge cleanout within 12 months thereafter.

E. Groundwater Limitations

Release of waste constituents from any portion of the WWTP shall not cause

groundwater to:

1. Contain any of the specified constituents in a concentration statistically greater than the maximum allowable concentration tabulated below. The wells to which these requirements apply are specified in the MRP.

Table 20. Groundwater Limits

Constituent [1]	Maximum Allowable Concentration
Nitrate as Nitrogen	Concentration Protective of Beneficial Use
TDS	Concentration Protective of Beneficial Use

[1] Applies to all compliance monitoring wells listed in the MRP.

2. For all compliance monitoring wells, exceed a total coliform organism level of 2.2 MPN/100mL.

3. For all compliance monitoring wells, contain constituents in concentrations that exceed either the applicable Primary or Secondary MCLs established in Title 22.

4. For all compliance monitoring wells, contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

F. Land Application Area Specifications

1. Tailwater runoff and spray of wastewater shall not be discharged outside of the LAAs.

2. Vegetation (which may include pasture grasses, native grasses and trees, and/or ornamental landscaping) shall be grown in the LAAs.

3. Land application of wastewater shall be managed to minimize erosion within the LAAs.

4. The LAAs shall be managed to prevent breeding of mosquitoes or other vectors.

5. LAAs shall be designed, maintained, and operated to comply with the following setback requirements:

Table 21. Setbacks

Setback Definition	**Minimum Irrigation Setback (feet)**
Edge of use area to domestic water supply well	100
Flowing Stream	50
Ephemeral Stream Drainage	50
Property Line	100

Note: No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 100 feet of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.

6. LAAs 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 Discharger shall temporarily stop recycled water use immediately and implement corrective actions to ensure compliance with this Order.

7. Spray irrigation with wastewater is prohibited when wind speed (including gusts) exceeds 30 mph.

8. Sprinkler heads shall be designed, operated and maintained to create a minimum amount of mist.

9. Grazing of animals on the land application areas is prohibited unless the Executive Officer approves a *Livestock Grazing Management Plan* pursuant to Provision I.1.g.

10. Public contact with wastewater at the LAAs shall be controlled using fences, signs, and other appropriate means.

G. Water Recycling Specifications

1. For the purpose of this Order, “use area" means an area with defined boundaries where recycled water is used or discharged.

2. Notwithstanding the following requirements, the production, distribution, and use of recycled water shall conform to the DDW-approved Title 22, section 60323 Engineering Report.

3. The recycled water shall be at least disinfected secondary 23, recycled water as defined in Title 22, section 60301.

4. Recycled water shall be used in compliance with Title 22, section 60304. Specifically, uses of recycled water shall be limited to those set forth in Title 22, section(s) 60304(a), 60304(b), 60304(c), and 60304(d).

5. Tailwater runoff and spray of recycled water shall not be discharged outside of the use areas.

6. Application rates of recycled water to the use area shall be reasonable and shall consider soil, climate, and plant demand. In addition, application of recycled water and use of fertilizers shall be at a rate that takes into consideration nutrient levels in recycled water and nutrient demand by plants. As a means of discerning compliance with this requirement:

a. Crops or landscape vegetation shall be grown on the use areas, and cropping activities shall be sufficient to take up the nitrogen applied, including any fertilizers and manure.

b. Hydraulic loading of recycled water and supplemental irrigation water (if any) shall be managed to:

   i. Provide water only when water is needed and in amounts consistent with that need;

   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 crops for production. Leaching shall be managed to minimize degradation of groundwater, maintain compliance with the groundwater limitations of this Order, and prevent pollution.

7. No recycled water used for irrigation, or soil that has been irrigated with recycled water, shall come into contact with the edible portion of food crops that may be eaten raw by humans.

8. The Discharger shall conduct periodic inspections of the recycled water use areas to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Discharger shall temporarily stop recycled water use immediately and implement corrective actions to ensure compliance with this Order.

9. Discharge to the use areas shall not be performed during rainfall or when the ground is saturated.

10. Discharge of storm water runoff from the use areas to off-site land or surface water drainage courses is prohibited.

11. The irrigation with recycled water shall be managed to minimize erosion within the use areas.

12. The use areas shall be managed to prevent breeding of mosquitoes or other vectors.

13. Use areas and recycled water impoundments shall be designed, maintained, and operated to comply with the following setback requirements:

Table 22. Setback Definition

Setback Definition	Minimum Irrigation Setback (feet)
Edge of use area to domestic water supply well	100
Toe of recycled water impoundment berm to domestic water supply well	100
Edge of use area to residence	100
Edge of use area using spray irrigation to public park, playground, school yard, or similar place of potential public exposure	100

14. Spray irrigation with recycled water is prohibited when wind speed (including gusts) exceeds 30 mph.

15. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

16. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.

17. Public contact with recycled water shall be controlled using fences, signs, and other appropriate means.

18. Use areas that are accessible to the public shall be posted with signs that are visible to the public and no less than four inches high by eight inches wide. Signs shall be placed at all areas of public access and around the perimeter of all use areas and at above-ground portions of recycled water conveyances to alert the public of the use of recycled water. All signs shall display an international symbol similar to that shown in Attachment F, which is attached and forms part of this Order, and shall include the following wording:

"RECYCLED WATER – DO NOT DRINK"

"AGUA DE DESPERDICIO RECLAMADA – NO TOME"

Alternative language will be considered by the Executive Officer if approved by DDW.

19. All recycling equipment, pumps, piping, valves, and outlets shall be marked to differentiate them from potable water facilities. Quick couplers, if used, shall be different than those used in potable water systems.

20. Recycled water controllers, valves, and similar appurtenances shall be equipped with removable handles or locking mechanisms to prevent public access or tampering.

21. Hose bibs and unlocked valves, if used, shall not be accessible to the public.

22. No physical connection shall exist between recycled water piping and any potable water supply system (including domestic wells), or between recycled water piping and any irrigation well that does not have an approved air gap or reduced pressure principle device.

23. Horizontal and vertical separation between pipelines transporting recycled water and those transporting potable water shall comply with Title 22, section 64572, except to the extent that DDW has specifically approved a variance.

24. No physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water or auxiliary water source system.

25. A public water supply shall not be used as backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of California Code of Regulations, title 17, sections 7602(a) and 7603(a).

26. All recycled water piping and appurtenances in new installations and appurtenances in retrofit installations shall be colored purple or distinctively wrapped with purple tape in accordance with Health and Safety Code section 116815.

27. Any backflow prevention device installed to protect a public water system shall be inspected and maintained in accordance with California Code of Regulation, title 17, section 7605.

H. Solids Disposal Specifications

For the purposes of this Order, “sludge” means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes; “solid waste” refers to grit and screenings generated during preliminary treatment; “residual sludge” means sludge that will not be subject to further treatment at the WWTP; and “biosolids” refers to sludge that has been treated and tested and shown to be capable of being beneficially used as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities pursuant to federal and state regulations.

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

2. Any handling and storage of residual sludge, solid waste, and biosolids at the WWTP shall be temporary and controlled and contained in a manner that

minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.

3. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTPs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy this specification.

4. Use of biosolids as a soil amendment shall comply with applicable State Water Board or Regional Board WDRs, except in cases where a local (e.g., county) program has been authorized by the State Water Board or a Regional Board. In most cases, this will mean enrollment under the State Water Board's Order WQ 2004-12-DWQ (Biosolids General Order). To obtain coverage under the Biosolids General Order, the Discharger must file a separate complete Notice of Intent and receive a Notice of Applicability for each biosolids application project.

5. Use and disposal of biosolids shall comply with the self-implementing federal regulations of 40 C.F.R. part 503. If during the life of this Order, the State accepts primacy for implementation of part 503, the Central Valley Water Board may also initiate enforcement where appropriate.

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

I. Provisions

1. The following reports shall be submitted pursuant to Water Code section 13267 and shall be prepared as described in Provision I.5:

   a. By 1 July 2020, the Discharger shall submit a *Groundwater Monitoring Well Disinfection Completion Report.* The report shall describe the disinfection methods used and include follow-up sampling results. If bacteria are detected in the wells, additional work to control the discharge of coliform bacteria, well construction repairs, or other methods to prevent groundwater contamination with coliform will also be included in the report. If additional work is required, the report shall include an implementation schedule.

   b. By 31 December 2020, the Discharger shall submit a *Total Coliform Compliance Feasibility Study* for approval by the Executive Officer. The study will evaluate potential alternatives that could be implemented for the WWTP to bring the discharge into compliance to meet total coliform effluent limitations. The feasibly study will evaluate proposed alternatives and select the most applicable alternative to be implemented.

c. **Within 180 days after approval of the *Total Coliform Compliance Feasibility Study* (Provision I.1.b),** the Discharger shall submit a *Total Coliform Compliance Workplan* that describes the plans and schedule to implement the remedy selected in the feasibility study. The plan will also include a schedule for when the discharge will be compliance with total coliform effluent limitations in this Order.

d. **Within 90 days of completion of the selected remedy,** the Discharger shall submit a *Total Coliform Compliance Completion Report* that documents the completion of the selected remedy and any variations that occurred from the *Total Coliform Compliance Workplan*. The completion report will also include an appropriate number of wastewater samples with total coliform levels less than effluent limits. Effluent samples will be collected from the chlorine contact basin to verify that the discharge will meet the total coliform effluent limitations in this Order.

e. **By 31 December 2020**, the Discharger shall submit and implement a *Sludge Management Plan*. At a minimum, the plan shall describe:

   i. Estimate the amount of sludge and scum generated from the WWTP.

   ii. Describe how sludge, scum, and supernatant will be stored and disposed of to protect groundwater quality.

   iii. If sludge will be subject to further treatment, describe the treatment and storage requirements.

   iv. Describe cleaning of digesters or storage vessels and the treatment and disposal of the residuals. If drying of residuals is planned, describe how that will be performed to prevent nuisance odors, prevent vectors, and protect groundwater quality.

   v. Describe the estimated volume of the sludge in the ponds and how the sludge and build-up are addressed.

   The *Sludge Management Plan* shall be maintained at the treatment facility and shall be presented to the Regional Water Board staff upon request.

f. **By 31 December 2020**, the Discharger shall submit an *Inflow and Infiltration (I/I) Correction Workplan* that includes at a minimum the following:

   i. Identification of known I/I sources;

   ii. A detailed scope of work to identify and quantify other I/I sources (e.g., smoke testing, video surveying, manhole surveying, etc.);

   iii. A plan to prioritize retrofits and replacements to reduce I/I;

   iv. A discussion of options and preliminary unit cost estimates for correcting various sources of I/I;

v. Identification of minor repairs that will be performed in the field as problems are discovered; and

vi. A progress report describing the planned or completed actions will be submitted every six months, with each report due on the **1st day of the second month after the reporting period** (i.e., the January-June report is due August 1st and the July-December report is due February 1st.) The first progress report is **due 1 August 2020**.

g. **Within 30 days of the installation of staff gauges,** the Discharger shall submit a letter notifying the Central Valley Water Board of the completion of the installation of permanent staff gauges in Ponds 2 and 3 to measure freeboard, as required in Discharge Specifications D.9.

h. **At least 6 months prior to allowing livestock grazing on the irrigation fields,** the Discharger shall submit a *Livestock Grazing Management Plan* for approval by the Executive Officer. The report shall describe any operational and/or physical improvements made to the irrigation fields to ensure compliance with this Order. The report shall also include information on how the berms and other wastewater application site features at the irrigation fields will be managed to prevent damage caused by livestock grazing.

i. **At least 90 days prior to the use of Irrigation Field #2**, the Discharger shall submit a report documenting how the flows from Pond 4 to Irrigation Field #2 will be determined and the number of irrigation cannons to be used.

j. **At least 120 days prior to any pond expansions**, the Discharger shall submit a *Pond Expansion Work Plan*. The plan will describe the changes to be made to the pond(s) and an estimated schedule for completion.

k. **Within 60 days after the completion of any pond expansions,** the Discharger shall submit a *Pond Expansion Completion Report*. The report will describe the final pond dimensions and capacity and describe any other changes made to the pond(s). If a flow increase is requested, the Discharger shall also include a water balance supporting the requested flow increase, as required in Flow Limitations B.2.

2. If the Discharger proposes to receive hauled-in anaerobically digestible material for injection into an anaerobic digester, the Discharger shall notify the Central Valley Water Board and develop and implement standard operating procedures (SOPs) prior to initiation of the hauling. The SOPs shall address material handling (including unloading, screening, and other processing) prior to anaerobic digestion; transportation; spill prevention; and spill response. In addition, the SOPs shall address avoidance of the introduction of materials that could cause interference, pass-through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from the material prior to its introduction to the digester. The

Discharger shall provide training to its staff on the SOPs and shall maintain records for three years of each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of three years for the disposition solid waste segregated from the digester feed material and hauled off-site, including the disposal site location and quantity of solids transferred to each location.

3. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by 31 January.

   In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

4. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.

5. The Discharger shall comply with MRP R5-2019-0086 (incorporated herein) and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.

6. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements* (SPRRs) dated 1 March 1991 (incorporated herein).

7. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the

Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

8. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.

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

10. The Discharger shall implement the necessary legal authorities, programs, and controls to ensure that the following are not introduced to the treatment system:

    a. Wastes which create a fire or explosion hazard in the wastewater collection system or treatment works;

    b. Wastes which will cause corrosive structural damage to treatment works;

    c. Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;

    d. Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and/or loss of treatment efficiency;

    e. Heat in amounts that inhibit or disrupt biological activity in the treatment works unless the treatment works is designed to accommodate such heat;

    f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

    g. Any trucked or hauled wastewater or septage, except at points predesignated by the Discharger and subject to the above conditions.

11. The Discharger shall implement the legal authorities, programs, and control necessary to ensure that industrial discharges do not introduce pollutants into the wastewater collection system that, either alone or in conjunction with a discharge or discharges from other sources:

a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or

b. Inhibit or disrupt any treatment process or treatment system operations and either cause a violation of this Order or prevent water recycling, biosolids reuse, or sludge disposal.

12. The Discharger shall provide the requisite funding and personnel to implement the pretreatment program, conduct inspections and sampling and analysis of industrial discharges as needed and use any available legal means to ensure compliance with the pretreatment program.

13. The Discharger shall periodically review the pretreatment program and make any changes that are needed to ensure compliance with this Order. Within 90 days of the effective date, the Discharger shall report in writing any significant changes to the pretreatment program, as well as any new or significantly changed industrial discharges subject to the pretreatment program.

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

15. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.

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

17. The Discharger shall comply with the Sanitary Sewer System requirements set forth in Attachment G, which is incorporated herein.

18. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order.

19. At least 90 days prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

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

21. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

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

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

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

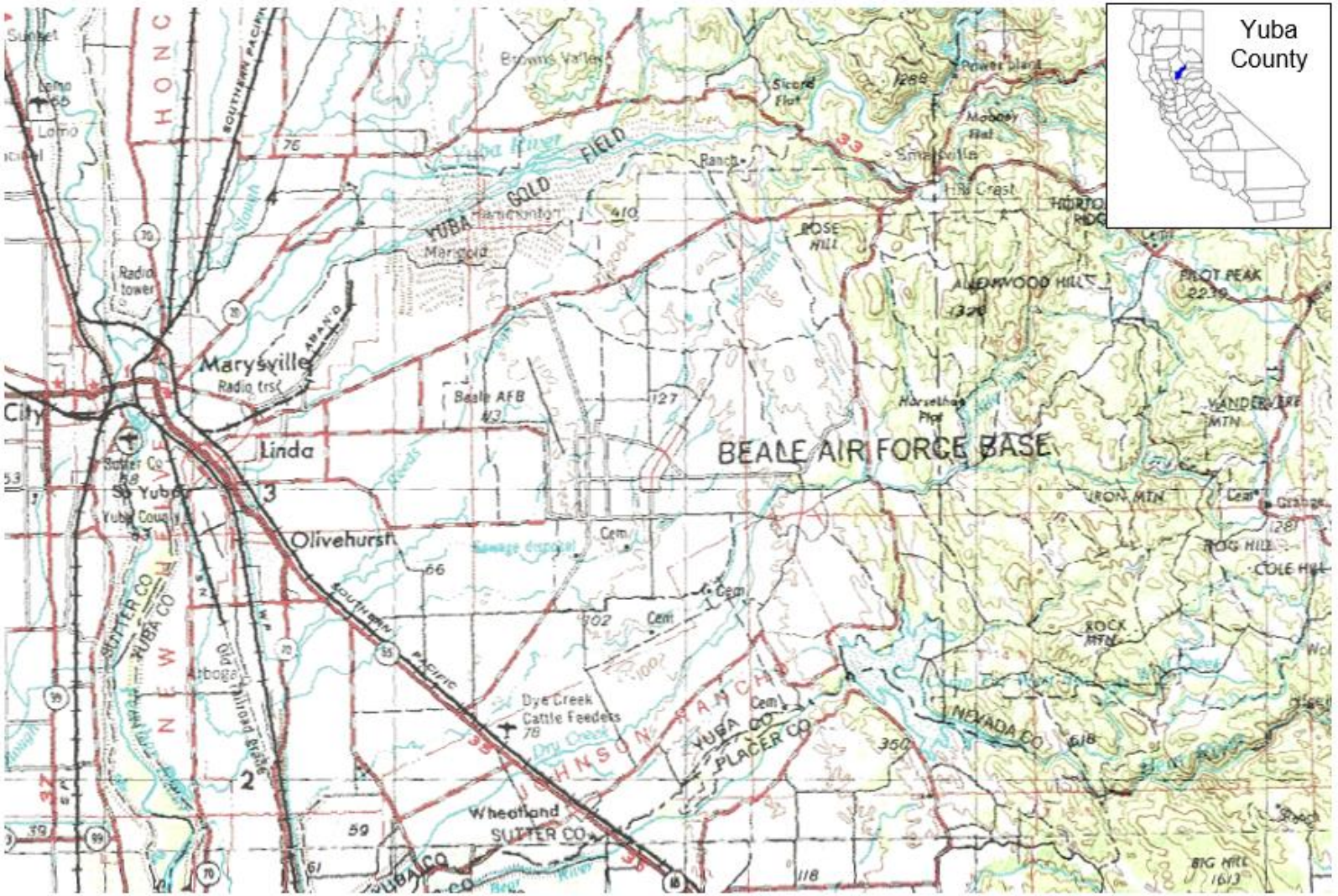
Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and Title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if 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. Laws and regulations applicable to filing petitions are available via the Water Boards' Webpage for Public Notices (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) and will be provided upon request.

I, PATRICK PULUPA, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 5 December 2019.

PATRICK PULUPA, Executive Officer

Attachments

Attachment A – Site Location Map
Attachment B – Site Features Map
Attachment C – Wastewater Flow Schematic
Attachment D – Groundwater Monitoring Well Locations Near Pond 4
Attachment E – Groundwater Monitoring Well Locations Near A-Street Pond
Attachment F – Recycled Water Symbol
Attachment G – Sanitary Sewer System Requirements

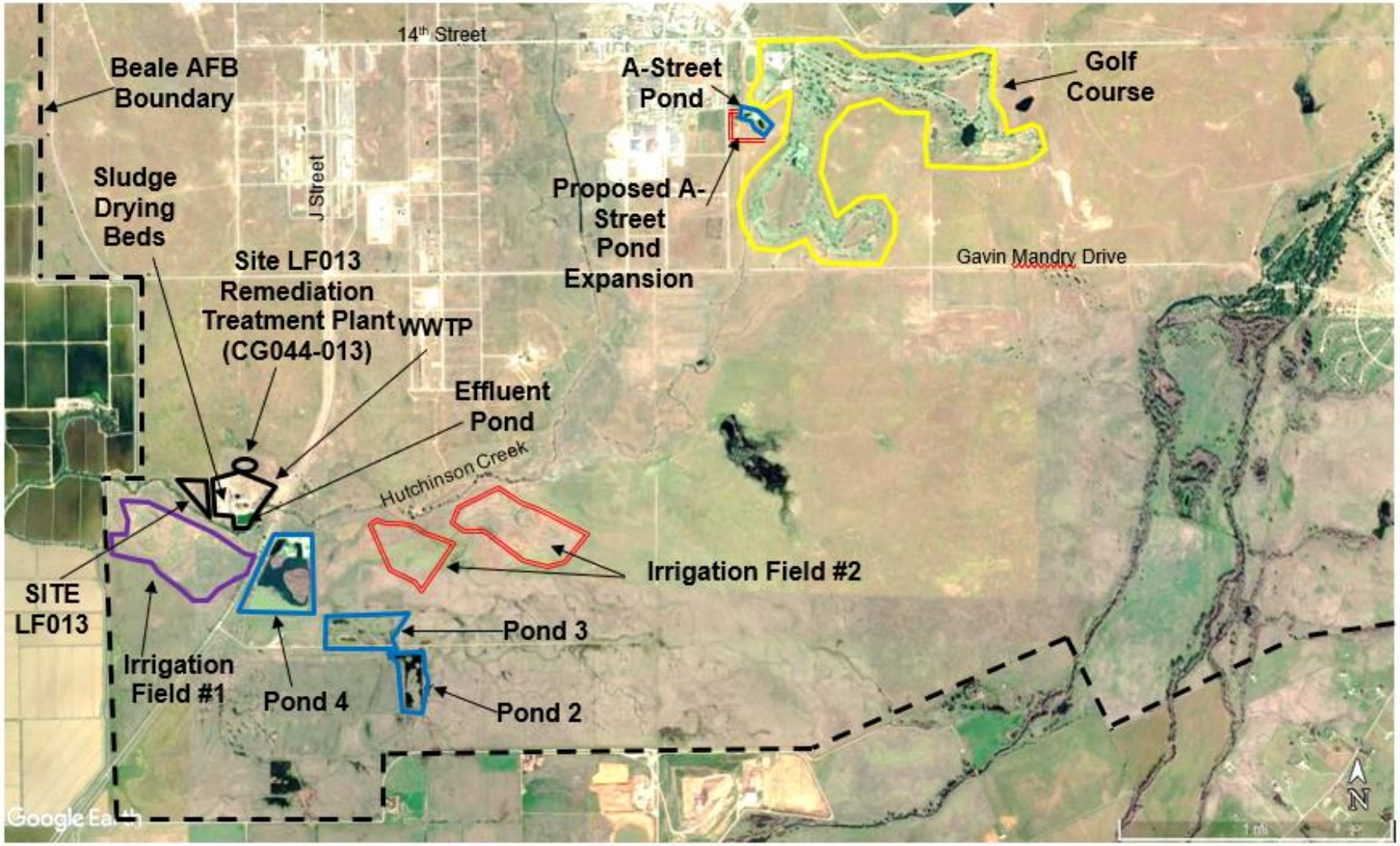


N

~ 1.5 miles

SITE LOCATION MAP

UNITED STATES AIR FORCE
BEALE AIR FORCE BASE WWTP
YUBA COUNTY



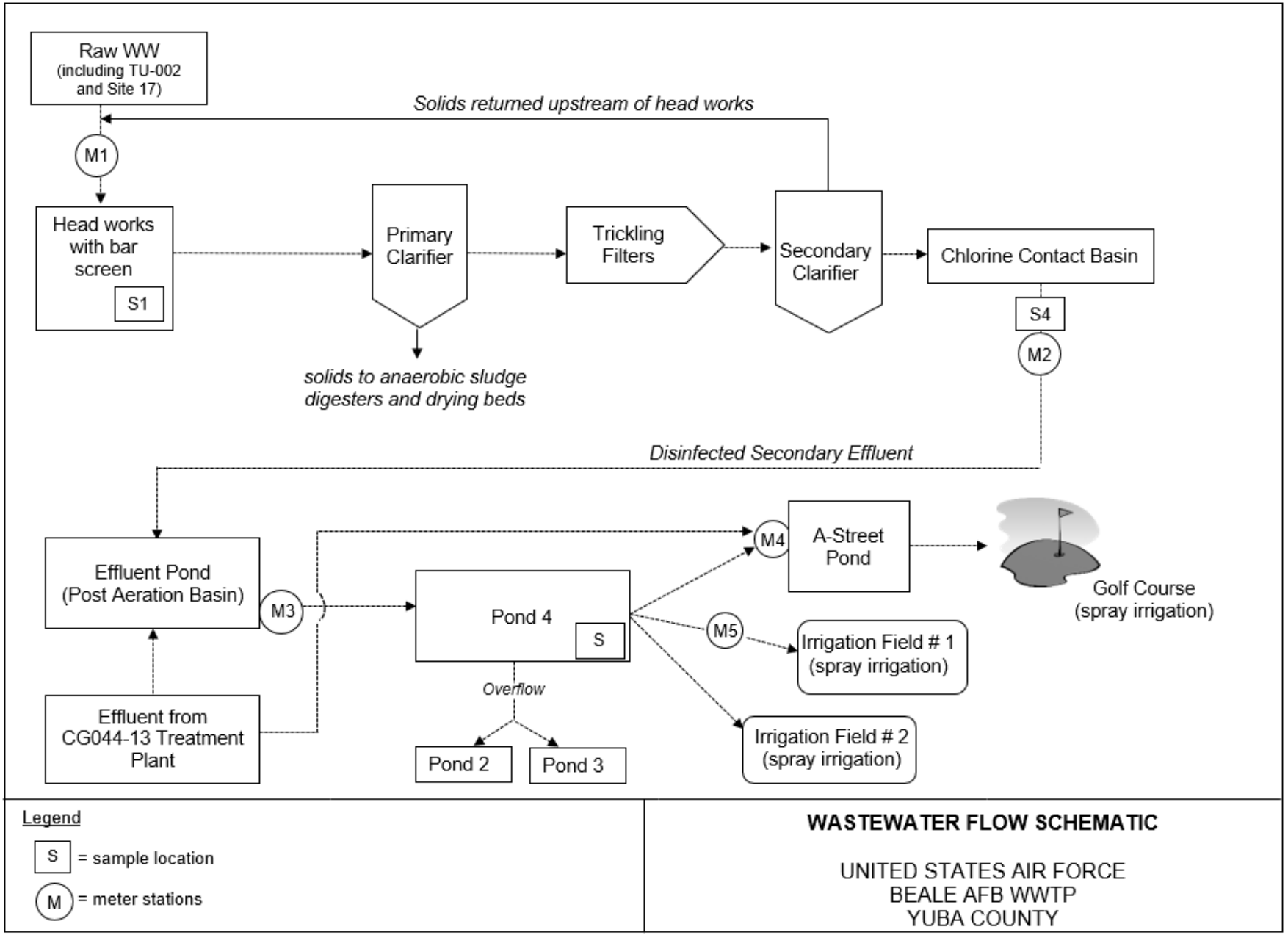
~ 0.5 miles

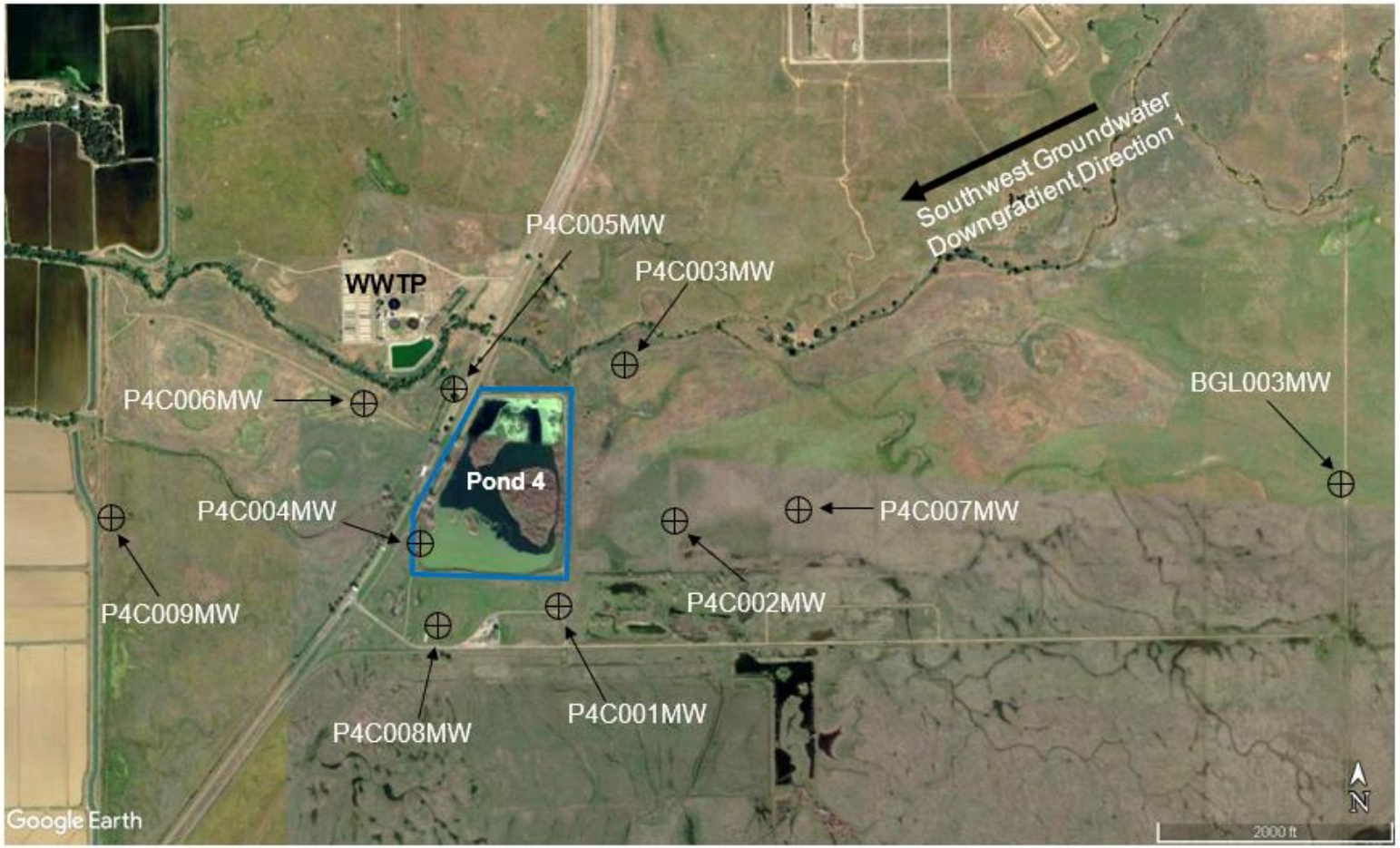
Note: All site feature locations are approximate.
Figure Reference: Google Earth, 2018

SITE FEATURES MAP

UNITED STATES AIR FORCE
BEALE AFB WWTP

YUBA COUNTY


Raw WW
(including TU-002
and Site 17)
Solids returned upstream of head works
M1
Head works
with bar
screen
S1
Primary
Clarifier
Trickling
Filters
Secondary
Clarifier
Chlorine Contact Basin
S4
M2
solids to anaerobic sludge
digesters and drying beds
Disinfected Secondary Effluent
Effluent Pond
(Post Aeration Basin)
M3
Pond 4
S
M4
A-Street
Pond
Golf Course
(spray irrigation)
M5
Irrigation Field # 1
(spray irrigation)
Overflow
Effluent from
CG044-13 Treatment
Plant
Pond 2
Pond 3
Irrigation Field # 2
(spray irrigation)
Legend
S = sample location
M = meter stations
WASTEWATER FLOW SCHEMATIC
UNITED STATES AIR FORCE
BEALE AFB WWTP
YUBA COUNTY



Legend

⊕ Monitoring well

Note:

Locations are approximate.

[1] Downgradient flow direction as documented in the 2nd Quarter 2018 Groundwater Monitoring Report

N W E S

~2,000 feet

GROUNDWATER MONITORING WELL LOCATIONS NEAR POND NO. 4

UNITED STATES AIR FORCE
BEALE AFB WWTP
YUBA COUNTY

Legend

⊕ Monitoring well

Note:
Locations are approximate.

N
W E
S

~700 feet

GROUNDWATER MONITORING WELL LOCATIONS NEAR A-STREET POND

UNITED STATES AIR FORCE
BEALE AFB WWTP
YUBA COUNTY

Drawing Reference: TITLE 22, CALIFORNIA CODE OF REGULATIONS	**RECYCLED WATER SYMBOL** UNITED STATES AIR FORCE BEALE AFB WWTP YUBA COUNTY	NO SCALE

ATTACHMENT G—SANITARY SEWER SYSTEM REQUIREMENTS

A. DEFINITIONS—Except as otherwise specified, definitions set forth in Water Code section 13000 et seq. shall apply to the requirements in this attachment. (See, e.g., Wat. Code, § 13050.)

Sanitary Sewer Overflow (SSO)—Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;

(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and

(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

Sanitary Sewer System—Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

SSO Reporting System–Online spill reporting system hosted, controlled, and maintained by the State Water Resources Control Board (State Water Board). The web address for this site is http://ciwqs.waterboards.ca.gov. This online database is maintained on a secure site and is controlled by unique usernames and passwords.

Untreated or Partially-Treated Wastewater–Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

B. PREVENTION, MITIGATION AND ELIMINATION OF OVERFLOWS

1. The Discharger shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the Discharger shall take all feasible steps to contain and mitigate the impacts of an SSO.

2. In the event of an SSO, the Discharger shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains into flood control channels or waters of the United States by

blocking the storm drainage system and by removing the wastewater from the storm drains.

3. All SSOs must be reported in accordance with **Sections C-D** herein.

4. When a sanitary sewer overflow occurs, the Discharger shall take all feasible steps and necessary remedial actions to (1) control or limit the volume of untreated or partially treated wastewater discharged, (2) terminate the discharge, and (3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.

   The Discharger shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:

   (a) Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;

   (b) Vacuum truck recovery of sanitary sewer overflows and wash down water;

   (c) Cleanup of debris at the overflow site;

   (d) System modifications to prevent another SSO at the same location;

   (e) Adequate sampling to determine the nature and impact of the release; and

   (f) Adequate public notification to protect the public from exposure to the SSO.

5. The Discharger shall properly, manage, operate, and maintain all parts of the sanitary sewer system, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.

6. The Discharger shall implement an **Operation & Maintenance Program (OMP)** that includes the following elements:

   (a) Maintenance of up-to-date map(s) of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;

(b) Plans for routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas.

(c) Development of a **Rehabilitation and Replacement Plan (RRP)** to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The RRP should provide for regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. The RRP should also focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects.

(d) Training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and

(e) Equipment and replacement part inventories, including identification of critical replacement parts.

7. The Discharger shall prepare (and, upon request, provide copies for Central Valley Water Board review), an **Overflow Emergency Response Plan (OERP)** identifying measures to protect public health and the environment. At minimum, the OERP must include the following:

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure an appropriate response to all overflows;

(c) Procedures to ensure prompt notification to the Central Valley Water Board and other potentially affected entities (e.g. county health agencies, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State.

(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the OERP and are appropriately trained;

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

(f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

C. NOTIFICATION REQUIREMENTS

Although Central Valley Water Board and State Water Board are not first responders, the following requirements are intended to ensure that the agencies that have first responder duties are notified in a timely manner in order to protect public health and beneficial uses of water.

Table 1—SSO Categories	
Category 1	Discharges of untreated or partially treated wastewater of any volume resulting from the Discharger's sanitary sewer system failure or flow condition that: (a) Reach surface water and/or reach a drainage channel tributary to a surface water; or (b) Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).
Category 2	Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from the Discharger's sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
Category 3	All other discharges of untreated or partially treated wastewater resulting from the Discharger's sanitary sewer system failure or flow condition.

Table 2–Notification, Reporting, Monitoring and Record-Keeping Requirements		
Notification to Cal OES	Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify the California Office of Emergency Services (Cal OES) and obtain a notification control number.	Call Cal OES at (800) 852-7550
Reporting	Category 1 SSOs: Submit certified report within 15 days of SSO end date. Category 2 SSOs: Submit certified report within 15 days of the SSO end date. Category 3 SSOs: Submit certified report within 30 days of the end of month in which SSO the occurred. SSO Technical Reports: Submit within 45 days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. “No Spill” Certifications: Certify that no SSOs occurred within 30 days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred.	Enter data into CIWQS Online SSO Database, certified by enrollee’s Legally Responsible Official(s).
Monitoring	Conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.

Table 2–Notification, Reporting, Monitoring and Record-Keeping Requirements		
Record-Keeping	SSO event records. Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. Collection system telemetry records if relied upon to document and/or estimate SSO Volume.	Self-maintained records shall be available during inspections or upon request.

1. For any Category 1 SSO greater than or equal to 1,000 gallons that results in a discharge to a surface water or spilled in a location where it probably will be discharged to surface water, either directly or by way of a drainage channel or MS4, the Discharger shall, as soon as possible, but not later than two (2) hours after (A) the Discharger has knowledge of the discharge, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures, notify the California State Office of Emergency Services (Cal OES) and obtain a notification control number.

2. To satisfy notification requirements for each applicable SSO, the Discharger shall provide the information requested by Cal OES before receiving a control number. Spill information requested by Cal OES may include:

    i. Name of person notifying Cal OES and direct return phone number.

    ii. Estimated SSO volume discharged (gallons).

    iii. If ongoing, estimated SSO discharge rate (gallons per minute).

    iv. SSO Incident Description:

        a. Brief narrative.

        b. On-scene point of contact for additional information (name and cell phone number).

        c. Date and time enrollee became aware of the SSO.

        d. Name of sanitary sewer system agency causing the SSO.

e. SSO cause (if known).

v. Indication of whether the SSO has been contained.

vi. Indication of whether surface water is impacted.

vii. Name of surface water impacted by the SSO, if applicable.

viii. Indication of whether a drinking water supply is or may be impacted by the SSO.

ix. Any other known SSO impacts.

x. SSO incident location (address, city, state, and zip code).

3. Following the initial notification to Cal OES and until such time that the Discharger certifies the SSO report in the CIWQS Online SSO Database, the Discharger shall provide updates to Cal OES regarding substantial changes to the estimated volume of untreated or partially treated sewage discharged and any substantial change(s) to known impact(s).

D. REPORTING REQUIREMENTS

1. **CIWQS Online SSO Database Account:** The Discharger shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS. These accounts allow controlled and secure entry into the CIWQS Online SSO Database.

2. **SSO Mandatory Reporting Information:** For reporting purposes, if one SSO event results in multiple appearance points in a sewer system asset, the Discharger shall complete one SSO report in the CIWQS Online SSO Database which includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that caused the SSO, and provide descriptions of the locations of all other discharge points associated with the SSO event.

3. **SSO Categories**

i. **Category 1**–Discharges of untreated or partially treated wastewater of any volume resulting from the Discharger's sanitary sewer system failure or flow condition that:

a. Reach surface water and/or reach a drainage channel tributary to a surface water; or

b. Reach a MS4 and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).

ii. **Category 2**–Discharges of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from the Discharger's sanitary sewer system failure or flow condition that does not reach a surface water, a drainage channel, or the MS4 unless the entire SSO volume discharged to the storm drain system is fully recovered and disposed of properly.

iii. **Category 3**–All other discharges of untreated or partially treated wastewater resulting from the Discharger's sanitary sewer system failure or flow condition.

4. **Timeframes for Reporting SSOs to CIWQS**

i. **Category 1 SSOs and Category 2 SSOs–**A certified report shall be submitted via the CIWQS Online SSO Database within 15 calendar days of the end date of the SSO. Reports shall contain the minimum information specified below in **Table 3**.

ii. **Category 3 SSOs**–A certified report shall be submitted via the CIWQS Online SSO Database within 30 calendar days after the end of the calendar month in which the SSO occurs (e.g., all Category 3 SSOs occurring in the month of February shall be entered into the database and certified by March 30). Reports shall contain the minimum information specified below in **Table 3**.

iii. **"No Spill" Certification**–If there are no SSOs during the calendar month, the Discharger shall either:

(1) Certify, within 30 calendar days after the end of each calendar month, a "No Spill" certification statement in the CIWQS Online SSO Database certifying that there were no SSOs for the designated month; or

(2) Certify, quarterly within 30 calendar days after the end of each quarter,[1] "No Spill" certification statements in the CIWQS Online SSO Database certifying that there were no SSOs for each month in the quarter being reported on.

iv. **Amended SSO Reports–**The Discharger may update or add additional information to a certified SSO report within 120 calendar days after the SSO end date by amending the report or by adding an attachment to the SSO report in the CIWQS Online SSO Database. After 120 days, the Discharger may contact the SSO Program Manager to request to amend an SSO report if the Discharger also submits justification for why the additional information was not available prior to the end of the 120 days.

5. **SSO Technical Report**

The Discharger shall submit an **SSO Technical Report** in the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. This report shall include:

i. **Causes and Circumstances of the SSO:**

a. Complete and detailed explanation of how and when the SSO was discovered.

b. Diagram showing the SSO failure point, appearance point(s), and final destination(s).

c. Detailed description of the employed methodology and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.

d. Detailed description of the cause(s) of the SSO.

e. Copies of original field crew records used to document the SSO.

f. Historical maintenance records for the failure location.

ii. **Response to SSO:**

[1] For quarterly reporting, the quarters are January-March (Q1), Q2-April-June (Q2), July-September (Q3) and October-December (Q4).

a. Chronological narrative description of all actions taken by enrollee to terminate the spill.

b. Explanation of how the OERP was implemented to respond to and mitigate the SSO.

c. Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

iii. **Water Quality Monitoring:**

a. Description of all water quality sampling activities conducted including analytical results and evaluation of the results.

b. Detailed location map illustrating all water quality sampling points.

6. **CIWQS Online SSO Database Unavailability**

In the event that the CIWQS Online SSO Database is not available, the Discharger must fax or e-mail all required information to Central Valley Water Board's office in accordance with the time schedules identified herein. In such event, the Discharger must also enter all required information into the CIWQS Online SSO Database when the database becomes available.

7. **Mandatory Information to be Included in CIWQS Online SSO Reporting—**

The Discharger shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS which can be reached at CIWQS@waterboards.ca.gov or by calling (866) 792-4977, Monday-Friday, 8am-5pm. These accounts will allow controlled and secure entry into the CIWQS Online SSO Database.

Contents of SSO Reports—At a minimum, the mandatory information specified in **Table 3** shall be reported prior to finalizing and certifying an SSO report for each category of SSO:

Table 3—Required Information in Certified SSO Reports		**SSO Category**		
		1	**2**	**3**
A-1	SSO Contact Information: Name and telephone number of contact person who can answer specific questions about the SSO being reported.	✓	✓	✓
A-2	SSO Location Name.	✓	✓	✓
A-3	Location of the overflow event (SSO) by entering GPS coordinates. If a single overflow event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the SSO appearance point explanation field.	✓	✓	✓
A-4	Whether or not the SSO reached surface water, a drainage channel, or entered and was discharged from a drainage structure.	✓	✓	✓
A-5	Whether or not the SSO reached a municipal separate storm drain system.	✓	✓	✓
A-6	Whether or not the total SSO volume that reached a municipal separate storm drain system was fully recovered.	✓	✓	✓
A-7	Estimate of the SSO volume, inclusive of all discharge point(s).	✓	✓	✓
A-8	Estimate of the SSO volume that reached surface water, a drainage channel, or was not recovered from a storm drain.	✓	✓	✓
A-9	Estimate of the SSO volume recovered (if applicable).	✓	✓	✓
A-10	Number of SSO appearance point(s).	✓	✓	✓
A-11	Description and location of SSO appearance point(s). If a single sanitary sewer system failure results in multiple SSO appearance points, each appearance point must be described.	✓	✓	✓
A-12	SSO start date and time.	✓	✓	✓
A-13	Date and time the Discharger was notified of, or self-discovered, the SSO.	✓	✓	✓
A-14	Estimated operator arrival time.	✓	✓	✓
A-15	For spills greater than or equal to 1,000 gallons, the date and time Cal OES was called.	✓	-	-
A-16	For spills greater than or equal to 1,000 gallons, the Cal OES control number.	✓	-	-
B-1	Description of SSO destination(s).	✓	✓	✓

Table 3—Required Information in Certified SSO Reports		SSO Category		
		1	2	3
B-2	SSO end date and time.	✓	✓	✓
B-3	SSO causes (mainline blockage, roots, etc.).	✓	✓	✓
B-4	SSO failure point (main, lateral, etc.).	✓	✓	✓
B-5	Whether or not the spill was associated with a storm event.	✓	✓	✓
B-6	Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the overflow; and a schedule of major milestones for those steps.	✓	✓	-
B-7	Description of spill response activities.	✓	✓	-
B-8	Spill response completion date.	✓	✓	-
B-9	Whether or not there is an ongoing investigation, the reasons for the investigation and the expected date of completion.	✓	✓	-
B-10	Whether or not a beach closure occurred or may have occurred as a result of the SSO.	✓	-	-
B-11	Whether or not health warnings were posted as a result of the SSO.	✓	-	-
B-12	Name of beach(es) closed and/or impacted. If no beach was impacted, NA shall be selected.	✓	-	-
B-13	Name of surface water(s) impacted.	✓	-	-
B-14	If water quality samples were collected, identify parameters the water quality samples were analyzed for. If no samples were taken, NA shall be selected.	✓	-	-
B-15	If water quality samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA shall be selected.	✓	-	-
B-16	Description of methodology(ies) and type of data relied upon for estimations of the SSO volume discharged and recovered.	✓	-	-
B-17	SSO Certification: Upon SSO Certification, the CIWQS Online SSO Database will issue a final SSO identification (ID) number.	✓	✓	✓

E. MONITORING REQUIREMENTS

The Discharger shall develop and implement an **SSO Water Quality Monitoring Program** to assess impacts from SSOs to surface waters in which 50,000

gallons or greater are spilled to surface waters. The SSO Water Quality Monitoring Program, shall, at a minimum:

1. Contain protocols for water quality monitoring.

2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.).

3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.

4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.

5. Within 48 hours of the Discharger becoming aware of the SSO, require water quality sampling for, at a minimum, the following constituents:

    i. Ammonia

    ii. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction which may include total and fecal coliform, enterococcus, and e-coli.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2019-0086
FOR
UNITED STATES AIR FORCE
BEALE AIR FORCE BASE WASTEWATER TREATMENT PLANT
YUBA COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring influent wastewater, treated effluent, treatment and disposal ponds, groundwater, sludge, and water supply. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field testing instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

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

Laboratory analytical procedures shall comply with the methods and holding times specified below (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 U.S. Environmental Protection Agency or the State Water Resources Control Board’s Environmental 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 concentrations that implement applicable water quality objectives/limits for the constituents to be analyzed.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least 8 consecutive groundwater monitoring events, the Discharger may request this MRP be revised to reduce monitoring frequency, constituent analyses, or monitoring parameters. The proposal must include adequate technical justification for reduction in monitoring frequency. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP.

FLOW MONITORING

Influent flow to the WWTP shall be performed at the headworks and include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Influent Daily Flow (Flow Meter Station 1 [M1]) [1]	gallons	Continuous Meter	Daily	Quarterly
BOD_5 [2]	mg/L	Grab/ Composite [3]	Weekly	Quarterly

[1] Location of Meter Station 1 (M1) is shown on Attachment C in the WDRs.

[2] BOD denotes 5-day Biochemical Oxygen Demand.

[3] Grab/Composite indicates samples may be collected by composite sampler or grab method.

Wastewater flows shall also be monitored at the following locations as shown below. Any new flow meters added to the system shall be monitored as shown in the table.

Location [1]	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow Meter Station 2 (M2)	gallons	Continuous Meter	Daily	Quarterly
Flow Meter Station 3 (M3)	gallons	Continuous Meter	Daily	Quarterly
Flow Meter Station 4 (M4)	gallons	Continuous Meter	Daily	Quarterly
Flow Meter Station 5 (M5)	gallons	Continuous Meter	Daily	Quarterly

1 Flow meter locations are shown on Attachment C.

EFFLUENT MONITORING

Effluent from the chlorine basin shall be monitored as specified below.

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
pH	Standard Units	Grab	Monthly	Quarterly
Electric Conductivity	µmhos/cm	Grab	Monthly	Quarterly
Total Coliform Organisms	MPN/100mL	Grab	Twice Weekly	Quarterly

POND 4 MONITORING

Pond 4 shall be monitored as specified below:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Dissolved Oxygen[1]	mg/L	Grab	Weekly	Quarterly
Freeboard	0.1 feet	Measurement	Weekly	Quarterly
Odors	--	Observation	Weekly	Quarterly
Berm condition[2]	--	Observation	Monthly	Quarterly
pH	Standard Units	Grab	Weekly	Quarterly
BOD_5	mg/L	Grab	Monthly	Quarterly
Sodium	mg/L	Grab	Monthly	Quarterly
Chloride	mg/L	Grab	Monthly	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Quarterly
TKN	mg/L	Grab	Monthly	Quarterly
Total Nitrogen	mg/L	Grab	Monthly	Quarterly
Standard Minerals [2,3]	mg/L	Grab	Annually	Annually

[1] Samples shall be collected from locations that would adequately represent wastewater quality.

[2] Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe.

[3] Standard minerals shall include, at a minimum, the following: arsenic, boron, calcium, magnesium, potassium, sulfate, dissolved iron, dissolved manganese, total alkalinity (including alkalinity series), and hardness.

In addition, the Discharger shall inspect the condition of the pond once per week and document visual observations. Notations shall include observations of:

a. Presence of weeds in the water or along the berm;

b. Accumulations of dead algae, vegetation, scum, or debris on the pond surface;

c. Animal burrows in the berms, and

d. Flies or mosquitoes in the water or at the water surface.

WASTEWATER POND MONITORING

Wastewater ponds, including the Effluent Pond, A-Street Pond, and Ponds 2 and 3, shall be monitoring as specified below. Ponds 2 and 3 are required to be monitoring only when wastewater and/or storm water are present in the ponds.

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Dissolved Oxygen [1]	mg/L	Grab	Weekly	Quarterly
Freeboard	0.1 feet	Measurement	Weekly	Quarterly
Odors	--	Observation	Weekly	Quarterly
Berm condition [2]	--	Observation	Monthly	Quarterly
pH	Standard Units	Grab	Weekly	Quarterly

[1] Samples shall be collected from locations that would adequately represent wastewater quality.

[2] Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe.

In addition, the Discharger shall inspect the condition of the ponds once per week and document visual observations. Notations shall include observations of:

a. Presence of weeds in the water or along the berm;
b. Accumulations of dead algae, vegetation, scum, or debris on the pond surface;
c. Animal burrows in the berms, and
d. Flies or mosquitoes in the water or at the water surface.

LAND APPLICATION AREA MONITORING

A. Field Inspections

The Dischargers shall inspect the LAAs at least once weekly during irrigation events, and observations from those inspections shall be documented for inclusion in the quarterly monitoring reports. The following items shall be documented for each check or field to be irrigated on that day:

1. Berm condition;
2. Condition of each standpipe and flow control valve (if applicable);
3. Condition of all ditches used for the conveyance of wastewater and tailwater;
4. Ponding;
5. Condition of tailwater ditches and potential runoff to off-site areas;
6. Potential and actual discharge to surface water; and
7. Odors that have the potential to be objectionable at or beyond the property boundary.

Temperature, wind direction, humidity, and other relevant field conditions shall also be observed and recorded. The notations shall also document any corrective actions taken based on observations made. A copy of entries made in the log shall be submitted as part of the Quarterly Monitoring Report.

B. Routine Monitoring

The Dischargers shall perform the following routine monitoring and loading calculations during all months when land application occurs and shall present the data in the Quarterly and Annual Monitoring Reports.

Constituent	Units	Measurement	Measurement Frequency	Reporting Frequency
Precipitation	0.1 inch	Rain Gauge [1]	Daily	Quarterly
Irrigation fields	--	Observation	Daily	Quarterly
Hydraulic Loading Rate (from each source)	inch	Calculated [2]	Daily	Quarterly

[1] Data obtained from the nearest National Weather Service rain gauge or from the rain gauge located near the Flightline and maintained by Beale AFB Weather Flight are acceptable.

[2] Rate shall be calculated for each LAA field. Volumes can be estimated based on the duration of flow and the daily flow rates for each field. Calculations and assumptions shall be clearly documented.

GROUNDWATER MONITORING

The Discharger shall maintain the groundwater monitoring well network. If a groundwater monitoring well is dry for more than four consecutive sampling events or is damaged, the Discharger shall submit to the Central Valley Water Board a workplan and proposed time schedule for its replacement, and the well shall be replaced following approval of the workplan. Alternatively, the Discharger shall submit a report with supporting evidence that a replacement well is not needed.

Prior to construction of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new monitoring wells shall be appropriately incorporated into monitoring conducted under this MRP and shall be monitored on a semiannual basis for a minimum of eight consecutive sampling events before a reduction in monitoring frequency, parameters, or constituents can be considered.

The groundwater monitoring program applies to groundwater monitoring wells tabulated below and any wells subsequently installed under approval of the Central Valley Water Board.

Location	Monitoring Well	Well Function
Pond 4	P4C001MW	Upgradient
Pond 4	P4C002MW	Upgradient
Pond 4	P4C003MW	Upgradient

Location	Monitoring Well	Well Function
Pond 4	P4C004MW	**Compliance**
Pond 4	P4C005MW	**Compliance**
Pond 4	P4C006MW	**Compliance**
Pond 4	P4C007MW	Upgradient
Pond 4	P4C008MW	**Compliance**
Pond 4	P4C009MW	**Compliance**
A-Street Pond	PA01	**Compliance**
A-Street Pond	PA02	**Compliance**
A-Street Pond	PA03	**Compliance**
A-Street Pond	PA04	**Compliance**
Background	BGL003MW	Background

Prior to sampling, depth to groundwater elevations shall be measure and the wells shall be purged at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

Constituent	Units	Sample Type	Sampling Frequency	Reporting Frequency
Depth to Groundwater	0.01 feet	Measurement	Semi-annually	Annually
Groundwater Elevation [1]	0.01 feet	Calculated	Semi-annually	Annually
Gradient	feet/feet	Calculated	Semi-annually	Annually
Gradient Direction	Degrees	Calculated	Semi-annually	Annually
EC	µmhos/cm	Grab	Semi-annually	Annually
TDS	mg/L	Grab	Semi-annually	Annually
Nitrate as Nitrogen	mg/L	Grab	Semi-annually	Annually
TKN	mg/L	Grab	Semi-annually	Annually
pH	pH units	Grab	Semi-annually	Annually
Chloride	mg/L	Grab	Semi-annually	Annually
Sodium	mg/L	Grab	Semi-annually	Annually
Total Coliform Organisms	MPN/100 mL	Grab	Semi-annually	Annually
Standard Minerals [2,3]	mg/L	Grab	Annually	Annually

[1] Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and a surveyed reference elevation.

[2] Samples shall be filtered prior to preservation using a 0.45 micron filter.

[3] Standard Minerals shall include, at a minimum, the following elements/compounds: arsenic, aluminum, boron, calcium, magnesium, potassium, sulfate, dissolved iron, dissolved manganese, total alkalinity (including alkalinity series), and hardness.

GROUNDWATER LIMITATIONS

The Groundwater Limitations set forth in Section E of WDRs Order R5-2019-0086 shall apply to the specific compliance monitoring wells tabulated below. This table is subject to revision by the Executive Officer following construction of any new compliance monitoring wells.

Constituent	Groundwater Limitation	Compliance Wells
TDS	1,000 mg/L	P4C004MW, P4C005MW, P4C006MW, P4C008MW, P4C009MW, PA01-PA04
Nitrate as Nitrogen	10 mg/L	P4C004MW, P4C005MW, P4C006MW, P4C008MW, P4C009MW, PA01-PA04
Total Coliform Organism	2.2 MPN/100 mL [1]	P4C004MW, P4C005MW, P4C006MW, P4C008MW, P4C009MW, PA01-PA04

[1] Total coliform organism level shall not exceed 2.2 MPN/100mL.

If groundwater quality performed pursuant to this MRP shows that an exceedance of the Groundwater Limitation is occurring, the Discharger shall submit a technical evaluation of the reason for the exceedance and a discussion on possible mitigation measures that could be taken.

BPTC Evaluation Workplan that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the Discharger's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent that exceeds a Groundwater Limitation, as required per Provision H.2 of WDRs Order R5-2019-0086.

Groundwater Trigger Concentrations

The following groundwater trigger concentration is intended only to serve as a means of assessing whether the discharge might potentially cause a violation of one or more of the Groundwater Limitations of the WDRs at some later date.

Constituent	Trigger Concentration (mg/L)	Compliance Wells
TDS	500 mg/L	P4C004MW, P4C005MW, P4C006MW, P4C008MW, P4C009MW, PA01-PA04

If the annual evaluation of groundwater quality performed pursuant to this MRP shows that the annual average of the trigger concentration has been exceeded in a compliance well listed above during the calendar year, the Discharger shall submit one or both of the following

technical reports by **1 May of the following calendar year** (i.e., if the trigger concentration is exceeded for calendar year 2022, the appropriate report is due by 1 May 2023):

a. A technical evaluation of the reason[s] for the concentration increase[s] and a technical demonstration that, although the concentration has increased more than expected in one or more compliance wells, continuing the discharge without additional treatment or control will not result in exceedance of the applicable groundwater limitation (1,000 mg/L).

SLUDGE MONITORING

Sludge layer thickness in all ponds shall be reported in the Annual Report. A composite sample of sludge shall be collected when sludge is removed from the ponds for disposal in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and analyzed for cadmium, copper, nickel, chromium, lead, and zinc.

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

REPORTING

All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to the following address:

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

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any correspondence used to transmit documents to this office:

Facility:	Beale Air Force Base Wastewater Treatment Plant
County:	Yuba
Program:	Non-15 Compliance
Order:	R5-2019-0086
CIWQS Place ID:	209007

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

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

Daily, twice weekly, weekly, and monthly monitoring data shall be reported in quarterly monitoring reports. Quarterly reports shall be submitted to the Regional Board on the **1st day of the second month after the quarter ends** (i.e., the January-March Quarterly Report is due May 1st.). At a minimum, the reports shall include:

1. Results of influent, effluent, pond monitoring, flow monitoring, and land application area monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. If requested by staff, copies of laboratory analytical report(s); and
4. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Annual Monitoring Reports

Annual Monitoring Reports shall be submitted to the Central Valley Water Board by **1 February** each year and shall include:

Effluent Flow Monitoring

1. Total annual effluent flow, measured at meter station 3, and determination of compliance with the annual flow limitation of the WDRs.

Groundwater Monitoring

1 Results of groundwater monitoring;

2 A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before,

during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;

3 Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;

4 A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal tends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);

5 A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;

6 Summary data tables of historical and current water table elevations and analytical results;

7 A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and

8 Copies of laboratory analytical report(s) for groundwater monitoring.

Sludge Monitoring

1. The results of sludge monitoring and sampling.

A letter transmitting the self -monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

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

I, PATRICK PULUPA, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Monitoring and Reporting Program issued by the California Regional Water Quality Control Board, Central Valley Region on 5 December 2019.

PATRICK PULUPA, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
ORDER R5-2019-0086
WASTE DISCHARGE REQUIREMENTS
FOR
UNITED STATES AIR FORCE
BEALE AIR FORCE BASE WASTEWATER TREATMENT PLANT
YUBA COUNTY

INFORMATION SHEET

Facility Description

The WWTP is regulated under WDRs Order 5-01-087, R5-2004-0045, and R5-2009-0060, adopted on 27 April 2001, 23 April 2004, and 12 June 2009, respectively. The Orders prescribe requirements for the treatment of treated domestic and industrial wastewater discharged to land application areas (LAAs), which consist of a restricted access, on-base golf course and irrigation fields.

The wastewater treatment plant collects, treats, and disposes domestic and industrial wastewater from 800 on-base buildings. The WWTP consists of headworks, clarifiers, trickling filters, a chlorination unit, effluent ponds, and LAAs. The wastewater is treated to disinfected secondary-23 recycled water requirements. Annual influent flow rates ranged from 107 million gallons (MG) to 230 MG between 2015 and 2017.

Two groundwater remediation treatment systems, TU-002 and CG041-017, discharge treated groundwater directly to the sanitary sewer collection system. The systems are operated the Air Force Civil Engineer Center (AFCEC), with oversight by the Central Valley Water Board, Department of Toxic Substances Control (DTSC), and other regulatory agencies. Effluent from the remediation systems is sampled prior to discharging into the sewer system. Both remediation systems are designed to capture any untreated water passing through the remediation system due to system failures, which prevents untreated groundwater from discharging to the sewer system.

Effluent from the treatment plant is discharged to a lined effluent pond. A significant source of influent flow to the effluent pond, in addition to the effluent from the wastewater treatment plant, is from groundwater remediation treatment plant Site CG044-013, located at Site 13, which was constructed to remediate trichloroethene in groundwater. The remediation system is operated by the AFCEC, with oversight by the Central Valley Water Board, DTSC, and other regulatory agencies. The groundwater remediation plant was constructed in 1994 and consists of 15 groundwater extraction wells. The remediation system includes an air stripper, controlled by a SCADA system. The system cannot run without all components of the other systems being active, (i.e. the extraction pumps cannot operate without the air stripper blowers and conveyance pumps operating). This prevents a release of untreated water to the effluent pond. The remediation system can also discharge directly into the A-Street Pond, bypassing the

effluent pond and Pond 4. Effluent from the remediation treatment system is of higher quality than effluent from the WWTP.

The effluent pond discharges to Pond 4, which is unlined and used for storage. The wastewater in Pond 4 is either discharged to the A-Street Pond, where it is used to irrigate a restricted access, on-base golf course, or is used for irrigation at two irrigation fields. To maintain sufficient capacity in Pond 4, unlined Ponds 2 and 3 can be used as needed to meet the required two feet of freeboard in Pond 4. Wastewater discharged to Ponds 2 and 3 is pumped back into Pond 4 once the capacity issue has been resolved.

Groundwater Conditions

Groundwater beneath Pond 4 ranges between 15 feet to 33 feet below ground surface (bgs). Near the A-Street Pond and the golf course, groundwater ranges from 27 feet to 33 feet bgs. Localized flow directions can vary due to pumping of groundwater for domestic use and groundwater remediation projects. Based on the Second Quarter 2018 Groundwater monitoring report, groundwater flows southwest near Pond 4. Groundwater flow directions fluctuate near the A-Street Pond and golf course; therefore, flow directions around the A-Street Pond were not used in the groundwater evaluation.

The groundwater monitoring network for the WWTP consists of fourteen wells, located around Pond 4 and the A-Street Pond. Monitoring well construction details are shown below.

Table 1. Monitoring Well Details

Well ID	Location Monitored	Installation Date	Screen Interval (feet bgs)	Depth to Groundwater (feet)	Groundwater Elevation (famsl) 1
P4C001MW	Pond 4	2006	22-42	26.1	76.5
P4C002MW	Pond 4	2006	13-33	13.07	82.78
P4C003MW	Pond 4	2006	17-37	17.88	78.42
P4C004MW	Pond 4	2006	25-45	25.00	76.36
P4C005MW	Pond 4	2006	12-32	5.53	88.44
P4C006MW	Pond 4	2006	10-30	8.52	81.74
P4C007MW	Pond 4	2008	16-36	13.71	84.12
P4C008MW	Pond 4	2008	28-48	26.12	72.6
P4C009MW	Pond 4	2008	25-45	33.84	60.25
PA01	A-Street Pond	2008	25-45	38.89	94.49
PA02	A-Street Pond	2008	24-44	31.19	92.28
PA03	A-Street Pond	2008	15-35	19.69	103.89

Well ID	Location Monitored	Installation Date	Screen Interval (feet bgs)	Depth to Groundwater (feet)	Groundwater Elevation (famsl) 1
PA04	A-Street Pond	2008	20-40	26.59	100.96
BGL003MW	Background	2008	45-65	13.8	94.86

1. Second Quarter 2018 Groundwater Monitoring Report
2. bgs = below ground surface
3. famsl = feet above mean sea level

Shallow groundwater quality, with respect to TDS and nitrate as nitrogen, does not appear to be impacted by discharges from the WWTP. However, total coliform levels have been reported in monitoring wells at levels greater than the concentration protective of beneficial use (<2.2 MPN/100mL over any seven-day period). Coliform in the effluent from the chlorine contact basin have also exceeded concentrations protective of beneficial use, indicating the discharge has likely degraded groundwater. This Order requires the Discharger to submit a *Groundwater Monitoring Well Disinfection Completion Report* and a *Total Coliform Compliance Assessment Plan*, which will include a date for when the system will be in compliance with the effluent limitations.

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

The 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.

Monitoring and Reporting Program

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

Other Regulatory Considerations (CV-SALTS)

The Central Valley Water Board is developing amendments to the Basin Plan to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley as part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative. The CV-SALTS Salinity Control Program currently being developed would subject dischargers that do not meet stringent salinity numeric values (700 µS/cm EC as a monthly average to protect the AGR

beneficial use and 900 µS/cm EC as an annual average to protect the municipal and domestic beneficial uses of water) 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 Facility regulated under this Order. More information regarding this regulatory planning process can be found online Central Valley Water Board Web Page (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/).

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS FOR WASTE DISCHARGE REQUIREMENTS

1 March 1991

A. General Provisions:

1. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, or protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.

2. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.

3. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a. Violation of any term or condition contained in this Order;

   b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;

   c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge;

   d. A material change in the character, location, or volume of discharge.

4. Before making a material change in the character, location, or volume of discharge, the discharger shall file a new Report of Waste Discharge with the Regional Board. A material change includes, but is not limited to, the following:

   a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements.

   b. A significant change in disposal method, location or volume, e.g., change from land disposal to land treatment.

   c. The addition of a major industrial, municipal or domestic waste discharge facility.

   d. The addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.

5. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

6. The discharger shall take all reasonable steps to minimize any adverse impact to the waters of the state resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance.

7. The discharger shall maintain in good working order and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

8. The discharger shall permit representatives of the Regional Board (hereafter Board) and the State Water Resources Control Board, upon presentations of credentials, to:

   a. Enter premises where wastes are treated, stored, or disposed of and facilities in which any records are kept,

   b. Copy any records required to be kept under terms and conditions of this Order,

   c. Inspect at reasonable hours, monitoring equipment required by this Order, and

   d. Sample, photograph and video tape any discharge, waste, waste management unit, or monitoring device.

9. For any electrically operated equipment at the site, the failure of which would cause loss of control or containment of waste materials, or violation of this Order, the discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.

10. The fact that it would have been necessary to halt or reduce the permitted activity in Order to maintain compliance with this Order shall not be a defense for the discharger's violations of the Order.

11. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the California Water Code, Section 13050.

12. The discharge shall remain within the designated disposal area at all times.

B. General Reporting Requirements:

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

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

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

   This plan shall:

   a. Identify the possible sources of accidental loss or leakage of wastes from each waste management, treatment, or disposal facility.

   b. Evaluate the effectiveness of present waste management/treatment units and operational procedures, and identify needed changes of contingency plans.

   c. Predict the effectiveness of the proposed changes in waste management/treatment facilities and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

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

3. All reports shall be signed by persons identified below:

   a. <u>For a corporation</u>: by a principal executive officer of at least the level of senior vice-president.

   b. <u>For a partnership or sole proprietorship</u>: by a general partner or the proprietor.

   c. <u>For a municipality, state, federal or other public agency</u>: by either a principal executive officer or ranking elected or appointed official.

   d. A duly authorized representative of a person designated in 3a, 3b or 3c of this requirement if;

      (1) the authorization is made in writing by a person described in 3a, 3b or 3c of this provision;

      (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

      (3) the written authorization is submitted to the Board

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

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

4. Technical and monitoring reports specified in this Order are requested pursuant to Section 13267 of the Water Code. Failing to furnish the reports by the specified deadlines and falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the discharger.

5. The discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

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

   Note: Current addresses for all three Regional Board offices may be found on the Central Valley Waterboard website (http://www.waterboards.ca.gov/centralvalley/about_us/contact_us) or the current address if the office relocates.

C. Provisions for Monitoring:

1. All analyses shall be made in accordance with the latest edition of: (1) *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA 600 Series) and (2) *Test Methods for Evaluating Solid Waste* (SW 846-latest edition). The test method may be modified subject to application and approval of alternate test procedures under the Code of Federal Regulations (40 CFR 136).

2. Chemical, bacteriological, and bioassay analysis shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to EPA guidelines or to procedures approved by the Board.

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

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

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

Record of monitoring information shall include:

a. the date, exact place, and time of sampling or measurements,
b. the individual(s) who performed the sampling of the measurements,
c. the date(s) analyses were performed,
d. the individual(s) who performed the analyses,
e. the laboratory which performed the analysis,
f. the analytical techniques or methods used, and
g. the results of such analyses.

4. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated at least yearly to ensure their continued accuracy.

5. The discharger shall maintain a written sampling program sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the discharger shall be familiar with the sampling plan.

6. The discharger shall construct all monitoring wells to meet or exceed the standards stated in the State Department of Water Resources *Bulletin 74-81* and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.22

D. Standard Conditions for Facilities Subject to California Code of Regulations, Title 23, Division3, Chapter 15 (Chapter 15)

1. All classified waste management units shall be designed under the direct supervision of a California registered civil engineer or a California certified engineering geologist. Designs shall include a Construction Quality Assurance Plan, the purpose of which is to:

   a. demonstrate that the waste management unit has been constructed according to the specifications and plans as approved by the Board.

   b. provide quality control on the materials and construction practices used to construct the waste management unit and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.

2. Prior to the discharge of waste to any classified waste management unit, a California registered civil engineer or a California certified engineering geologist must certify that the waste management unit meets the construction or prescriptive standards and performance goals in Chapter 15, unless an engineered alternative has been approved by the Board. In the case of an engineered alternative, the registered civil engineer or a certified engineering geologist must

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

3. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the waste management units.

4. Closure of each waste management unit shall be performed under the direct supervision of a California registered civil engineer or a California certified engineering geologist.

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

1. If the discharger's wastewater treatment plant is publicly owned or regulated by the Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to California Code of Regulations, Title 23, Division 4, Chapter 14.

2. By-pass (the intentional diversion of waste streams from any portion of a treatment facility, except diversions designed to meet variable effluent limits) is prohibited. The Board may take enforcement action against the discharger for by-pass unless:

   a. (1) By-pass was unavoidable to prevent loss of life, personal injury, or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass. Severe property damage does not mean economic loss caused by delays in production); and

      (2) There were no feasible alternatives to by-pass, such as the use of auxiliary treatment facilities or retention of untreated waste. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a by-pass that would otherwise occur during normal periods of equipment downtime or preventive maintenance; or

   b. (1) by-pass is required for essential maintenance to assure efficient operation; and

      (2) neither effluent nor receiving water limitations are exceeded; and

      (3) the discharger notifies the Board ten days in advance.

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

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

a. an upset occurred and the cause(s) can be identified;

b. the permitted facility was being properly operated at the time of the upset;

c. the discharger submitted notice of the upset as required in paragraph B.1. above; and

d. the discharger complied with any remedial measures required by waste discharge requirements.

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

4. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Board by **31 January**.

5. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to disposal. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

6. Definitions

   a. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper action.

   b. The monthly average discharge is the total discharge by volume during a calendar month divided by the number of days in the month that the facility was discharging. This number is to be reported in gallons per day or million gallons per day.

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

   c. The monthly average concentration is the arithmetic mean of measurements made during the month.

   d. The "daily maximum" **discharge** is the total discharge by volume during any day.

e. The "daily maximum" **concentration** is the highest measurement made on any single discrete sample or composite sample.

f. A "grab" sample is any sample collected in less than 15 minutes.

g. Unless otherwise specified, a composite sample is a combination of individual samples collected over the specified sampling period;

(1) at equal time intervals, with a maximum interval of one hour

(2) at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

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

7. Annual Pretreatment Report Requirements:

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

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

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

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

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

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

c. The cumulative number of industrial users that the discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

d. An updated list of the discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The discharger shall provide a brief explanation for each deletion. The list shall identify the inddustrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent that the federal categorical standards. The discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

(1) Complied with baseline monitoring report requirements (where applicable);

(2) Consistently achieved compliance;

(3) Inconsistently achieved compliance;

(4) Significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

(5) Complied with schedule to achieve compliance (include the date final compliance is required);

(6) Did not achieve compliance and not on a compliance schedule;

(7) Compliance status unknown.

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

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

f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

(1) Warning letters or notices of violation regarding the industrial user's apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations;

(2) Administrative Orders regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;

(3) Civil actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations;

(4) Criminal actions regarding the industrial user's noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

(5) Assessment of monetary penalties. For each industrial user identify the amount of the penalties;

(6) Restriction of flow to the treatment plant; or

(7) Disconnection from discharge to the treatment plant.

g. A description of any significant changes in operating the pretreatment program which differ from the discharger's approved Pretreatment Program, including, but not limited to, changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority of enforcement policy; funding mechanisms; resource requirements; and staffing levels.

h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

i. A summary of public participation activities to involve and inform the public.

j. A description of any changes in sludge disposal methods and a discussion of any concerns not described elsewhere in the report.

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

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

and

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

Revised January 2004 to update addresses and phone numbers