NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET
May 12, 2020

Permittee Name:	Santa Ynez Band of Chumash Indians
Mailing Address:	P.O. Box 517, Santa Ynez, California 93460
Facility Location:	3400 East Highway 246 Santa Ynez, California 93460
Contact Person(s):	Kenneth Kahn, Tribal Chairman
	Greg Lowe, Executive Director, Facilities: 805-686-3833
	greg.lowe@chumashcasino.com
	Julie Colbert, Water Quality Specialist: 805-688-7997 jrandall@santaynezchumash.org
	Kevin McKennon, Operations Supervisor: 805-692-1927 wwtp@impulse.net
NPDES Permit No.:	CA0050008

I. STATUS OF PERMIT

The Santa Ynez Band of Chumash Indians (the "permittee") applied for the renewal of their National Pollutant Discharge Elimination System (NPDES) permit to authorize the discharge of treated domestic wastewater from the Santa Ynez Band of Chumash Indians Wastewater Treatment Plant (the "facility") to Zanja de Cota Creek, tributary to the Santa Ynez River, located in Santa Barbara County, California. A complete application was submitted on March 13, 2014. EPA Region 9 developed this fact sheet and permit pursuant to Section 402 of the Clean Water Act (CWA), which requires point source dischargers to control the pollutants discharged to waters of the United States as specified in an NPDES permit.

This permittee is classified as a minor discharger and is currently discharging under NPDES and permit number CA0050008, issued on June 25, 2014. Pursuant to 40 CFR 122.21, the existing permit was administratively continued April 11, 2019, and the terms of the existing permit were extended until the new permit is issued.

II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit (2014 – 2019)	Re-issued permit (2020 – 2025)	Reason for change
Streamflow (upstream)	--	Monitoring Only	Determine future potential for dilution
Whole Effluent Toxicity	Monitoring Only	Chronic toxicity limit for *Ceriodaphnia dubia* and *Selenastrum Capricornitum*	Reasonable potential to exceed narrative toxicity objective

Whole Effluent Toxicity	Monitoring Only for *Pimephales promelas*	Monitoring requirement removed	Toxicity concerns addressed by WET limits for *Ceriodaphnia dubia* and *Selenastrum Capricornutum*
Sodium	Monitoring Only	60 mg/L	Reasonable potential to exceed water quality objectives (for irrigation water)
Total Dissolved Solids (TDS)	1,100 mg/L (annual average), sampled monthly	700 mg/L (rolling 12-month average), sampled quarterly	Revised limit based on no dilution and the water quality objective (for groundwater recharge).
Total Dissolved Solids (TDS), intake	--	Monitoring Only	To determine intake TDS level
Dissolved Oxygen (DO)	5 mg/L at all times	Limit removed	No reasonable potential
Turbidity	2 NTU max monthly; 5 NTU max daily	Limit removed	No reasonable potential
Total Residual Chlorine	Monitoring only	11 µg/L monthly, 19 µg/L daily limits; applies when chlorine is used.	Reasonable potential; limit needed to protect aquatic life.
Dichlorobromomethane	Monitoring only	0.56 µg/L	Reasonable potential to exceed California Toxics Rule (CTR) criteria to protect human health.
Bromoform	Monitoring only	4.3 µg/L	Reasonable potential to exceed California Toxics Rule (CTR) criteria to protect human health.
Requirement to submit Discharge Monitoring Reports (DMRs) electronically through NetDMR and to submit annual biosolids reports electronically using NPDES Electronic Reporting Tool ("NeT")	Requirement to mail paper copies	Requirement to submit electronically	Implements EPA's NPDES Electronic Reporting Rule, effective December 2015.

III. GENERAL DESCRIPTION OF FACILITY

The facility serves approximately 6,450 people on the Santa Ynez Reservation, Casino & Hotel Complex, Administration Buildings and Health Clinic, including about 350 residents, 100 employees, and 6,000 patrons per day. Wastewater collected through the sewer system gravity flows to the WWTP. Operation and maintenance of the facility and collection system is conducted by the Santa Ynez Community Services District.

EPA inspected the facility in 2019. At the time of the previous inspection (2015), the facility was undergoing significant renovations and upgrades. The casino constructed an addition to the hotel of 215 rooms in a 12-story tower, tripling the room capacity, adding a food court and five-story garage, and doubling the gaming floor area to nearly 94,000 square feet. The previous Sequencing Batch Reactor (SBR) tanks were converted in 2015 to Membrane Bioreactors (MBR) to increase the capacity from 0.20 million gallons per day (MGD) to 0.32 MGD, and the treatment system was upgraded to meet California recycled water use standards. The average discharge flow rate was 0.12 MGD.

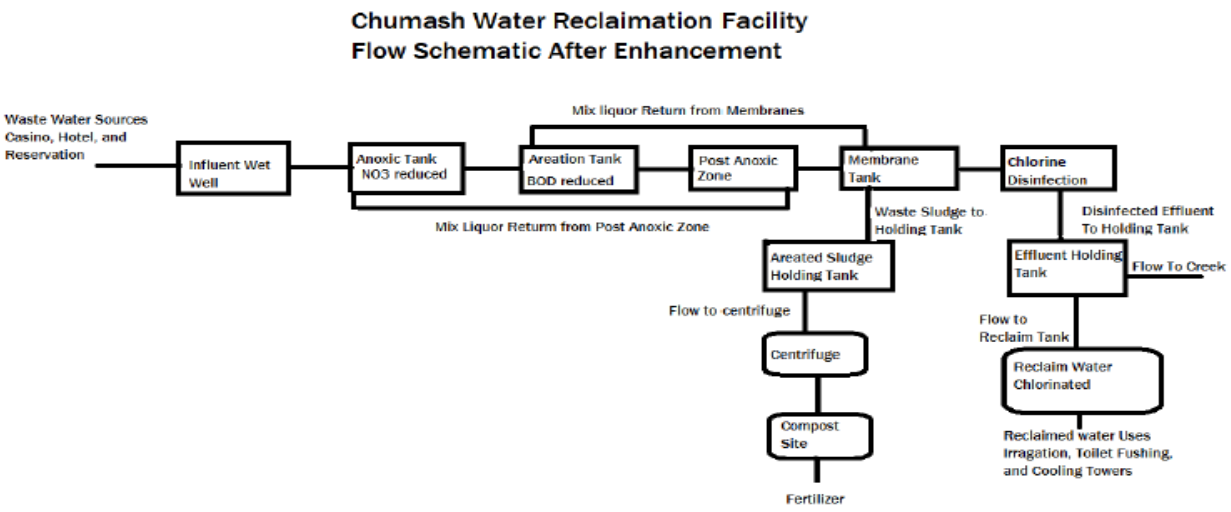
Influent at the treatment facility is sent to a 20-foot-deep wet well, then passes through two parallel two-mm Roto-Sieves, which included a spray-down system within the 304 stainless steel to address issues with hydrogen sulfide gas resulting from long retention times in the two 15,000-gallon grease traps. Influent passes from the sieves to two parallel 35,000-gallon anoxic basins that are mechanically mixed,

then to two parallel aeration basins with fine bubble diffusers. Mixed Liquor Suspended Solids (MLSS) is targeted at 4,800 mg/L.

The back end of the aeration basin has been baffled to create a second anoxic zone in order to treat the high levels of ammonia received at the facility. Influent ammonia concentration is about 85 mg/L (135 mg/L TKN). Membranes have a 0.04-mm pore size and are operated on an automatic timer for a "relax" mode, where aeration agitates any fouling of the membranes, approximately every 500 seconds. A chemical backwash of chlorine and weak acid occurs once or twice per day. Membrane permeate is sent to the chlorine contact chamber; a chlorine residual is maintained for stored treated wastewater to minimize regrowth. See figure below.

Tertiary treated effluent that is not discharged is stored on-site before being reused on-site for toilet flushing, on-site irrigation, off-site irrigation, or for use in the cooling system at the casino. The facility has obtained a WDR (Waste Discharge Restrictions) permit from the Central Coast Regional Water Quality Control Board (CCRWQCB) to send recycled wastewater off-site outside of Tribal boundaries (Tribally owned but not held in Trust). Water is reused primarily during periods of drought; an extended drought since 2014 and upstream groundwater pumping has reduced flow in the creek and increased the use of recycled water.

The Tribe maintains a contract with the City of Solvang so that waste from the wet well can be pumped directly to the city's sewer system for treatment in an emergency.



IV. DESCRIPTION OF RECEIVING WATER

The facility discharges from Outfall 001 into Zanja de Cota Creek, a tributary of the Santa Ynez River. Approximately 1.3 miles downstream of the outfall, the creek flows off the reservation and into California state waters. Since 2014, changes upstream have resulted in reduced streamflow in Zanja de Cota Creek.

No water quality standards have been established specifically for Zanja de Cota Creek at the outfall, but specific standards exist for both the downstream flow in the Santa Ynez River and for groundwater protection. EPA applied downstream water quality standards as specified in the Water Quality Control Plan for the Central Coast Region (the "Basin Plan"), June 2019. EPA also established limits based on

the California Toxics Rule (CTR) EPA did consider Clean Water Act §304(a) aquatic life or human health criteria and established limits based on those criteria, where appropriate.

V. DESCRIPTION OF DISCHARGE

Table 1 shows data related to discharge from Outfall 001 based on permittee's NPDES renewal application and supplemental data, as well as data reported on discharge monitoring reports. More information is available on Enforcement and Compliance History Online (ECHO) at https://echo.epa.gov/detailed-facility-report?fid=110017377122.

Effluent flow is not continuous when the plant is providing reclamation water; 60% of more of the water is used for reclamation. Dechlorination only occurs to the effluent as it is going through the outfall; dechlorination is with bisulfite, which reduces the pH.

Pollutants believed to be absent, based on the facility type and existing monitoring data, or never detected in the effluent, are not included for limitation or monitoring.

Total coliform counts exceeded the permit limit on three occasions, and pH values fell outside of the permitted range on two occasions.

Since 2014, the effluent data show elevated concentrations of TDS (exceeding the permit limit in four of the previous five years), and chronic toxicity is periodically demonstrated. Beginning in 2014, an extended period of drought drove greater reuse of treated water, including for the casino cooling towers. In many cases, the intake water may have had higher than average salt content; groundwater that comprises a portion of the influent averaged over 600 mg/L in 2018. Elevated TDS and chronic toxicity may be associated with water reuse for the cooling towers, which concentrates salts, and cleaning of the cooling towers with a biocide. Neither accelerated monitoring for chronic toxicity nor a Toxicity Reduction Evaluation (TRE) were conducted as required by the previous permit; these actions are required by this permit and will provide additional information to pinpoint the source(s) of any future chronic toxicity exceedances.

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., "technology-based effluent limits") and the water quality standards applicable to the downstream receiving water (e.g., "water quality-based effluent limits"). EPA established the most stringent of applicable technology-based or water quality-based effluent limitations in the permit, as described below.

A. Applicable Technology-Based Effluent Limitations (TBELs)

EPA developed technology-based treatment standards for municipal wastewater treatment plants in accordance with Section 301(b)(1)(B) of the CWA. The minimum levels of effluent quality attainable by secondary treatment for BOD_5, TSS, and pH, as defined in 40 CFR §133.102, are listed below. Mass limits, as required by 40 CFR §122.45(f), are also listed for BOD_5 and TSS. TBELs identified in this section are based on secondary treatment standards; more stringent requirements applied in Section VI.C., below, informed the final effluent limitations for BOD_5 and TSS.

Table 1. Effluent Data for Outfall 001 from August 2014 to July 2019

Parameter	Units[1]	2014 Permit Effluent Limitations			Effluent Data (not shown if nondetect)			
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Maximum	No. Samples
Flow Rate	mgd	0.2	--	0.2	0.07	--	0.13	60
Temperature	°C	--	--	--	30.6	--	32.1	60
Turbidity	NTU	2	--	5	0.52	--	3.2	60
Dissolved Oxygen	mg/L	5 mg/L min at all times			5.05 min; 6.3 average			60
Biochemical Oxygen Demand; 5-day (BOD_5)[2]	mg/L	10	15	--	5.67	12.4	--	60
	lbs/day	16.7	25	--	2.95	13.3	--	
	Removal	85% (minimum) [2]			98.2% (minimum)[2]			60
pH	SU	7.0-8.3 at all times			6.96 min - 8.35 max (one violation)			60
Unionized Ammonia[3]	mg/L	--	--	0.025	--	--	0.023	60
Total Coliform	MPN/ 100mL	--	--	2.2	--	--	7.8	60
Nitrate (as N)	mg/L	5	--	7.5	4.6	--	4.7	60
Total Suspended Solids (TSS)	mg/L	10	15	--	2.5	6.0	--	60
	lbs/day	16.7	25	--	1.8	3.3	--	
	Removal	85 % (minimum)[2]			93% (minimum)[2]			60
Total Dissolved Solids (TDS)	mg/L	1,100 (annual)			1,346 (max annual average) 1,680 (max monthly average)			60
Total Residual Chlorine	mg/L	--	--	--	1.92	--	8.8	20
Settleable Solids	mL/L	1	--	2	0	--	0	60
Sodium, Total (as Na)	mg/L	--	--	--	340 (max annual average) 407 (max daily/monthly average)			60
Oil & Grease (Total Recoverable)	mg/L	10	--	15	7.0	--	7.0	60
Cyanide, Total (as CN)	µg/L	--	--	--	--	--	0.004	1
Chromium, hexavalent (as Cr)	µg/L	--	--	--	--	--	0.5	1
Nickel, Total Recoverable	µg/L	--	--	--	--	--	0.002	1
Zinc, Total Recoverable	µg/L	--	--	--	--	--	0.05	1
Cadmium, Total Recoverable	µg/L	--	--	--	--	--	0.0002	1
Copper, Total Recoverable	µg/L	--	--	--	--	--	0.009	1

Parameter	Units[1]	2014 Permit Effluent Limitations			Effluent Data (not shown if nondetect)			
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Maximum	No. Samples
Dichlorobromo-methane	µg/L	--	--	--	--	--	18.1	1
Bromoform	µg/L	--	--	--	--	--	0.5	1
Dibromochloro-methane	µg/L	--	--	--	--	--	50	1
Chloroform	µg/L	--	--	--	--	--	240	1
Phosphorus, Total	mg/L	--	--	--	16	--	16	19
Ceriodaphnia dubia 7-day (Chronic toxicity)[4]	Pass/Fail	--	--	--	--	--	Fail (x3)	8
Pimephales Promelas 7-day (Chronic toxicity)[4]	Pass/Fail	--	--	--	--	--	Fail (x2)	8
Selenium Capricornutum 96-hr (Chronic toxicity)[4]	Pass/Fail	--	--	--	--	--	Fail (x1)	8

NOTES:

[1]Mass based limits were calculated using 0.20 MGD flow.

[2]Both the influent and the effluent shall be monitored. The arithmetic mean of the BOD_5 values and of the TSS values, by concentration, for effluent samples collected over a calendar month shall not exceed 15 percent of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period (i.e. 85 percent BOD_5 removal; 85 percent TSS removal).

[3]When monitoring for total ammonia (as nitrogen), pH monitoring must be concurrent.

[4]See Part I., Table 1 and Part III.C of this permit—Chronic whole effluent toxicity (WET) Requirements—for chronic toxicity WQBEL and monitoring conditions. Chronic toxicity testing shall be conducted concurrent with effluent monitoring for all other parameters.

BOD_5

Concentration-based Limits

30-day average: 30 mg/L
7-day average: 45 mg/L
Removal Efficiency: 85% minimum

Mass-based Limits

30-day average – (30 mg/L)(0.20 MGD)(8.345 conversion factor) = 50 lbs/day
7-day average – (45 mg/L)(0.20 MGD)(8.345 conversion factor) = 75 lbs/day

TSS

Concentration-based Limits

30-day average – 30 mg/L
7-day average – 45 mg/L
Removal efficiency – Minimum of 85%

Mass-based Limits

30-day average – (30 mg/L)(0.20 MGD)(8.345 conversion factor) = 50 lbs/day
7-day average – (45 mg/L)(0.20 MGD)(8.345 conversion factor) = 75 lbs/day

pH

Instantaneous Measurement: 6.0 – 9.0 standard units (S.U.)

Technology-based treatment requirements may be imposed on a case-by-case basis under Section 402(a)(1) of the CWA, to the extent that EPA-promulgated effluent limitations are inapplicable (i.e., the regulation allows the permit writer to consider the appropriate technology for the category or class of point sources and any unique factors relating to the applicant) (40 CFR § 125.3(c)(2)).

The minimum levels of effluent quality attainable by secondary treatment for settleable solids, as specified in the EPA Region 9 Policy memo dated May 14, 1979, are listed below:

Settleable Solids

30-day average – 1 mL/L
Daily maximum – 2 mL/L

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations (WQBELs) are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR 122.44(d)(1)). In making this determination, the permitting authority uses procedures accounting for; existing controls on point and non-point sources of pollution; the variability of the pollutant or pollutant parameter in the effluent; the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and, where appropriate, the dilution of the effluent in the receiving water (40 CFR 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers' Manual* (Office of Water, U.S. EPA, September 2010). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants for a Reasonable Potential Analysis

1. Applicable Standards, Designated Uses and Impairments of Receiving Water

The Tribe does not have water quality standards. The Basin Plan does not specify water quality standards for Zanja de Cota Creek within the reservation, but downstream standards do apply, as do those established for all inland surface waters (e.g., CTR) and site-specific objectives for surface waters in the Santa Ynez River near Solvang.

The Basin Plan identifies the following beneficial uses in the Santa Ynez River downstream from Cachuma Reservoir:

- Municipal and Domestic Supply (MUN)
- Agricultural Supply (AGR)
- Industrial Process Supply (PROC)
- Industrial Service Supply (IND)
- Groundwater Recharge (GWR)
- Fresh Water Replenishment (FRSH)
- Water Contact Recreation and Non-Contact Water Recreation (REC-1 and REC-2)
- Commercial and Sport Fishing (COMM)
- Warm Fresh Water Habitat (WARM)
- Cold Fresh Water Habitat (COLD)
- Wildlife Habitat (WILD)
- Rare, Threatened, or Endangered Species (RARE)
- Migration of Aquatic Organisms (MIGR)
- Spawning, Reproduction, and/or Early Development (SPWN)

Statewide Objectives for Inland Surface Waters (CTR, Statewide Mercury Objectives):

The CTR (40 CFR §131.38) established numeric criteria for priority toxic pollutants in the State of California. Criterion Maximum Concentration (CMC) and Criterion Continuous Concentration (CCC) for fresh water compounds detected in the priority pollutant scan are summarized below; refer to the detailed notes in the CTR.

Compound	CMC (µg/L)	CCC (µg/L)	Human Health Water & Organisms	Human Health Organisms Only	Notes (letters refer to CTR footnotes)
Cadmium	4.3	2.2	n	n	e, i, m, w, x (CMC)
Chromium (VI)	16	11	n	n	i, m, w
Copper	13	9.0	1300		e, i, m, w
Lead	65	2.5	n	n	e, i, m, z
Nickel	470	52	610 a	4600 a	e, i, m, w
Zinc	120	120			e, i, m, w, x (CMC)
Cyanide	22	5.2	700 a	220,00 a, j	o
Bromoform			4.3 a, c	360 a, c	
Dichlorobromomethane			0.56 a, c	46 a, c	

Source: 40 CFR §131.38 Establishment of numeric criteria for priority toxic pollutants for the State of California (California Toxics Rule, CTR)

The State of California established statewide mercury criteria in 2017 (Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions). A criterion of 12 ng/L applies to all inland surface streams with COMM, CUL, WILD, MAR, and RARE beneficial uses.

Basin Plan Objectives for All Inland Surface Waters, Enclosed Bays, and Estuaries:

Color: Coloration attributable to materials of waste origin shall not be greater than 15 units or 10 percent above natural background color, whichever is greater.

Tastes and Odors: Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

Floating Material: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

Settleable Material: Waters shall not contain settleable material in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses.

Oil and Grease: Waters shall not contain oils, greases, waxes, or other similar materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

Biostimulatory Substances: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

Sediment: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

Turbidity: Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increase in turbidity attributable to controllable water quality factors shall not exceed the following limits:

1. Where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 20 percent.
2. Where natural turbidity is between 50 and 100 NTU, increases shall not exceed 10 NTU.
3. Where natural turbidity is greater than 100 NTU, increases shall not exceed 10 percent.

Allowable zones of dilution within which higher concentrations will be tolerated will be defined for each discharge in discharge permits.

pH: For waters not mentioned by a specific beneficial use, the pH value shall not be depressed below 7.0 or raised above 8.5.

Dissolved Oxygen: For waters not mentioned by a specific beneficial use, dissolved oxygen concentration shall not be reduced below 5.0 mg/L at any time. Median values should not fall below 85 percent saturation as a result of controllable water quality conditions.

Temperature: Natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.

Toxicity:
All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, toxicity bioassays of appropriate duration, or of the appropriate methods as specified by the Regional Board.

Survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality conditions shall not be less than that for the same waterbody in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, latest edition. As a minimum, compliance with this objective shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances is encouraged.

The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/L (as N) in receiving waters.

Pesticides:
No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.

For waters where existing concentrations are presently nondetectable or where beneficial uses would be impaired by concentrations in excess of nondetectable levels, total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in Standard Methods for the Examination of Water and Wastewater, latest edition, or other equivalent methods approved by the Executive Officer.

Chemical Constituents: Where wastewater effluents are returned to land for irrigation uses, regulatory controls shall be consistent with Title 22 of the California Code of Regulations and other relevant local controls.

Other Organics: Waters shall not contain organic substances in concentrations greater than the following:

- Methylene Blue Activated Substances: 0.2 mg/L
- Phenols: 0.1 mg/L
- PCBs: 0.3 µg/L (0.003 mg/L)

Radioactivity: Radionuclides shall not be present in concentrations that are deleterious to human, plan, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.

Basin Plan Objectives for Municipal and Domestic Supply (MUN)

pH: The pH value shall neither be depressed below 6.5 nor raised above 8.3.

Organic Chemicals: All inland surface waters, enclosed bays, and estuaries shall not contain concentrations of organic chemicals in excess of the maximum contaminant levels for primary drinking water standards specified in California Code of Regulations, Title 22, Division 4, Chapter 15, Article 5.5, §64444, Table 64444-A.

Ground waters shall not contain concentrations of organic chemicals in excess of the maximum contaminant levels for primary drinking water standards in CCR title 22, Division 4, Chapter 15, Article 5.5, §64444, Table 64444-A.

Inorganic Chemicals: Waters shall not contain concentrations of inorganic chemicals in excess of the maximum contaminant levels for primary drinking water standards specified in California Code of Regulations, Title 22, Division 4, Chapter 15, Article 5, §64442 and 64443.

Ground waters shall not contain concentrations of inorganic chemicals in excess of the maximum contaminant levels for primary drinking water standards in CCR title 22, Division 4, Chapter 15, Article 5.5, §64444, Table 64444-A.

Phenol: Waters shall not contain phenol concentrations in excess of 1.0 ug/L (0.001 mg/L).

Radioactivity: Waters shall not contain concentrations of radionuclides in excess of the maximum contaminant levels for primary drinking water standards specified in California Code of Regulations, Title 22, Division 4, Chapter 15, §64431 and 64433.2.

Bacteria:
The median concentration of coliform organisms over any seven-day period shall be less than 2.2/100 mL.

Basin Plan Objectives for Agricultural Supply (AGR)

pH: The pH value shall neither be depressed below 6.5 nor raised above 8.3.

Dissolved Oxygen: Dissolved oxygen concentration shall not be reduced below 2.0 mg/L at any time.

Chemical Constituents: Waters shall not contain concentrations of chemical constituents in amounts which adversely affect the agricultural beneficial use. Interpretation of adverse effect shall be as derived from the University of California Agricultural Extension Service guidelines provided in Table 3-1 from the Central Coast Basin Plan ("Basin Plan").

In addition, waters used for irrigation and livestock watering shall not exceed concentrations for those chemicals listed in Table 3-2 from the Central Coast Basin Plan. Salt concentrations for irrigation waters shall be controlled through implementation of the anti-degradation policy to the effect that mineral

constituents of currently or potentially usable waters shall not be increased. It is emphasized that no controllable water quality factor shall degrade the quality of any groundwater resource or adversely affect long-term soil productivity.

Where wastewater effluents are returned to land for irrigation uses, regulatory controls shall be consistent with Title 22 of the California Code of Regulations and with relevant controls for local irrigation sources.

Ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. Interpretation of adverse effect shall be as derived from the University of California Agricultural Extension service guidelines provided in Basin Plan Table 3-1.

Water used for irrigation and livestock watering shall not exceed the concentrations for those chemicals listed in table 3 – 2. No controllable water quality factor shall degrade the quality of any groundwater resource or adversely affect long-term soil productivity. The salinity control aspects of groundwater management will account for effects from all sources.

Basin Plan Objectives for Water Contact Recreation (REC-1)

pH: The pH value shall neither be depressed below 6.5 nor raised above 8.3.

Bacteria: Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 mL, nor shall more than ten percent of total samples during and 30-day period exceed 400/100 mL.

Basin Plan Objectives for Non-Contact Water Recreation (REC-2)

pH: The pH value shall neither be depressed below 6.5 nor raised above 8.3.

Bacteria: Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 2000/100 mL, nor shall more than ten percent of total samples during and 30-day period exceed 4000/100 mL.

Basin Plan Objectives for Cold Freshwater Habitat (COLD)

pH: The pH value shall neither be depressed below 7.0 nor raised above 8.3. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters.

Dissolved Oxygen: The dissolved oxygen concentration shall not be reduced below 7.0 mg/L at any time.

Temperature: At no time or place shall the temperature be increased by more than 5^{o} above natural receiving water temperature.

Chemical Constituents: Waters shall not contain concentrations of chemical constituents known to be deleterious to fish or wildlife in excess of the limits listed in Basin Plan Table 3-3.

Guidelines for Interpretation of Water for Irrigation[a] (Basin Plan Table 3-1)

Problem and Related Constituent	Water Quality Guidelines		
	No Problem	Increasing Problems	Severe
Salinity[b]			
EC of irrigation water, mmho/cm	<0.75	0.75 - 3.0	>3.0
Permeability			
EC of irrigation water, mmho/cm	>0.5	<0.5	<0.2
SAR, adjusted[c]	<6.0	6.0 - 9.0	>9.0
Specific ion toxicity[d] from root absorption			
Sodium (evaluate by adjusted SAR)	<3	3.0 - 9.0	>9.0
Chloride			
me/L	<4	4.0 - 10	>10
mg/L	<142	142 - 355	>355
Boron, mg/L	<0.5	0.5 - 2.0	2.0 - 10.0
Specific ion toxicity[d] from foliar absorption[e] (sprinklers)			
Sodium			
me/L	<3.0	>3.0	--
mg/L	<69	>69	--
Chloride			
me/L	<3.0	>3.0	--
mg/L	<106	>106	--
Miscellaneous[f]			
NH4 - N, mg/L for sensitive crops	<5	5 - 30	>30
NO3 - N, mg/L for sensitive crops	<5	5 - 30	>30
HCO3 (only with overhead sprinklers)			
me/L	<1.5	1.5 - 8.5	>8.5
mg/L	<90	90 - 520	>520
pH	Normal range	6.5 - 8.4	--

a. Interpretations are based on possible effects of constituents on crops and/or soils. Guidelines are flexible and should be modified when warranted by local experience or special conditions of crop, soil, and method of irrigation.

b. Assumes water for crop plus needed water for leaching requirement (LR) will be applied. Crops vary in tolerance to salinity. Refer to tables for crop tolerance and LR. The mmho/cm x 640 = approximate total dissolved solids (TDS) in mg/L or ppm; mmho x 1,000 = micromhos.

c. Adjusted SAR (sodium adsorption ratio) is calculated from a modified equation developed by U.S. Salinity Laboratory to include added effects of precipitation and dissolution of calcium in soils and related to CO_3 + HCO_3 concentrations.

To evaluate sodium (permeability) hazard: Adjusted SAR = $Na/[1/2 (Ca + Mg)]^{1/2}[1+ (8.4 - pHc)]$.
Refer to Appendix A-26 for calculation assistance.

SAR can be reduced if necessary by adding gypsum. Amount of gypsum required (GR) to reduce a hazardous SAR to any desired SAR (SAR desired) can be calculated as follows:

$$GR = \left[\frac{2(Na)^2}{SAR^2\,desired} - (Ca + Mg)\right] 234$$

Note: Na and Ca + Mg should be in me/L. GR will be in lbs. of 100 percent gypsum per acre foot of applied water.

d. Most tree crops and woody ornamentals are sensitive to sodium and chloride (use values shown). Most annual crops are not sensitive (use salinity tolerance tables). For boron sensitivity, refer to boron tolerance tables. A source of tolerance tables is "Agricultural Salinity and Drainage," University of California Water Management Series publication 3375, revised 2006.

e. Leaf areas wet by sprinklers (rotating heads) may show a leaf burn due to sodium or chloride absorption under low humidity/high evaporation conditions. (Evaporation increases ion concentration in water films on leaves between rotations of sprinkler heads.)

f. Excess N may affect production or quality of certain crops; e.g., sugar beets, citrus, avocados, apricots, etc. (1 mg/L NO_3 - N = 2.72 lbs. N/acre foot of applied water.) HCO_3 with overhead sprinkler irrigation may cause a white carbonate deposit to form on fruit and leaves.

Water Quality Objectives for Agricultural Water Use (Basin Plan Table 3-2)

Element	Maximum Concentration (mg/L)[a] Irrigation supply[b]	Livestock watering
Aluminum	5.0	5.0
Arsenic	0.1	0.2
Beryllium	0.1	--
Boron	0.75	5.0
Cadmium	0.01	0.05
Chromium	0.10	1.0
Cobalt	0.05	1.0
Copper	0.2	0.5
Fluoride	1.0	2.0
Iron	5.0	--
Lead	5.0	0.1[c]
Lithium	2.5[d]	--
Manganese	0.2	--
Mercury	--	0.01
Molybdenum	0.01	0.5
Nickel	0.2	--
Nitrate + Nitrite	--	100
Nitrite	--	10
Selenium	0.02	0.05
Vanadium	0.1	0.10
Zinc	2.0	25

a. Values based primarily on "Water Quality Criteria 1972" National Academy of Sciences-National Academy of Engineers, Environmental Study Board, ad hoc Committee on Water Quality Criteria furnished as recommended guidelines by University of California Agriculture Extension Service, January 7, 1974; maximum values are to be considered as 90 percentile values not to be exceeded.

b. Values provided will normally not adversely affect plants or soils; no data available for mercury, silver, tin, titanium, and tungsten.

c. Lead is accumulative and problems may begin at threshold value (0.05 mg/L).

d. Recommended maximum concentration for irrigating citrus is 0.075 mg/L.

Toxic Metal Concentrations not to be Exceeded in Aquatic Life Habitats, mg/L[a] (Basin Plan Table 3-3)

Metal	Fresh Water (COLD, WARM) Hard (> 100 mg/L CaCO3)	Soft (< 100 mg/L CaCO3)
Cadmium[b]	0.03	0.004
Chromium	0.05	0.05
Copper	0.03	0.01
Lead	0.03	0.03
Mercury[c]	0.0002	0.0002
Nickel[d]	0.4	0.1
Zinc	0.2	0.004

a. Based on limiting values recommended in the National Academy of Sciences-National Academy of Engineers "Water Quality Criteria 1972." Values are 90 percentile values except as noted in qualifying note "c."

b. Lower cadmium values not to be exceeded for crustaceans and waters designated SPWN are 0.003 mg/L in hard water and 0.0004 mg/L in soft water.

c. Total mercury values should not exceed 0.05 µg/L as an average value; maximum acceptable concentration of total mercury in any aquatic organism is a total body burden of 0.5 µg/g wet weight.

d. Value cited as objective pertains to nickel salts (not pure metallic nickel).

Basin Plan Objectives for Warm Freshwater Habitat (WARM)

pH: The pH value shall neither be depressed below 7.0 nor raised above 8.3. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters.

Dissolved Oxygen: The dissolved oxygen concentration shall not be reduced below 5.0 mg/L at any time.

Temperature: At no time or place shall the temperature be increased by more than 5^{o} above natural receiving water temperature.

Chemical Constituents: Waters shall not contain concentrations of chemical constituents known to be deleterious to fish or wildlife in excess of the limits listed in Basin Plan Table 3-3.

Site-Specific Basin Plan Objectives for Santa Ynez River

The Basin Plan defines the following objectives for surface water quality in the Santa Ynez River near Solvang (Basin Plan Table 3-5):

- TDS: 700 mg/L, annual average
- Chlorine: 50 mg/L, annual average
- Sulfate: 250 mg/L, annual average
- Boron: 0.4 mg/L, annual average
- Sodium: 60 mg/L, annual average

It also defines the following objectives for groundwater quality for the Santa Ynez River Valley near Santa Ynez (Table 3-6):

- TDS: 700 mg/L, annual average
- Chlorine: 50 mg/L, annual average
- Sulfate: 10 mg/L, annual average
- Boron: 0.5 mg/L, annual average
- Sodium: 20 mg/L, annual average
- Nitrogen: 1 mg/L, annual average

While surface water objectives apply to discharges from the facility, the groundwater objectives are presented to emphasize that the groundwater basin is used as a drinking water supply.

Mean Surface Water Quality Objectives, Santa Ynez Hydrologic Area, mg/L[a] (Basin Plan Table 3-5)

Hydrologic Unit Sub-Area	TDS	Cl	SO4	B	Na
Solvang[b]	700	50	250	0.4	60

a. Objectives shown are annual mean values. Objectives are based on preservation of existing quality or water quality enhancement believed attainable following control of point sources.
b. Objectives for Solvang are used for the WQBEL analysis.

Water-Quality Limited Segments (303(d) list) and Total Maximum Daily Loads

The lower Santa Ynez River (Cachuma Lake to below city of Lompoc, which includes the segment below Zanja de Cota Creek, which the facility discharges to) is listed on the 2014-2016 303(d) list as impaired according to the CWA Section 303(d) List of Water Quality Limited Segments for

sedimentation/siltation, sodium, temperature, total dissolved solids, and toxicity. The segment from below the city of Lompoc to the ocean is also listed for chloride, *Escherichia coli (E. coli)*, fecal coliform, nitrate, dissolved oxygen, and pH. The segment of the Santa Ynez River above Cachuma is also listed for temperature and toxicity. The Regional Board initiated development of a Total Maximum Daily Load limit (TMDL) to address nutrient impairments in the lower Santa Ynez River in 2016, but no further progress has been made toward completion since then.

Numeric effluent limitations protective of water quality in the Santa Ynez River have been established for pollutants related to those on the current 303(d) list for the reach of the Santa Ynez River below Zanja de Cota Creek: TSS, suspended solids, turbidity, total dissolved solids (TDS) and temperature. Monitoring is required for sodium to inform future reasonable potential analyses and effluent limitation calculations. Additionally, monthly upstream (i.e., influent) and downstream receiving water monitoring has been established for TSS and biochemical oxygen demand (BOD), with a minimum percent removal limit for TSS and BOD.

2. Dilution in the Receiving Water

Discharge from Outfall 001 is to Zanja de Cota Creek. Upstream changes have reduced streamflow in the creek, so no dilution of the effluent has been considered in the development of water quality-based effluent limits applicable to the discharge. The permit does include flow monitoring to determine the potential for dilution in subsequent reissuances.

3. Type of Industry

Typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil & grease, turbidity and solids.

4. Compliance History and Toxic Impacts

Elevated TDS in the receiving water exceeded permit limits on numerous occasions. Elevated TDS appears to be primarily a result of reuse efforts by the permittee, resulting in increased salt concentrations in the effluent. Due to effluent toxicity, downstream impairment for TDS, lack of flows in the Zanja de Cota Creek—preventing the possibility of effluent dilution—and reasonable potential for continuing water quality standards exceedances, effluent limitations for TDS now reflect water quality objectives for the Santa Ynez River. The measurement period has been changed to a 12-month rolling average to address annual variations. Limits were previously expressed as an annual average, consistent with the objective in the Basin Plan, which would effectively allow exceedances in half the months.

Chronic toxicity is also present in the effluent; a chronic Whole Effluent Toxicity (WET) limit of Pass ("0") using the Test of Significant Toxicity (TST) statistical approach has been added for *Ceriodaphnia dubia* reproduction. This test species was the most sensitive, with three Fail ("1") results. Chronic WET limits were also added for the alga species *Selenastrum Capricornutum*, which had two WET test fails and may also indicate toxicity that could be related to cleaning of the cooling towers with algicide. Limits have not been added for the fathead minnow, as the permit contains WET limits for the more sensitive species and numeric WQBELs for unionized ammonia and total residual chlorine, which are toxicants for these two test species and are present in the discharge.

Total coliform limits were exceeded on three occasions; pH was slightly elevated (8.35) on one occasion, and slightly depressed (6.96) on one other occasion.

5. Existing Data on Toxic Pollutants and Reasonable Potential Analysis

For pollutants with effluent data available, EPA has conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics*

Control herein after referred to as EPA's TSD (EPA 1991). These statistical procedures result in the calculation of the projected maximum effluent concentration based on monitoring data to account for effluent variability and a limited data set. The projected maximum effluent concentrations were estimated assuming an effluent coefficient of variation of 0.6 for pollutants and the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of daily effluent values (sections 3.3.2 and 5.5.2 of EPA's TSD). EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

Projected maximum concentration = C_e × *reasonable potential multiplier factor*,
where "C_e" is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated pollutants expected to be present in the effluent, including for parameters that were detected in sampling during the permit period and have CTR or EPA's Section 304(a) national criteria recommendations ("304(a) criteria"), and selected the most stringent of applicable technology-based effluent limits or water quality-based effluent limitations. Where effluent concentrations of pollutant parameters are unknown or are not reasonably expected to be discharged in concentrations that have the reasonable potential to cause or contribute to water quality standards exceedances, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be reevaluated, and the permit may be reopened to incorporate effluent limitations as necessary.

Summary of Reasonable Potential Statistical Analysis[(1)]:

Parameter[(1)]	Maximum Observed Concentration	*n*	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
Unionized Ammonia	0.23 mg/L	60	2.3	0.053 mg/L	0.025 mg/L	Y
Dissolved Oxygen	5.05 mg/L (minimum)	60	N/A	N/A	5 mg/L	N
Total Dissolved Solids	1,680 mg/L (1,346 highest annual average)	60	2.3	3,864 mg/L	700 mg/L[(2,6)]	Y
Chronic Toxicity[(3)]	Fail (TST)	24	N/A	N/A	Pass (TST)	Y
Turbidity	0.5 NTU	60	2.3	1.15 NTU	10 NTU	N
Nitrate-Nitrogen	4.6 mg/L	60	2.3	10.6 mg/L	10 mg/L[(11)]	Y
Total Coliform Bacteria	7.8 MPN/100 mL	60	2.3	18 MPN/100 mL	2.2 MPN/100 mL	Y
Oil and Grease	7 mg/L	5	4.2	29.4 mg/L	10 mg/L	Y
Total Residual Chlorine	8.8 µg/L (daily)	20	2.3	20.2 µg/L	11 µg/L[(10)]	Y
Sodium	407 mg/L (highest daily) 335 (highest annual average)	5	4.2	1,709 mg/L (daily) 1,407 (annual)	60 mg/L[(6)] (annual)	Y
Dichlorobromo-methane	18.1 µg/L	1	13.2	239 µg/L	0.56 µg/L[(12)]	Y (advisory)
Bromoform	0.5 µg/L	1	13.2	6.6 µg/L	4.3 µg/L[(12)]	Y

Parameter[1]						
Dibromochloro-methane	50 µg/L	1	13.2	660 µg/L	--	N
Chloroform	240 µg/L	1	13.2	3,168	0.8 µg/L[10]	Y
Phosphorous	16 mg/L	1	13.2	211 mg/L	--	N
Chromium, hexavalent as Cr	0.5 µg/L	1	13.2	6.6 µg/L	11 µg/L[6,10]	N
Nickel	0.002 µg/L	1	13.2	0.026 µg/L	52 µg/L[4,10]	N
Zinc	0.05 µg/L	1	13.2	0.66 µg/L	4 µg/L[5]	N
Cadmium	0.0002 µg/L	1	13.2	0.003 µg/L	0.72 µg/L[10]	N
Copper	0.009 µg/L	1	13.2	0.12 µg/L	10 µg/L[6]	N
Cyanide	0.004 µg/L	1	13.2	0.053 µg/L	0.52 µg/L[10]	N

(1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected are included in this analysis.
(2) Based on *C. dubia toxicity*.
(3) WET tests; 8 test results for each test species/WET method: fish (2 fails), invertebrate (3 fails), algae (1 fail).
(4) Basin Plan objective is based on nickel salts. Most stringent criterion is based on soft water (<100 mg/L CaCO3).
(5) Most stringent Basin Plan criterion is based on soft water (<100 mg/L CaCO3).
(6) Basin Plan, Table 3-2, 3-3, or 3-5 (site-specific objectives for Santa Ynez River near Solvang).
(7) CTR Criterion Maximum Concentration (CMC).
(8) CTR Criterion Continuous Concentration (CCC); no CTR CMC criteria.
(9) California Statewide Mercury Provisions.
(10) EPA 304(a) Aquatic Life Criteria or Human Health Criteria.
(11) National Primary Drinking Water Criteria.
(12) CTR Human Health Criteria.

Flow

Limits have been carried over from the previous permit limit. The facility was changed in 2014 and now has a design capacity of 0.32 mgd, but the operator has not requested a change in flow limits and has no current plans to increase facility flow capacity. Accordingly, EPA is retaining the flow limit of 0.20 MGD.

Streamflow (upstream)

A monitoring requirement has been added for Zanja de Cota Creek in order to characterize future dilution potential.

BOD_5 and TSS

The permit requires the permittee to meet discharge limits for BOD_5 and TSS that are more stringent than those defined in 40 CFR §133.02. Specifically, EPA used best professional judgement to impose requirements in the permit consistent with California Department of Drinking Water criteria in California Code of Regulations (CCR) Title 22, §60304, et seq., for the use of recycled water. These more stringent standards are consistent with the discharge requirements for other municipal wastewater treatment facilities in the area that are capable of consistently meeting a tertiary level of treatment.

As listed below, the permit establishes an average monthly limit of 10 mg/L and an average weekly maximum of 15 mg/L for BOD_5 and TSS. These limits are more stringent than the technology-based standards for BOD_5 and TSS described in Section VI.A. Under 40 CFR §122.45(f), mass limits are also

required for BOD_5 and TSS. Based on the facility flow limit, mass-based limits are included in the permit.

BOD_5

Concentration-based Limits

30-day average – 10 mg/L
7-day average – 15 mg/L

Mass-based Limits

30-day average – (10 mg/L)(0.20 MGD)(8.345 conversion factor) = 17 lbs/day
7-day average – (15 mg/L)(0.20 MGD)(8.345 conversion factor) = 25 lbs/day

TSS

Concentration-based Limits

30-day average – 10 mg/L
7-day average – 15 mg/L

Mass-based Limits

30-day average – (10 mg/L)(0.35 MGD)(8.345 conversion factor) = 17 lbs/day
7-day average – (15 mg/L)(0.35 MGD)(8.345 conversion factor) = 25 lbs/day

Settleable Solids

EPA established a settleable solids TBEL. Technology-based treatment requirements may be imposed on a case-by-case basis under Section 402(a)(1) of the CWA, to the extent that EPA-promulgated effluent limitations are inapplicable. In other words, the regulation at 40 CFR §125.3(c)(2) allows the permit writer to consider the appropriate technology for the category or class of point sources and any unique factors relating to the applicant.

Turbidity

EPA is removing the effluent limit for turbidity, as there is no reasonable potential to exceed the water quality objective.

Total Coliform Bacteria

The permit requires the permittee to meet discharge limits for total coliform bacteria based on objectives for municipal supply. Limits have been exceeded during the previous permit term, which indicates reasonable potential to exceed those limits. EPA is retaining the previous effluent limit as 2.2 MPN/100mL as a daily maximum.

Ammonia

Treated and untreated domestic wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process. The Basin Plan requires that the discharge of wastes shall not cause concentrations of unionized ammonia to exceed 0.025 mg/L in all inland surface waters. Effluent limitations have been carried over from the previous permit.

Dissolved Oxygen

The Basin Plan requires dissolved oxygen to not be reduced below 5.0 mg/l at any time for all inland surface waters. The analysis indicates no reasonable potential for violations of the water quality objective, and the limit for biological oxygen demand will also address dissolved oxygen. Accordingly, the limit has been removed.

pH
The Basin Plan requires that pH values not be depressed below 7.0 in any inland surface water. It also requires pH values to not be raised above 8.3 to be protective of most beneficial uses in the receiving water. WQBELs have been established accordingly, carried over from the previous permit.

Total Dissolved Solids
The effluent limits have been changed from the previous permit. For the previous permit, EPA conducted a third-order polynomial regression to model the correlation between TDS concentration in the effluent and TDS concentration in the creek as it leaves the Reservation (R^2=0.541), concluding that an effluent concentration of 1,170 mg/L corresponded to a downstream concentration of 700 mg/l, the water quality objective for Solvang. The WQBEL was set at 1,000 mg/L, because the average concentration of TDS in effluent in 2013 (1,050 mg/l) suggested reasonable potential to exceed the water quality objective even with the potential dilution.

Since 2014, however, upstream changes to Zanja de Cota Creek have reduced surface flows; thus, the previous analysis considering the potential for dilution is no longer appropriate. This is particularly relevant since groundwater recharge of the shallow, perched groundwater basin, used as a water supply, is an important beneficial use of the surface waters. Moreover, TDS concentrations in the effluent have continued to increase, with a monthly average value of 1,183 mg/L since 2014; concentrations greater than 1,000 mg/L exceed the tolerance levels for *C. dubia* and could potentially contribute to further toxicity exceedances. Accordingly, using best professional judgement to incorporate these considerations and current performance, EPA is establishing an effluent limitation of 700 mg/L, corresponding to the surface water objective for the Santa Ynez River near the facility. The objective for TDS is expressed as a running annual average, to account for seasonal variations.

A requirement to monitor TDS intake concentrations has been added.

Sodium
Sodium concentrations averaged 269 mg/L, and the maximum was 340 mg/L. These are well above the Basin Plan irrigation guidance of 60 mg/L. The permit establishes a WQBEL of 60 mg/L for sodium.

Oil & Grease
EPA considers Oil & Grease as a conventional pollutant pursuant to 304(a)(4) of the CWA and 40 CFR 401.16. The Basin Plan indicates that waters shall not contain oils, greases, waxes, or other similar materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water that cause nuisance, or that otherwise adversely affect beneficial uses. Data has demonstrated that oil & grease is present in the applicant's effluent. Therefore, EPA is setting effluent limitations consistent with similar permits for secondary treatment facilities of 15 mg/l maximum daily and 10 mg/l average monthly, measured quarterly, which is carried over from the previous permit.

Nitrate (as N)
The Primary MCL for nitrate for protection of municipal and domestic use is 10 mg/L. EPA's Ambient Water Quality Criteria for the Protection of Human Health is also 10 mg/L for non-cancer effects. DDW adopted a Primary MCL of 10 mg/L for the sum of nitrate and nitrite (measured as N). Based on reasonable potential to exceed 10 mg/L, effluent limitations are established for nitrate plus nitrite (measured as N). Limits of 5 mg/L (daily maximum) and 7.5 mg/L (monthly average) are retained from the previous permit.

Phosphorus

No limit has been set at this time. Annual monitoring is required.

Chronic Toxicity
A chronic toxicity WQBEL of Pass ("0") for *Ceriodaphnia dubia* reproduction (EPA freshwater chronic WET method and the Test of Significant Toxicity (TST) statistical approach) and for *Selenastrum capricornutum* are established due to reasonable potential for chronic toxicity. *Ceriodaphnia* is the most sensitive of the WET test species, and *Selenastrum* will also address potential toxicity associated with cooling tower removal of scale with an algicide. Adding a WQBEL for a third species is not needed.

Turbidity
Turbidity is not expected to exceed water quality objectives, so the previous limit has been removed. Basin Plan objectives are defined in units that are different than those in the permit; the measured effluent levels are low enough to account for differences in the units.

Total Coliform
Total coliform limits were exceeded on more than one occasion; the previous limit is carried over in this permit.

Total Residual Chlorine
Total residual chlorine was detected in the effluent. The maximum concentration was 8.8 µg/L, which suggests reasonable potential for daily maximum residual chlorine levels to exceed EPA 304(a) aquatic life criteria. Accordingly, a WQBEL of 11 µg/L, corresponding to the aquatic life criteria, is established whenever chlorine is used in the treatment process.

Metals and Priority Pollutants
Metals and other priority pollutants were largely undetected in the effluent sample. Chromium (hexavalent) nickel, zinc, cadmium, and copper were detected in the effluent, but in concentrations that do not indicate reasonable potential for exceeding the most stringent water quality objective, so no limits are established at this time.

Cyanide was detected in the effluent, but the concentration does not indicate reasonable potential to exceed EPA 304(a) aquatic life criteria, so no limits are set at this time. Dibromochloromethane was detected in the effluent, but no criteria exist for this compound, so no limits are set at this time.

Dichlorobromomethane and bromoform were both detected at levels that indicate reasonable potential to CTR human health criteria. WQBELs of 0.56 µg/L for dichlorobromomethane and 4.3 µg/L for bromoform are established in this permit. Chloroform detected in the effluent does indicate reasonable potential to exceed EPA 304(a) human health criteria; a WQBEL is not currently established for this advisory criterion.

D. Anti-Backsliding
Section 402(o) and 303(d)(4) of the CWA and 40CFR 122.44(l)(1) prohibits the renewal or reissuance of an NPDES permit that contains effluent limits and permit conditions less stringent than those established in the previous permit, except as provided in the statute and regulation.

The permit removes previous limits for dissolved oxygen and turbidity. In accordance with the exception allowed in 40 CFR 122.44(l)(2)(i)(B)(1), the limits have been removed as a result of new information used in determining that these pollutants do not demonstrate reasonable potential to exceed water quality standards and no increase in flow is authorized. Other permit limits are equal to or more stringent than those in the previous permit.

E. Antidegradation Policy

EPA's antidegradation policy under CWA Section 303(d)(4) and 40 CFR 131.12 require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit does not include a mixing zone; therefore, these limits will apply at the end of pipe, without consideration of dilution in the receiving water. A priority pollutant scan has been conducted of the effluent, demonstrating that most pollutants will be discharged below detection levels. Limitations removed from the previous permit are for pollutants that do not demonstrate reasonable potential to exceed water quality standards. The permit does not allow for any changes in discharge volume, quality, or location from the previous permit. Additional effluent limitations are added for *C. dubia* and *S capricornutum* whole effluent toxicity. Limitations added for dichlorobromomethane, bromoform, chloroform, and total residual chlorine address the reasonable potential to exceed water quality criteria. Limits for TDS were lowered to address the lack of available dilution. Accordingly, the discharge is not expected to adversely affect receiving waterbodies or result in any degradation of water quality.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

The Central Coast Basin Plan contains narrative water quality standards for pollutants applicable to the receiving water. Thus, the permit incorporates applicable narrative water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of pollutant parameters are unknown or where data are insufficient to determine reasonable potential, monitoring may be required for pollutant parameters where effluent limits have not been established.

A. Effluent Monitoring and Reporting

The permit requires effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the permit. All monitoring data shall be reported on monthly DMRs and submitted quarterly as specified in the permit. All DMRs are to be submitted electronically to EPA using NetDMR.

B. Priority Toxic Pollutants Scan

A Priority Toxic Pollutants scan shall be conducted during the fourth year of the five-year permit term to ensure that the discharge does not contain toxic pollutants in concentrations that may cause an exceedance of water quality standards. The permittee shall perform all effluent sampling and analyses for this scan in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the permit or by EPA. 40 CFR 131.36 provides a complete list of Priority Toxic Pollutants.

C. Whole Effluent Toxicity (WET) Testing

Six WET test results indicated that chronic toxicity is present in the effluent discharge at unacceptable levels. Accordingly, this permit establishes a chronic WET WQBEL of Pass (“0”) using the TST

statistical approach (see Part I, Table 1). The permit requires the permittee to conduct short-term chronic toxicity tests with the water flea, *Ceriodaphnia dubia* (survival and reproduction test) and the green alga, *Selenastrum capricornutum*. These maximum daily chronic WET limits provide high confidence that a discharge meeting these WQBELs is indeed achieving a long-run average Percent (%) Effect of < 25 for chronic toxicity (2010 TST Technical Document) and will protect the applicable narrative water quality standard for toxicity.

It is not protective to set a less stringent daily WET limit (40 CFR 122.44(d)(1)), or practicable to set a weekly or monthly WET limit (40 CFR 122.45(d)) because effluent monitoring for chronic toxicity is infrequent. Over the term of this permit, the daily WET limit for chronic toxicity using the TST statistical approach will protect aquatic life beneficial uses from unacceptable chronic toxicity with high confidence.

Aquatic life is a public resource protected in surface waters covered by the CWA. For scores of individual chemicals and compounds, chemical-specific concentration levels protective against toxicity to aquatic life have not been developed or set as water quality standards. These chemicals and compounds can eventually make their way into NPDES effluents and their receiving surface waters. When this happens, toxicity tests of effluents can demonstrate toxicity due to present, but unknown, toxicants (including possible synergistic and additive effects), signaling a water quality problem for aquatic life. Samples collected from the effluent and tested for toxicity in a laboratory using EPA's WET methods are used to determine if the effluent causes toxicity to aquatic organisms, providing evidence of whether CWA requirements protecting aquatic life from toxicity are met in surface waters receiving the NPDES discharge.

EPA's WET methods are systematically-designed instructions for laboratory experiments that expose sensitive life stages of test species (e.g., a fish, an invertebrate, and an algae) to both an NPDES effluent sample and a negative control sample. During the test, each exposed organism may show a difference in biological response between the control and the test sample. Undesirable biological responses include eggs that are not fertilized; early life stages that grow too slowly or abnormally; or other effects, including death. The different biological responses of the organisms in the effluent group and the organisms in the control group are summarized using common descriptive statistics (e.g., means, standard deviations, coefficients of variation), which are then compared using an applicable inferential statistical approach (i.e., hypothesis testing or point estimate model) specified in the NPDES permit. The chosen statistical approach for this permit is compatible with both the experimental design of EPA's WET method and the applicable toxicity water quality standard. Based on the statistical comparison used by the TST statistical approach, a toxicity test will demonstrate if the effluent is unacceptably toxic.

Following 40 CFR 122.44(d)(1) and guidance for determining reasonable potential in Chapter 3 of the EPA TSD, Chapter 2 in *EPA Regions 8, 9 and 10 Toxicity Training Tool* (January 2010), and Appendix E in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), reasonable potential for chronic toxicity has been established for this discharge and WQBELs for *Ceriodaphnia dubia* reproduction, TRC, and Total Ammonia have been established in the permit.

The TST's null hypothesis for chronic toxicity (H_o) is: In-stream Waste Concentration (IWC) mean response (100% effluent) ≤ 0.75 Control mean response. The TST's alternative hypothesis is (H_a): IWC mean response (100% effluent) > 0.75 Control mean response. Results obtained from a single chronic toxicity test are analyzed using the TST approach, and an acceptable level of chronic toxicity is demonstrated by statistically rejecting the null hypothesis. For each chronic toxicity test, the permittee is required to report Pass ("0") or Fail ("1") on the DMR form. Pass ("0") constitutes rejection (i.e.,

statistical fail) and Fail "1" constitutes non-rejection (i.e., statistical pass) of the TST null hypothesis (H_o), at the required IWC (i.e., IWC mean response (100% effluent) ≤ 0.75 × Control mean response). This is determined by following the instructions in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A.

For NPDES samples for WET testing, the sample hold time begins when the 24-hour composite sampling period is completed (or the last grab sample in a series of grab samples is taken) and ends when WET testing with the sample begins (i.e., initiation of WET test). 40 CFR 136.3(e) states that the WET method's 36-hour hold time cannot be exceeded unless a variance of up to 72-hours is authorized by EPA.

IX. SPECIAL CONDITIONS

A. Biosolids

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids in accordance with 40 CFR Part 503 are incorporated into the permit. The permit also includes, for dischargers who are required to submit biosolids annual reports, including major POTWs that prepare sewage sludge and other facilities designated as "Class 1 sludge management facilities," electronic reporting requirements. Permittees shall submit biosolids annual reports using EPA's NPDES Electronic Reporting Tool ("NeT") by February 19th of the following year. This facility ships sludge offsite to Engel & Gray Inc. in Santa Maria, CA. The receiver achieves class A pathogen reduction using aerobic processes plus raised temperature. Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids in accordance with 40 CFR Part 503 are incorporated into the permit.

B. Pretreatment

No nondomestic facilities discharge pollutants that pass through or interfere with the operations of this POTW or are otherwise subject to pretreatment standards. Accordingly, EPA has not incorporated any pretreatment requirements into this permit.

C. Capacity Attainment and Planning

The permit requires that a written report be filed within ninety (90) days if the average dry-weather wastewater treatment flow for any month exceeds 90 percent of the annual dry weather design capacity of the waste treatment and/or disposal facilities.

D. Development and Implementation of Best Management Practices

The permittee shall develop and implement BMPs for pollution prevention. Pursuant to 40 CFR 122.44(k)(4), EPA may impose Best Management Practices (BMPs) which are "reasonably necessary…to carry out the purposes of the Act." The pollution prevention requirements or BMPs in the permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Thus, the permit requires that the permittee develop (or update) and implement a Pollution Prevention Plan with appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering Zanja de Cota Creek and other surface waters while performing normal processing operations at the facility.

E. TRE/TIE Process for Whole Effluent Toxicity

Within 90 days of the permit effective date, the permittee shall prepare and submit a copy of their Initial Investigation TRE Workplan (1-2 pages) for chronic toxicity to EPA for review. If effluent toxicity is demonstrated based on chronic WET test results, as specified by the WET conditions of this permit, the

permittee is required to: conduct accelerated effluent monitoring for chronic toxicity and implement their Initial Investigation TRE Workplan; develop and implement a detailed TRE Workplan; and conduct a TRE.

F. Asset Management

40 CFR 122.41(e) requires permittees to properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Asset management planning provides a framework for setting and operating quality assurance procedures and ensuring the permittee has sufficient financial and technical resources to continually maintain a targeted level of service. Asset management requirements have been established in the permit to ensure compliance with the provisions of 40 CFR 122.41(e).

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Consideration of Environmental Justice

EPA conducted a screening level evaluation of environmental justice (EJ) vulnerabilities in the community posed to residents in the vicinity of the permitted POTW using EPA's EJSCREEN tool (https://www.epa.gov/ejscreen). The purpose of the screening is to identify areas disproportionately burdened by pollutant loadings and to consider demographic characteristics of the population living near the discharge when drafting permit conditions.

On May 15, 2019, EPA conducted an EJSCREEN analysis of the community near the vicinity of the outfall. Of the 11 environmental indicators screened through EJSCREEN, the evaluation found no elevated indicator scores for the following factors:

- PM 2.5
- Ozone
- NATA Diesel PM
- NATA Cancer Risk
- NATA Respiratory HI
- Traffic Proximity
- Lead Paint Indicator
- Superfund Proximity
- RMP Proximity
- Hazardous Waste Proximity
- Wastewater Discharge Indicator

EPA also considers the characteristics of the wastewater treatment facility operation and discharges, and whether those discharges pose exposure risks that the NPDES permit needs to further address. EPA found no evidence to indicate the treatment facility discharge poses a significant risk to residents. EPA concludes that the facility is unlikely to contribute to any EJ issues. Furthermore, EPA believes that by implementing and requiring compliance with the provisions of the Clean Water Act, which are designed to ensure full protection of human health, the permit is sufficient to ensure the effluent discharges do not cause or contribute to human health risk in the vicinity of the facility.

B. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

On May 17, 2019, EPA downloaded from the U.S. Fish and Wildlife's (FWS) Information for Planning and Consultation (IPaC) Web site (https://ecos.fws.gov/ipac/) a list of threatened and endangered species

near the facility and the discharge point to Zanja de Cota Creek, as well as other information relevant to a consultation. EPA also communicated directly with the Ventura, California FWS Office.

IPaC provided the following list (E = endangered, T = threatened):

Status	Species/Listing Name	Notes
E	Least Bell's Vireo *Vireo bellii pusillus*	Not within critical habitat.
E	Southwestern Willow Flycatcher (*Empidonax traillii extimus)*	Not within critical habitat.
T	California Red-legged Frog *Rana draytonii*	Not within critical habitat.
T	Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Not within critical habitat.
E	Gambel's Watercress *Rorippa gambellii*	No designated critical habitat.
E	Marsh Sandwort *Arenaria paludicola*	No designated critical habitat.

Although critical habitat for the California Red-Legged frog includes portions of the upper Santa Ynez River, the Zanja de Cota Creek and lower Santa Ynez River (below Lake Cachuma) are not included as part of the species' critical habitat. Additionally, three studies by the Chumash Environmental Office conducted in 2000, 2003 and 2008/2009 all indicated the complete absence of the California Red-Legged Frog from the east and west forks of the Zanja de Cota Creek. These studies were conducted in accordance with the standard methods used for a protocol level study according to the United States Fish and Wildlife Service guidance. No standing ponds or water exist at the facility or the nearby property. Thus, the California Red-Legged frog is not believed to be present in the Zanja de Cota Creek, beyond speculative incidental contact.

Critical habitat for the vireo does not extend to the lower Santa Ynez River, while critical habitat for the flycatcher begins near Buellton, approximately 5 miles downstream of the Zanja de Cota Creek's confluence with the Santa Ynez River. The Least Bell's vireo and Southwestern Willow flycatcher are not believed to be present in the Zanja de Cota Creek, beyond speculative incidental contact.

The effluent from the discharger into Zanja de Cota Creek does not have any nexus with regional vernal pools. Therefore, the Vernal Pool fairy shrimp is not believed to be impacted by the discharge.

The two plant species are found exclusively in freshwater marshes and occasionally brackish marshes: thus, Gambel's watercress and Marsh Sandwort are not believed to be present in the freshwater Zanja de Cota Creek.

The permit authorizes the discharge of tertiary treated sanitary wastewater into Zanja de Cota Creek which, as outlined above, is not habitat for threatened and endangered species. The permit contains provisions for monitoring conventional pollutants, toxic chemicals, and nonconventional pollutants, in compliance with Federal requirements and California Water Quality Standards. Requirements are written to ensure an appropriate level of effluent quality that is protective of beneficial uses of the Creek, including wildlife, as well as rare, threatened, and endangered species habitat.

In considering all the information available, EPA believes that the discharge will have "no effect" on any of these listed species or critical habitat. EPA provided copies of the draft fact sheet and the draft permit to the USFWS during the public notice period.

C. Impact to Coastal Zones

The Coastal Zone Management Act (CZMA) requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

The permit does not affect land or water use in the coastal zone.

D. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to determination whether Federal actions may adversely impact Essential Fish Habitat (EFH).

The permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The permit does not directly discharge to areas of essential fish habitat. Thus, EPA has determined that the permit will not adversely affect essential fish habitat.

E. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR §800.3(a)(1), EPA has determined that issuing this NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

F. Water Quality Certification Requirements (40 CFR 124.53 and 124.54)

This permit is being issued by EPA and there is no corresponding State, Territory, or Tribal jurisdiction for the discharge location, therefore EPA will be deemed to have waived certification prior to the final issuance of the permit. Any persons interested in commenting on this were provided an opportunity to do so during the public comment period for the draft permit.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region 9 Standard Federal NPDES Permit Conditions.

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR 124.10)
The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR 124.10)
Notice of the draft permit was posted on the EPA website on February 27, 2020. The comment period closed on May 6, 2020. EPA received no comments on the draft permit during this period.

C. Public Hearing (40 CFR 124.12(c))
A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

XIII. CONTACT INFORMATION

Comments and additional information relating to this proposal may be directed to:

Janet Parrish
U.S. EPA Region 9
75 Hawthorne Street (WTR 2-3)
San Francisco, California 94105

415-972-3456
parrish.janet@epa.gov

Electronic submittals should be provided to R9NPDES@epa.gov. Biosolids reports should be submitted through the NeT e-reporting system (https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws for more information).

XIV. REFERENCES

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. Office of Water, EPA. EPA/505/2-90-001.

EPA. 2013. *National Recommended Water Quality Criteria*. Office of Water, EPA. Aquatic Life Criteria Table. https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table#table

EPA. 2015. *National Recommended Water Quality Criteria*. Office of Water, EPA. Human Health Criteria Table. https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table

EPA. 2010. *U.S. EPA NPDES Permit Writers' Manual*. Office of Water, EPA. EPA-833-K-10-001.