NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FINAL PERMIT FACT SHEET December 2023

Permittee Name:	Lytton Rancheria of California
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NPDES Permit No.:	CA0000437

I. STATUS OF PERMIT

Lytton Rancheria of California (the permittee) has applied for a new National Pollutant Discharge Elimination System (NPDES) permit to authorize the discharge of treated effluent from Lytton Wastewater Treatment Plant (the facility) to Gumview Creek located on Lytton Rancheria tribal land west of Windsor, Sonoma County, California. A complete application was submitted on December 13, 2022, and supplemental information was provided February 6, 2023. EPA Region 9 has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act (CWA), which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

EPA is issuing a new NPDES permit for wastewater discharges from the Lytton Wastewater Treatment Plant (WWTP). EPA has classified this permittee as a minor new discharger.

Permit	Specific Conditions in Final Permit	Reason for inclusion
Condition	(2024 – 2029)	
Flow Discharge	Discharges are prohibited annually during the	Required to ensure discharge meets
Limitations	period of May 15 through September 30 and	downstream water quality standards (i.e.,
	during all other periods when the waste	Water Quality Control Plan for the North
	discharge flow is greater than one percent of	Coast Region).
	the flow at Mark West Creek USGS gauging	
	station #11466800. The discharge shall be of	
	tertiary treated wastewater.	
Phosphorus	EPA has established a phosphorus loading	The PLR effluent limitation ensures the
Loading	limitation in the form of a Phosphorus Load	discharge does not cause or contribute to
Discharge	Ratio (PLR). The permit limit is set to a value	an exceedance of the downstream water
Limitations	of 1.0 as a minimum. The permittee must	quality standard for biostimulatory

II. SIGNIFICANT PROVISIONS WITHIN THE PERMIT

Permit Condition	Specific Conditions in Final Permit (2024 – 2029)	Reason for inclusion
	monitor and report phosphorus concentration effluent values in addition to the PLR value.	substances. EPA established a compliance schedule for this limit in the permit in accordance with 40 C.F.R. § 122.47. See Fact Sheet Section IX.E.
Ammonia effluent limit	Compliance with the ammonia effluent limit will be determined using a ratio, called the ammonia impact ratio (AIR). The permit limit is set to a value of 1.0 as a maximum. The permittee also must monitor and report ammonia effluent values in addition to the AIR value.	AIR provides more flexibility than a specific, fixed effluent concentration and is easier than a floating limit to determine and report compliance.
Recycled Water Standards	Recycled water standards included in the permit.	There is a potential for human contact with the effluent, so EPA has included recycled water standards in the permit to protect public health.
Priority Pollutant Scan	Annual monitoring requirement for priority pollutants.	Required to determine if the discharge has the reasonable potential to exceed downstream water quality standards.
Chronic Toxicity Testing	Annual chronic toxicity testing requirement with an initial species sensitivity screening.	Required to determine if the discharge has the reasonable potential to exceed narrative toxicity water quality standards.
Asset Management and Climate Change	Asset management and climate change requirements.	Ensures the permittee has sufficient financial and technical resources for continuous operation and maintenance for a targeted level of service.
Receiving Water Flow Rate Study	Receiving water flow rate study required in the permit.	Required to ensure the discharge meets the effluent discharge limitations for flow in the receiving waters. See Fact Sheet Section XI.F.

III. GENERAL DESCRIPTION OF FACILITY

Lytton Wastewater Treatment Plant (WWTP) is a new wastewater treatment facility being constructed to support planned developments that include housing, a community center, retreat house, and other support facilities serving approximately 730 people. All wastewater generated by the planned developments will be treated at Lytton WWTP. There are no anticipated industrial sources discharging to the facility.

On-site wastewater storage and disposal facilities will include recycled water seasonal storage basins, spray fields, and the use of recycled water within the Rancheria for landscape and vineyard irrigation. Off-site recycled water use is not proposed at this time.

The facility will discharge intermittently, as needed, to manage storage levels in the recycled water storage basins. Treated wastewater will be discharged seasonally to Gumview Creek

through Outfall 001 at $38^{\circ} 32' 42.49''$ N and $122^{\circ} 49' 54.25''$ W. Biosolids will be hauled to a landfill.

A NEPA Environmental Assessment (EA) for the first phase of the development was approved by the Bureau of Indian Affairs in June 2012. The EA evaluated a WWTP, including on-site and surface water disposal, under Alternatives B and C. Alternative B includes development of an on-site wastewater treatment and reclamation facility (WTRF) including a treatment plant, storage pond, pump stations, associated infrastructure, and landscaped areas or other spray fields for recycled water irrigation (AES, 2011).

The SIC code for this facility is 4952 (Sewerage Systems).

IV. DESCRIPTION OF RECEIVING WATER

The WWTP effluent will be primarily stored or reused on-site, and any remainder effluent will be discharged to Gumview Creek. Gumview Creek is located within the Russian River Watershed, Middle Russian River hydrologic area, and Mark West hydrologic sub-area. The proposed location and discharge point for the facility occurs within the headwater region of Gumview Creek. Gumview Creek flows from the discharge location along the southeast border of the Rancheria before flowing off tribal land to the south. Gumview Creek flows into Windsor Creek approximately 4.2 miles downstream from the discharge location. Windsor Creek flows into Mark West Creek, which is a tributary to the Russian River.

See Attachment B of the permit for location maps. See Section VI.B.1 of this fact sheet for more information regarding the standards, designated uses, and impairments of the receiving water.

V. DESCRIPTION OF DISCHARGE

The facility includes a tertiary treatment system that will yield effluent with Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS) concentrations below EPA's secondary treatment requirements. The influent to the facility is domestic wastewater, and no industrial sources discharge to the facility. The treatment system consists of a fine screen, membrane bioreactor treatment system, and ultraviolet disinfection system. The membrane bioreactor system is designed to remove nutrients, bacteria, TSS, and BOD₅ in the effluent to levels lower than secondary treatment capabilities. Sodium hypochlorite will be added to the recycled water to limit biological growth in the distribution piping. The facility has a design flow of 0.1 million gallons per day (MGD) average daily, 0.25 MGD maximum daily, and 0.3 MGD peak flow capacity. Pollutants of concern for this discharge include ammonia, nitrate, oxygen demand, pathogens, temperature, nutrients, and chlorine.

Effluent data will be publicly available on EPA's Enforcement and Compliance History Online (https://echo.epa.gov/) after the permittee has begun submitting Discharge Monitoring Reports (DMRs).

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

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

A. Applicable Technology-Based Effluent Limitations

Publicly Owned Treatment Works (POTWs)

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 BOD₅, TSS, and pH, as defined in 40 Code of Federal Regulations (CFR) § 133.102, are listed below. Mass limits, as required by 40 CFR § 122.45(f), are included for BOD₅ and TSS. Mass-based limits are calculated using the facility design flow rate (0.1 MGD), in accordance with 40 CFR § 122.45(b)(1).

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)).

BOD₅

Concentration-based Limits

30-day average – 30 milligrams per liter (mg/L) 7-day average – 45 mg/L Removal Efficiency – minimum of 85%

Mass-based Limits

30-day average – (30 mg/L)(0.1 MGD)(8.345 conversion factor) = 25.00 lbs/day7-day average – (45 mg/L)(0.1 MGD)(8.345 conversion factor) = 37.55 lbs/day

<u>TSS</u>

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)(0.1 MGD)(8.345 conversion factor) = 25.00 lbs/day7-day average -(45 mg/L)(0.1 MGD)(8.345 conversion factor) = 37.55 lbs/day

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

EPA has established water quality-based effluent limitations for BOD₅, TSS, and pH in the permit that are more stringent than the technology-based secondary treatment standards. See Section IV.C of this fact sheet for more information.

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations 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)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account 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

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

Lytton Rancheria of California does not have EPA-approved water quality standards for the segment of Gumview Creek on tribal land. The North Coast Regional Water Quality Control Board (Regional Water Board) has developed water quality standards for Windsor Creek (and its tributaries), Mark West Creek, and the Russian River, all downstream of the discharge outfall in this permit.

The discharge must meet applicable water quality standards at the point of entry onto State lands and must be protective of downstream uses as specified in the Water Quality Control Plan (Basin Plan) for the North Coast Region (updated June 2018). To protect downstream uses, EPA has applied these water quality standards within the Basin Plan. EPA also has applied the California Toxics Rule and the implementing procedures in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (i.e., State Implementation Policy or SIP).

The Basin Plan states on page 2-1 that the designated uses "of any specifically identified water body generally apply to all its tributaries." Gumview Creek is a tributary to Winsor Creek and Mark West Creek, which are within the Mark West hydrologic sub-area (HSA). The Basin Plan establishes water quality criteria for the following designated uses for the Mark West HSA.

MUN: Municipal and Domestic Supply

AGR: Agricultural Supply IND: Industrial Service Supply GWR: Groundwater Recharge FRSH: Freshwater Replenishment NAV: Navigation REC1: Water Contact Recreation REC2: Non-Contact Water Recreation COMM: Commercial and Sport Fishing WARM: Warm Freshwater Habitat COLD: Cold Freshwater Habitat WILD: Wildlife Habitat RARE: Rare, Threatened, or Endangered Species MIGR: Migration of Aquatic Organisms SPWN: Spawning, Reproduction, and/or Early Development

The Basin Plan lists the following as potential designated uses for the Mark West HSA:

SHELL: Shellfish Harvesting AQUA: Aquaculture PRO: Industrial Process Supply POW: Hydropower Generation

Windsor Creek and its tributaries are listed as impaired in the California CWA Section 303(d) list of waters requiring a total maximum daily load (TMDL), approved by EPA in 2022, (303(d) List or List) for sediment/siltation and temperature. Mark West Creek (downstream of the confluence with the Laguna de Santa Rosa) is listed as impaired for aluminum, manganese, dissolved oxygen, phosphorus, sedimentation/siltation, and temperature. The Russian River is listed as impaired for sediment/siltation and temperature. The Russian River is also impaired for aluminum, indicator bacteria, and specific conductivity for segments that do include and are not near the river segment where Mark West Creek flows into the Russian River and thus are not considered further.

Mark West Creek (downstream of the confluence with the Laguna de Santa Rosa) was added to the List in 1990 for high levels of ammonia and low dissolved oxygen (DO). A TMDL in the form of a Waste Reduction Strategy¹ was approved by EPA in 1995 for ammonia and DO with the objective of using existing programs to reduce wasteload inputs into the Laguna de Santa Rosa. The Waste Reduction Strategy concluded that high ammonia levels were the result of point and non-point source nutrient inputs. Following the implementation of the TMDL, the Laguna de Santa Rosa was delisted for ammonia and DO in 1998; however, DO levels in mainstream Mark West Creek continue to fall below the minimum Basin Plan objective of 7.0 mg/L. Based on the latest available information, the North Coast Regional Water Board has determined that phosphorus is the limiting nutrient driving biostimulatory conditions (excess algal biomass and low dissolved oxygen levels) in the mainstem Mark West Creek below the confluence with the Laguna.

¹<u>https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/laguna_de_santa_rosa</u>/pdf/LagunaWasteReductionStrategy.pdf

The Regional Water Board is drafting additional TMDLs² for nutrients, dissolved oxygen, temperature, sediment/siltation, and indicator bacteria for the entire Laguna de Santa Rosa Watershed, including Mark West Creek and all tributaries. These TMDLs have not been reviewed or approved by EPA.

To support implementation of the 1995 TMDL, the Regional Water Board has established the Nutrient Offset Program (NOP) and Water Quality Trading Framework (WQTF). These programs are designed to reduce phosphorus loads into the Laguna de Santa Rosa watershed and remove legacy phosphorus loads in existing sediments by creating a market for credits generated through watershed restoration projects and other nutrient reduction actions.

Parameter	Units	Number	Sampling Location			
		of	Gumview	Gumview	Windsor	Mark West
		Samples	Creek	Creek	Creek ⁽³⁾	Creek ⁽⁴⁾
			Discharge	Downstream		
			Point ⁽¹⁾	(2)		
DO	mg/L	1	0.15	0.11	0.10	0.09
pН	S.U.	1	6.8	6.8	7.1	7.1
Temperature	°F	1	54.46	55.69	57.47	57.29
Turbidity	NTU	1	0.65	3.3	1.5	4.6
Hardness	mg/L	1	$0.96^{(5)}$	110	140	170

Table 1: Background water quality data

(1) Gumview Creek at proposed discharge location

- (2) Gumview Creek at Starr Rd. sampling location approximately 6,600 linear feet downstream of the proposed discharge location.
- (3) Windsor Creek sampling location approximately 3 miles downstream of the proposed discharge location.
- (4) Mark West Creek sampling location, approximately 4.2 miles downstream of the proposed discharge location.
- (5) Value reported by permittee in application.

Applicable water quality standards establish water quality criteria for the protection of aquatic wildlife from acute and chronic exposure to certain metals that are hardness dependent. Based on available hardness data for the discharge, the permit establishes water quality standards for these metals based on a hardness value of 110 mg/L. While the permittee reported a hardness value of 0.96 mg/L for a sample collected at the Gumview Creek Discharge Point, this value does not appear representative based on several other reported hardness values. This could be due to the sample being collected when there was minimal background flow. The permit requires hardness monitoring to determine the hardness of the discharge for calculating water quality standards for metals in future permits.

2. Dilution in the receiving water

²https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/laguna_de_santa_rosa

The permittee has not requested a mixing zone or provided a dilution study; therefore, no dilution was considered in the reasonable potential analysis or development of water quality-based effluent limits applicable to the discharge.

3. Type of Industry

For POTWs, typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil and grease, and solids. The influent to the facility is domestic wastewater, and no industrial sources discharge to the facility. The SIC code for this facility is 4952 (Sewerage Systems).

C. Rationale for Numeric Effluent Limits and Monitoring

There is no existing data on toxic pollutants for the discharge as the facility has yet to commence discharging. EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are not reasonably expected to be discharged in concentrations that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

Flow

Flow rates must be monitored and reported. Continuous monitoring is required. See Section VI.D. for flow limitation requirements.

BOD₅ and TSS

The Basin Plan contains the requirement that "the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger." EPA is interpreting the Basin Plan's requirement to discharge "advanced treated wastewater" to require water quality discharge restrictions for TSS and BOD₅ more stringent than technology-based secondary treatment standards. Therefore, EPA has incorporated water quality-based standards for BOD₅ more stringent than technology-based standards that are consistent with the discharge requirements for other municipal wastewater discharges in the North Coast regional area. The permit therefore establishes an average monthly limit of 10 mg/L, an average weekly maximum of 15 mg/L. These limits are more stringent than technology-based secondary treatment standards and have been incorporated into the permit. Under 40 CFR § 122.45(f), mass limits are also required for BOD₅ and TSS. Mass-based limits are calculated using the design flow and are included in the permit. Monitoring is required weekly. Final BOD₅ and TSS limits established in the permit are listed below.

BOD₅

Concentration-based Limits

30-day average – 10 milligrams per liter (mg/L) 7-day average – 15 mg/L Removal Efficiency – minimum of 85%

Mass-based Limits

30-day average -(10 mg/L)(0.1 MGD)(8.345 conversion factor) = 8.345 lbs/day7-day average -(15 mg/L)(0.1 MGD)(8.345 conversion factor) = 12.52 lbs/day

<u>TSS</u>

Concentration-based Limits 30-day average – 10 mg/L 7-day average – 55 mg/L Removal efficiency – Minimum of 85%

Mass-based Limits

30-day average -(10 mg/L)(0.1 MGD)(8.345 conversion factor) = 8.345 lbs/day7-day average -(15 mg/L)(0.1 MGD)(8.345 conversion factor) = 12.52 lbs/day

Windsor Creek, Mark West Creek, and the Russian River are listed as impaired for sedimentation/siltation on the California 303(d) List (approved 2022). A TMDL has not been established to address sediment loadings. Sediments impairing the downstream waterbodies include settleable solids, suspended solids, and turbidity. EPA determined that the discharge does not contain sediment in the form of settleable solids, suspended solids, and turbidity at levels that will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the downstream waterbodies. This finding is based on the advanced level of treatment provided which reduces settleable solids, total suspended solids, and turbidity to negligible levels through filtration of the effluent. The summer discharge prohibition and the one-percent flow limitation also support this conclusion. EPA has established stringent effluent limitations for TSS and monitoring requirements for turbidity and settleable solids in the permit. EPA has also incorporated downstream narrative water quality standards for turbidity into the permit.

pH

The Basin Plan establishes that pH shall not be below 6.5 Standard Units (SU) or above 8.5 SU and that changes to ambient pH level shall not exceed 0.5 units, which is more stringent than the technology-based effluent limit of 6.0 - 9.0 SU. EPA established the effluent limit of 6.5 - 8.5 SU in the permit.

Temperature

The Mark West HSA has a cold freshwater habitat (COLD) designated use due to it providing habitat for coho salmon and steelhead trout. The Basin Plan prohibits the increase of receiving water temperature greater than 5°F above natural receiving water temperature. The receiving water is listed as impaired for temperature, and the California CWA 303(d) List (approved 2022) notes that flow alteration and removal of riparian vegetation are the primary sources of temperature impairment in the watershed.

The Basin Plan includes narrative water quality standards for temperature, which have been incorporated into the permit. Effluent monitoring requirements for temperature have been incorporated in the permit to ensure that the applicable narrative standards are not exceeded and to calculate temperature-specific ammonia criteria, as described above.

Ammonia and Ammonia Impact Ratio

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. Due to the potential for ammonia to be present in sanitary wastewater at toxic levels and due to the

conversion of ammonia to nitrate, effluent limitations are established using the Ammonia Impact Ratio (AIR).

The AIR is calculated as the ratio of the ammonia value in the effluent to the applicable ammonia water quality standard. The 2013 Final Aquatic Life Ambient Water Quality Criteria for Ammonia in freshwater contains ammonia criteria which are pH and temperature dependent. Therefore, pH, temperature, and ammonia sampling must be concurrent. See Attachment D of the permit for a sample log to help calculate and record the AIR values and Attachment E for applicable Water Quality Standards.

The permittee also must monitor and report ammonia effluent values in addition to the AIR value. AIR provides more flexibility than a specific, fixed effluent concentration and is protective of water quality standards since the value is set relative to the water quality standard. If the reported value exceeds the AIR limitation, then the effluent ammonia-N concentration exceeded the ammonia water quality criterion.

Nitrate + *Nitrite*

The receiving water has a designated use for municipal drinking water (MUN). Although the permittee nitrifies and denitrifies the discharge, inadequate or incomplete treatment creates the potential for nitrate plus nitrite to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance above the primary maximum contaminant level (MCL) for drinking water. The Basin Plan includes, by incorporation of Title 22 of the California Code of Regulations (CCR) § 6443 (Maximum Contaminant Levels – Inorganic Chemicals), a MCL of 10 mg/L for nitrate plus nitrite (measured as N). A maximum daily effluent limitation of 10 mg/L is established in the permit for nitrate plus nitrite (measured as N) to protect drinking water designated uses in the receiving water. Monitoring is required weekly.

Phosphorus

Mark West Creek is listed as impaired for phosphorus in the California 303(d) List (approved 2022). There is a reasonable potential that the proposed new discharge causes or contributes to the exceedance of the biostimulatory narrative water quality standard due to the discharge containing phosphorus. EPA has established a limitation for phosphorus in the permit in the form of a phosphorus load ratio, which is a conservative limitation to control phosphorus loading to Mark West Creek to prevent further water quality degradation and comply with 40 CFR § 122.4(i). This approach is consistent with the discharge requirements for other municipal wastewater discharges in the Laguna de Santa Rosa watershed.

The PLR limitation can be met by completing one or a combination of the following actions:

- (A) reducing the effluent concentration below detectable levels (0.005 mg/L) through source control and/or treatment;
- (B) not discharging; and/or
- (C) Generating phosphorus credits consistent with an existing water quality trading program for the watershed. Permittee must obtain EPA approval prior to acquisition and use of credits.

The Phosphorus Load Ratio is calculated as the ratio of phosphorus credits – approved by EPA and acquired consistent with an existing water quality trading program in the watershed – to pounds of phosphorus discharged. If there is no discharge or non-detect levels of phosphorus, the permittee shall submit the appropriate NODI code on its DMR.

EPA established a compliance schedule for this limit in the permit in accordance with 40 CFR § 122.47. See Section IX.E of this fact sheet.

Total Dissolved Solids/Electrical Conductivity

The Basin Plan includes numeric water quality criteria for specific conductance (at 77°F) and total dissolved solids in the form of 90% upper limit and 50% upper limit. The following criteria apply to the mainstem Russian River downstream of its confluence with Laguna de Santa Rosa:

Parameter	Units	90% upper limit ⁽¹⁾	50% upper limit ⁽²⁾
Specific Conductance (at 77°F)	micromhos	375	285
Total Dissolved Solids	mg/L	200	170

 90th percentile for a calendar year. 90% or more of the values must be less than or equal to the upper limit

(2) 50th percentile of the monthly means for a calendar year. 50% or more of the monthly means must be less than or equal to the upper limit.

Water reuse at the facility may cause the discharge to contain dissolved salts and other dissolved solids. Due to lack of discharge data, it is unknown at this time if the discharge from the new WWTP will have the reasonable potential to cause or contribute to an exceedance of water quality standards for electrical conductivity (EC) and total dissolved solids (TDS). Therefore, the permit establishes monthly monitoring requirements for EC and TDS to assess reasonable potential.

Total Coliform Bacteria

Based on the nature of wastewater treatment plant effluent and potential for human contact with the effluent, EPA has incorporated recycled water standards into the permit. Effluent from the facility is designed to meet Title 22 of the CCR disinfection standards for the recycling of wastewater. Effluent limits for total coliform organisms in the permit are established in accordance with the disinfection standards in Title 22, Chapter 3, Division 4 of the CCR. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed a most probable number (MPN) of 2.2 per 100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, as a 7-day median; 23 MPN/100 mL, at any time. The permit includes effluent limits for total coliform organisms of 2.2 MPN/100 mL, as a 7-day median; 23 MPN/100 mL, at any time. Weekly monitoring for total coliform has been established in the permit to be consistent with Title 22 requirements.

Total Residual Chlorine

While the effluent is disinfected through filtration and UV disinfection, chlorine is added prior to recycled water distribution. Sodium bisulfite will be used to remove any remining chlorine prior to discharge of effluent to surface water. Chlorine is known to be toxic for aquatic organisms, even in low concentrations. Therefore, the use of chlorine at the facility could result in toxic amounts even though chlorination is not the primary method of disinfection and it will be removed prior to discharge. The Basin Plan does not contain any criteria or objectives for chlorine concentrations. However, EPA's National Recommended Water Quality Criteria list 0.01 mg/L as a 1-hour average or 0.01 mg/L as a 4-day average for the protection of aquatic life. EPA has translated these water quality criteria into effluent limitations (Table 2) to protect the designated uses associated with aquatic life in the receiving water. A monthly average and daily maximum limit of 0.01 mg/L are established for total residual chlorine in the permit.

	Acute	Chronic ⁽¹⁾
Aquatic Life Criteria, mg/L ³	0.019	0.011
No Dilution Credit Authorized	0	0
Background Concentration	0	0
WLA (Dissolved), mg/L	0.019	0.011
WLA multiplier (99 th %)	0.321	0.527
LTA, mg/L	0.0042	0.0058
LTA _{MDL} Multiplier (99 th %)		3.11
MDL, mg/L		0.02 mg/L
LTA _{AML} Multiplier (95 th %) ⁽²⁾		1.55
AML, mg/L		0.01 mg/L

Table 2:	WOBEL	Calculations	for	Chlorine
1 uoic 2.		Curculations	101	Chiotine

(1) Derivation of permit limit based on Section 5.4.1 of USEPA's TSD

(2) LTA multiplier based on sampling frequency of four times per month per Section 5.5.3 of USEPA'S TSD.

(3) Chlorine criteria in EPA's Nationally Recommended Water Quality Criteria is listed as 19 µg/L and 11 µg/L. This was converted to mg/L to maintain consistency with the units used for the final effluent limitations.

Arsenic and Iron

Arsenic and iron are naturally occuring in the source water at levels above the MCLs. The drinking water treatment facility will treat arsenic and iron to concentrations below applicable MCLs. Based on the drinking water treatment and the nature of wastewater treatment plant effluent, there is no reasonable potential for the discharge to cause or contribute to an exceedance of the MCLs for arsenic and iron. Monitoring is not required; however, arsenic monitoring will occur in the priority pollutant scan once per permit term.

Aluminum and Manganese

The receiving water has a designated use for municipal drinking water (MUN) and is listed as impaired for aluminum. The Basin Plan includes, by incorporation of Title 22, an MCL for aluminum of 1 mg/L. The drinking water treatment plant will treat manganese to concentrations below MCLs and aluminum has not been identified as a constituent of concern for meeting the drinking water maximum contaminant levels. Based on the drinking water treatment and the nature of wastewater treatment plant effluent, there is no reasonable potential for the discharge to cause or contribute to an exceedance of the MCLs for aluminum and manganese. However, the source water may contain aluminum and manganese due to natural processes. Due to the receiving water being listed as impaired for aluminum and manganese and the potential for the source water to contain aluminum and manganese, EPA has established annual monitoring in the permit.

Hardness

Water hardness monitoring data is needed to calculate appropriate limits for toxic parameters. Thus, it is necessary to have accurate hardness information to create appropriate limits. The permit contains an annual monitoring requirement for water hardness that shall be conducted concurrently with the annual priority pollutant scan.

Priority Pollutant Scan and Chronic Toxicity

Priority pollutant and chronic toxicity monitoring requirements are described below in Sections VIII.B and C, respectively.

D. Flow Limitations

The Basin Plan includes an annual prohibition against discharge to the Russian River and its tributaries during the period May 15 through September 30 and all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow. From the Basin Plan:

"Section 13243 of the Porter-Cologne Water Quality Control Act authorizes the Regional Water Board - in a water quality control plan or in waste discharge requirements - to specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted. Under this authority and in order to achieve water quality objectives, protect present and future beneficial water uses, protect public health, and prevent nuisance, the Regional Water Board declares that point source waste discharges, except as stipulated by the Thermal Plan, the Ocean Plan, and the action plans and policies contained in the Point Source Measures section of this Water Quality Control Plan, are prohibited in the following locations in the Region:

North Coastal Basin: The Russian River and its tributaries during the period of May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow as set forth in NPDES permits. In addition, the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 mpn/100 ml."

Flow Limitations for Outfall 001 discharge to Gumview Creek

Outfall 001 discharges to Gumview creek, a tributary to Windsor Creek and Mark West Creek. In accordance with restrictions contained in Basin Plan, the permit prohibits the discharge of effluent to Gumview Creek (Outfall 001) from May 15 through September 30 each year. During the period of October 1 through May 14, the permit limits the discharge of effluent to Gumview Creek (Outfall 001) to not exceed one percent of the natural flow of Mark West Creek in any one day. The permit establishes flow monitoring requirements to meet the one percent flow restriction based on flow measured at the Mark West Creek USGS gauging station #11466800. The Mark West Creek gauging station is the gauging station closest to the discharge location, located approximately 5 miles downstream of the discharge point. EPA concluded this is consistent with NPDES permits issued by the North Coast Regional Water Quality Control Board, which have established the flow restriction based on the nearest available USGS gauging station. The permit also requires a flow study to ensure the discharge meets the effluent discharge limitations for flow in the receiving waters. See Fact Sheet Section XI.F.

E. Anti-Backsliding

Sections 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1) prohibit 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.

This facility does not have a previous permit and thus the permit does not establish any effluent limits less stringent than those in the previous permit and does not allow backsliding.

F. Antidegradation Analysis

EPA's antidegradation policy under CWA Section 303(d)(4) and 40 CFR § 131.12 and the Basin Plan require that existing water uses and the level of water quality necessary to protect the existing uses be maintained and protected. Before allowing any lowering of water quality, EPA must find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity.

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 and chronic toxicity monitoring are required annually. Additionally, requirements are included in the permit to ensure impaired downstream waterbodies are not further degraded.

Downstream waterbodies are listed for aluminum, manganese, dissolved oxygen, phosphorus, sedimentation/siltation, and temperature. Monitoring is established for aluminum and manganese and a reopener provision is included to establish effluent limits in the future if the discharge is shown to have reasonable potential to cause or contribute to an exceedance of water quality standards. A Phosphorus Loading Ratio effluent limitation is established for phosphorus, which will ensure the downstream waterbodies are not further degraded by phosphorus loading. Addressing phosphorus loading will also ensure DO levels are not further degraded, as phosphorus loading has been indemnified as the leading cause of DO impairment in downstream waterbodies.

EPA determined that the discharge does not contain sediment in the form of settleable solids, suspended solids, and turbidity at levels that will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the downstream waterbodies. This finding is based on the advanced level of treatment provided which reduces settleable solids, total suspended solids, and turbidity to negligible levels through filtration of the effluent. The summer discharge prohibition and the one-percent flow limitation also support this conclusion. EPA has established stringent effluent limitations for TSS and monitoring requirements for turbidity and settleable solids in the permit. Narrative temperature standards and temperature monitoring is required in the permit to ensure the discharge is not contributing to temperature increases in downstream waterbodies.

Therefore, due to the low levels of toxic pollutants present in the effluent, high level of treatment being obtained, seasonal discharge limitations, and water quality-based effluent limitations, the discharge is not expected to adversely affect receiving water bodies or result in any degradation of water quality.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

The Basin Plan for the North Coast Region contains narrative water quality standards applicable to the downstream waterbodies. These standards have been incorporated into the permit; see Part I.A of the permit.

VIII. MONITORING AND REPORTING REQUIREMENTS

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

A. Effluent Monitoring and Reporting

The permittee shall conduct 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 annually to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. The permittee shall perform all effluent sampling and analyses for the priority pollutants 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) Requirements

Aquatic life is a public resource protected in surface waters covered by the CWA. As evidence that CWA requirements protecting aquatic life from chronic and acute toxicity are met in surface waters receiving the NPDES discharge, samples are collected from the effluent and tested for toxicity in a laboratory using EPA's WET methods. These aquatic toxicity test results are used to determine if the NPDES effluent causes toxicity to aquatic organisms. Toxicity testing is important because for scores of individual chemicals and compounds, chemicalspecific environmentally protective levels for toxicity to aquatic life have not been developed or set as water quality standards. In due course, some such chemicals and compounds can eventually make their way into 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.

EPA's WET methods are systematically-designed instructions for laboratory experiments that expose sensitive life stages of a test species (e.g., fish, invertebrate, algae) to both an NPDES effluent sample and a negative control sample. During the toxicity test, each exposed test organism can show a difference in biological response; some will be undesirable differences. Examples of undesirable biological responses include, but are not limited to, eggs not fertilized, early life stages that grow too slowly or abnormally, or death. At the end of a toxicity test, 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). The effluent and control groups are then compared using an applicable inferential statistical approach (i.e., hypothesis testing or point estimate model) chosen by the permitting authority and specified in the NPDES permit. The chosen statistical approach is compatible with both the experimental design of the WET method and the applicable toxicity water quality standard. Based on this statistical comparison, a toxicity test will demonstrate that the effluent is either toxic or not toxic, in relation to the permit's toxicity level for the effluent, which is set to protect the quality of surface waters receiving the NPDES discharge. EPA's WET methods are specified under 40 CFR § 136 and/or in applicable water quality standards.

EPA recommends inferential statistical approaches that a permitting authority chooses from to set a protective level for toxicity in an NPDES discharge. The statistical approach chosen for this permit is based on bioequivalence hypothesis testing and is called the Test of Significant Toxicity (TST) statistical approach. It is described in National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document (EPA 833-R-10-004, 2010; TST Technical Document) and Denton DL, Diamond J, and Zheng L. 2011. Test of significant toxicity: A statistical application for assessing whether an effluent or site water is truly toxic. Environ Toxicol Chem 30:1117-1126. This statistical approach supports important choices made within a toxicity laboratory which favor quality data and EPA's intended levels for statistical power when true toxicity is statistically determined to be unacceptably high (≥ 25 PE, Percent (%) Effect), or acceptably low (< 10 PE). Example choices are practices supporting healthy test organisms, increasing the minimum recommended replication component of the WET method's experimental design (if needed), technician training, etc. TST results do not often differ from other EPA-recommended statistical approaches using hypothesis testing (Diamond D, Denton D, Roberts J, Zheng L. 2013. Evaluation of the Test of Significant Toxicity for determining the toxicity of effluents and ambient water samples. Environ Toxicol Chem 32:1101-1108.). The TST maintains EPA's desired low false positive rate for WET methods-the probability of declaring toxicity when true toxicity is acceptably $low \le 5\%$ —when quality toxicity laboratories conduct toxicity tests (TST Technical Document; Fox JF, Denton DL, Diamond J, and Stuber R. 2019. Comparison of false-positive rates of 2 hypothesis-test approaches in relation to laboratory toxicity test performance. Environ Toxicol Chem 38:511-523.). Note: The false positive rate is a long-run property for the toxicity laboratory conducting a WET method. A low false positive rate is indicted by a low long-run toxicity laboratory control coefficent of variation for the test species/WET method, using a minimum of 30 to 50 toxicity tests.

In accordance with 40 CFR § 122.44(d)(1), reasonable potential for chronic toxicity has not been established because chronic toxicity tests have not been previously conducted for the discharge and there are no known toxic parameters in the effluent. No chronic toxicity WQBELs are required for the permitted discharge (40 CFR § 122.44(d)(1)). However, monitoring and reporting for both the median monthly and maximum daily effluent results for the parameter of

chronic toxicity are required, so that effluent toxicity can be assessed in relation to CWA requirements for the new permitted discharge (See Part I, Table 2 in NPDES permit).

In accordance with 40 CFR § 122.44(d)(1)(ii), in setting the permit's levels for chronic toxicity and conditions for discharge, EPA is using a test species/chronic short-term WET method and a discharge Instream Waste Concentration (IWC) representing conservative assumptions for effluent dilution necessary to protect receiving water quality. The IWC is a discharge-specific term based on the permit's authorized mixing zone or initial dilution. Generally, the dilution model result "S" from Visual Plumes/Cormix is used. S is the volumetric dilution factor, i.e. 1 volume effluent is diluted with S – 1 volumes surface water) = [(Ve + Va) / Ve]. Following the mass balance equation, if the dilution ratio D = Qs / Qe, then [(Qe + Qs) / Qe] = 1 + D = S.

For this discharge, S = 1 (i.e., no authorized dilution). The discharge-specific IWC = 1 to 1 dilution (1:1, 1/1) = 100% effluent. The IWC made by the toxicity laboratory is mixed as 1 part solute (i.e., effluent) to 0 parts dilutant (1: (1 - 1)) for a total of 1 part.

The TST's null hypothesis for chronic toxicity (H_o) is: IWC mean response (% effluent) \leq 0.75 Control mean response. The TST's alternative hypothesis is (H_a): IWC mean response (% effluent) > 0.75 Control mean response. For this permit, results obtained from a single chronic toxicity test are analyzed using the TST statistical approach, where the required chronic toxicity IWC for Discharge Point Number 001 is 100% effluent.

For NPDES samples for toxicity 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 at the first time of sample use (initiation of toxicity 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.

For POTWs, it is not practicable (40 CFR § 122.45(d)) for EPA to set an average (median) weekly effluent limit, in lieu of a maximum daily effluent limit. This is because discharges of unacceptable toxicity—true chronic toxicity \geq 25 PE, the TST's chronic toxicity RMD—are not adequately restricted by two effluent limits (median weekly and median monthly) each using a median of up to 3 toxicity test results. Under such limits, a highly toxic (chronic, acute) discharge could occur with no restriction. Moreover, using two such median limits further decreases the probability that an effluent with unacceptable toxicity will be caught, resulting in a permitted discharge which under-protects the aquatic life from unacceptable chronic toxicity.

A species sensitivity screening for chronic toxicity is required in the permit to determine the most sensitive species at the IWC.

IX. SPECIAL CONDITIONS

A. Biosolids

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids in accordance with 40 CFR § 503 are incorporated into the permit.

C. Capacity Attainment and Planning

The permit requires that a written report be filed within ninety (90) days if the average dryweather 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. Asset Management and Climate Change

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. EPA published a guide entitled Incorporating Asset Management Planning Provisions into NPDES Permits (December 2014) that directs Municipalities "to manage their aging sewer and stormwater systems at a time of urban population growth, more stringent water quality protection requirements, and increased exposure to climate change-related risks." Executive Order 13990 directs federal agencies "to bolster resilience to the impacts of climate change." 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. The permittee shall develop an Asset Management Plan that considers short- and long-term vulnerabilities (including due to climate change) of collection systems, facilities, treatment systems, and outfalls. The intent is to ensure facility operations are not disrupted and compliance with permit conditions is achieved. Asset management and climate change requirements have been established in the permit to ensure compliance with the provisions of 40 CFR § 122.41(e).

E. Compliance Schedule for Phosphorus Load Ratio Effluent Limitation

When a discharger cannot immediately comply with a WQBEL upon the effective date of an NPDES permit, the permit may, when appropriate, specify a schedule of compliance leading to compliance with CWA and regulations (See 40 CFR § 122.47). In determining whether a compliance schedule for phosphorus is appropriate to include in the permit, EPA considered the following information, in accordance with EPA's 2007 Memo³, titled Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits and applicable regulations:

Discharger Compliance

In order to grant a compliance schedule, EPA must determine the permittee cannot immediately comply with the WQBEL upon effective date of the permit. The permittee has three options for complying with the Phosphorus Load Ratio (PLR) effluent limitation:

- (A) Reducing the effluent concentration below detectable levels through source control and/or treatment;
- (B) Not discharging; and/or
- (C) Generating phosphorus credits consistent with an existing water quality trading program for the watershed. EPA approval is required to authorize acquisition and use of credits.

In order to comply with the PLR effluent limitation, the permittee will need to either upgrade their treatment, utilize additional reused water demand, or generate phosphorus credits consistent with an existing water quality trading program for the watershed and obtain approval from EPA for the acquisition and use of credits. The permittee has indicated it intends to comply with the

³ https://www3.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf

PLR by generating phosphorus credits consistent with an existing water quality trading program for the watershed and it may not be possible to obtain the required credits and approval prior to the first instance of needing to discharge under the permit. Based on this information, EPA has determined the discharger cannot immediately comply with the WQBEL upon the effective date of the permit.

Appropriateness of Compliance Schedule

The permittee has indicated it is in the process of determining how to generate credits consistent with an existing water quality trading program for the watershed. Upon obtaining credits and EPA approval for acquisition and use of credits, the permittee will be able to meet the PLR effluent limitation. Due to the need for the permittee to either upgrade their treatment, identify and use additional reused water demand, or obtain credits consistent with an existing water quality trading program to meet the PLR effluent limitation, EPA determined a compliance schedule is appropriate.

Compliance Schedule and Action

EPA has included a compliance schedule in the permit for the maximum daily effluent limitation for the Phosphors Load Ratio. The actions associated with the compliance schedule include either upgrading facility treatment or generating phosphorus credits consistent with an existing water quality trading program for the watershed and obtaining EPA approval for the credits. These actions are expected to lead to compliance with the final effluent limitation for PLR.

Compliance with the PLR effluent limitation of 1.0 is required by October 1, 2025. The permittee shall collect and submit total phosphorus data for any discharge during the period from permit effective date to September 30, 2025, and retroactively apply EPA-approved credits to account for phosphorus loading during the compliance schedule period. The permittee shall submit a report within 14 days of October 1, 2025, that shows compliance with the PLR effluent limitation and shows the acquisition, authorization, and use of credits retroactively applied. Pursuant to 40 CFR § 122.47, the compliance schedule within the permit contains interim milestones.

F. Special Study: Windsor Creek Flow Study

Currently, the permit allows measuring flow data at the closest gauging station to the discharge location, which is the Mark West Creek USGS gauging station #11466800, located approximately 5 miles downstream. EPA has included a receiving water flow study in the permit to ensure the discharge meets the effluent discharge limitations for flow in the receiving waters upstream of the Mark West Creek gauging station. The study requires the permittee to conduct a flow study and propose methods for measuring flow in Windsor Creek to demonstrate compliance with effluent discharge limitations. The written proposal is required to be submitted to EPA within two years of the effective date of the permit and shall describe the flow monitoring methodology in detail, identify a flow measurement location in Windsor Creek and propose a schedule for implementation of the flow monitoring as soon as practicable. Until an alternative method of measuring flow in Windsor Creek has been approved by EPA, the permittee shall continue to use the Mark West Creek stream gauge flow data.

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Consideration of Environmental Justice

EPA conducted a screening level evaluation of vulnerabilities in the community located near the facility using EPA's EJSCREEN tool. The purpose of the screening is to identify areas disproportionately burdened by pollutant loadings and to consider demographic characteristics of the population living in the vicinity of the discharge when drafting permit conditions. The complete EJScreen report is available in the permit record.

In May 2023, EPA conducted an EJSCREEN analysis of the community near the vicinity of the outfall. EPA added a one-mile buffer around the discharge point and reviewed the state percentiles for the EJ Indexes, Environmental Indicators, Socioeconomic Indicators, and Supplemental Indexes. The state percentile values for the EJ Indexes, Socioeconomic Indicators, and Supplemental Indexes were not elevated. The state percentile values for the Environmental Indicators showed elevated indicator scores for the following factors:

- Air Toxics Cancer Risk
- Air Toxics Respiratory Hazard Index (HI)
- Underground Storage Tanks

The Air Toxics Cancer Risk and Respiratory HI indicators are based on EPA's 2017 Air Toxics Data Update⁴. The EPA AirToxScreen tool notes that risks indicated in the census tract are due in part to 2017 emissions from fires, including the Sonoma Complex fires. These fires resulted in elevated cancer risks in these areas in the 2017 AirToxScreen assessment. AirToxScreen's risk estimates are based on being exposed to air toxics for 24 hours a day, 365 days a year, for 70 years. The same is done to estimate risk from fires: AirToxScreen takes the level of air toxics that were in smoke in 2017 and assumes people would be exposed at that same level continuously for 70 years. It's unlikely that a wildfire will burn in the same location for a person's entire lifetime. Thus, the risks AirToxScreen showed in these areas were likely higher than actual risk would be, and EPA believes that the cancer risks from air toxics in wildfire smoke in these two states were likely overestimated in the 2017 AirToxScreen.

The permittee has indicated that they will use fire management practices on the land surrounding the facility to reduce fire risk and minimize the potential contribution of air toxics from wildfires.

The underground storage tank data is from EPA's UST Finder⁵. The UST Finder indicates that there are two underground storage tanks in the buffered area: Windsor Chevron and Windsor Shell. These are two underground storage tanks associated with gas stations near highway 101.

EPA also gathered information from CalEnviroScreen 4.0. The CalEnviroScreen 4.0 Percentile, Pollution Burden Percentile, and Population Characteristics Percentile for the communities near the discharge were in the range of 19-37. This indicates most communities in

⁴ https://www.epa.gov/haps/air-toxics-data-update

https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=b03763d3f2754461adf86f12134 5d7bc

California have higher scores (indicating a higher burden potential) than the communities in the area around the discharge.

In addition to the above, EPA recognizes the history of Lytton Rancheria of California. Following the passage of the California Rancheria Termination Act in 1958, the federal government terminated the Lytton Rancheria and distributed the tribal trust lands, which were located within Sonoma County in Alexander Valley, to individual members of the Lytton Rancheria. In 1991, the Lytton Rancheria was restored as a tribe, and the Lytton Rancheria was again listed in the Federal Register as a federally recognized tribe. Since that time, the tribe has attempted to secure land to re-establish a unified community in the vicinity of Alexander Valley. This facility will support the tribe's newly developed residential community, community center, and associated tribal developments. These developments were built with the goal of uniting currently dispersed tribal members, providing sufficient residential housing and associated infrastructure for tribal members, fostering cultural identity, spiritual values, and traditional beliefs, and protecting and enhancing the wellbeing of tribal members and natural resources.

As a result of the analysis, EPA is aware of existing environmental impacts on the communities near the discharge and has determined issuing this permit will not contribute to disproportionate environmental burden on the surrounding communities. Additionally, the permit is being issued consistent with the CWA, which is protective of all beneficial uses of the receiving water, including human health.

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.

Action Area

Under Section 7 of the ESA regulations, the "action area" means all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR § 402.02). The action area for this proposed action includes the facility footprint and the receiving waters from the discharge location to the confluence of Mark West Creek and Russian River. Action areas for the discharge are as follows:



The facility is located on Windsor River Road and discharges to Gumview Creek. Gumview Creek flows south from the discharge location and flows into Windsor Creek approximately 4.2 miles downstream from the discharge location. Windsor Creek flows into Mark West Creek, which is a tributary to the Russian River. The confluence of Mark West Creek and the Russian River is approximately 7.5 miles downstream from the discharge location.

The action area is defined as the Lytton WWTP facility and the downstream waterbodies from the discharge location to the confluence of Mark West Creek and Russian River. The action area does not include the Russian River, as the discharge from the facility is limited and the treated effluent is heavily diluted when Mark West Creek flows into the Russian River and will have no discernible effect on the Russian River. The permit contains limits to protect the designated uses of the receiving water, including cold freshwater habitat and wildlife habitat, and does not involve physical habitat alteration.

Species and Critical Habitat Considered

The website for the U.S. Fish and Wildlife Service's (USFWS) Sacramento Fish and Wildlife Office generated an official species list on March 9, 2023. The species list identifies the following threatened (T) endangered (E) and candidate (C) species and critical habitat that may occur in the vicinity of the discharge.

To determine whether the discharge would affect any threatened or endangered species, EPA reviewed the species list and coordinated with USFWS. Based on this review and coordination, 19 species are being considered as part of this assessment. Seventeen species are being considered under FWS jurisdiction, and two species are being considered under NOAA-NMFS jurisdiction.

Status	Species/Listing Name ¹	Designated Critical Habitat
E	Central California Coast Coho Salmon	Yes ⁽²⁾
Т	Central California Coast Steelhead	Yes ⁽³⁾
Т	Marbled Murrelet (Brachyramphus marmoratus)	No
Т	Northern Spotted Owl (<i>Strix occidentalis caurina</i>)	No
Т	Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	No
Т	California Red-legged Frog (<i>Rana</i> draytonii)	No
С	Monarch Butterfly (Danaus plexippus)	No
E	12 Species of Flowering Plants	No

- (1) The green sea turtle (*Chelonia mydas*) was included on the species list but is not considered in the analysis due to the discharge being to an inland freshwater stream.
- (2) The Russian River has been designated as critical habitat for Central California Coast Coho Salmon. This critical habitat is located outside the action area.
- (3) The Russian River and Windsor Creek have been designated as critical habitat for Central California Coast Steelhead. This critical habitat is located within the action area.

The following ESA effects discussion does not include the monarch butterfly (*Danaus plexippus*) as it is a candidate species. Candidate species do not have statutory protection under the ESA although FWS encourages cooperative conservation efforts for these species.

Anadromous species

Central California Coast Steelhead and Coho Salmon and Critical Habitat

Central California Coast Steelhead and Coho Salmon are anadromous fish that spend most of their adult lives in the ocean and spawn and rear in freshwater streams and rivers. Salmon require cold, clean, clear freshwater which is characterized by low temperature, circumneutral pH, high dissolved oxygen, low bacteria, low nutrients, low TSS, low turbidity, and low levels of bioaccumulating parameters. There are several factors contributing to species decline including overfishing, loss of freshwater and estuarine habitat, hydropower development, poor ocean conditions, and hatchery practices.

The biological survey completed as part of the EA noted that the instream habitats in Gumview Creek were limited. Therefore, only the most adapted species within this narrow range of suppressed aquatic habitat would be predicted to occur within the upper reaches of Gumview Creek. Based on the observations made during the stream assessment, this stream reach is unsuitable for spawning and rearing. It is likely Gumview Creek was historically occupied by salmon, and suitable salmon habitat is likely to exist downstream of the discharge in Windsor Creek and Mark West Creek. Critical habitat for the Central California Coast Steelhead evolutionarily significant unit was designated in 2005 within Windsor Creek, which is downstream of the discharge and within the action area. All waterbodies downstream of the discharge have a designated use of cold water aquatic life.

Salmon may come into contact with the effluent in downstream waterbodies where suitable habitat is present. EPA has included requirements in the permit to ensure the protection of aquatic life downstream of the discharge, including salmon throughout their life cycle. The NPDES permit:

- Requires the permittee to minimize discharge by maximizing water reuse.
- Prohibits discharges from May 15 October 30 annually.
- Prohibits discharges greater than 1% of the receiving water flow.
- Requires tertiary treatment which minimizes pollutants in the discharge.
- Establishes effluent limitations for TSS, pH, chlorine, bacteria, nutrients, settleable solids, and turbidity and monitoring requirements for temperature.
- Requires an annual chronic toxicity test and priority pollutant scan.
- Does not authorize physical habitat alteration.

The permit also requires no net loading of phosphorus to the receiving water to prevent further water quality degradation downstream. Addressing phosphorus loading will also ensure DO levels are not further degraded, as phosphorus loading is the leading cause of DO impairment in downstream waterbodies. To achieve no net loading, the permittee will either implement a higher level of treatment, not discharge, or generate credits consistent with an existing water quality trading program for the watershed. If the permittee chooses to generate credits consistent with an existing water quality trading program, they will offset their phosphorus discharges by acquiring water quality credits that represent restoration projects that remove phosphorus and provide water quality benefit in the watershed. EPA approval is required for the acquisition and use of credits.

EPA has included a compliance schedule for the phosphorus loading requirement in the permit to allow the permittee time to the either upgrade facility treatment, identify additional reused water demand, or join an existing water quality trading program for the watershed. If the permittee chooses to generate credits consistent with an existing water quality trading program, the permittee is required to apply credits retroactively to any phosphorus discharge that occurs during the compliance schedule period. During the compliance schedule period, phosphorus loading may directly or indirectly impact salmon or salmon habitat downstream. These impacts are expected to be minimal due to the minimization of discharge and the requirement for the permittee to retroactively apply water quality credits to account for phosphorus loading during the compliance schedule period.

Stormwater management practices are being implemented to minimize transportation of sediment and contaminants into surface water from impervious surfaces created by the development project. These management practices include vegetated swales and the use of permeable surfaces to filter stormwater and reduce potential surface water contamination during storm events.

Due to the stormwater management practices in place, requirements included in the permit to protect aquatic life, including the phosphorus loading limitations and the compliance schedule included in the permit, EPA has determined the permit action may affect, but is not likely to adversely affect Coho Salmon or Central California Coast Steelhead and its critical habitat downstream of the discharge.

Terrestrial Species

Marbled Murrelet

The marbled Murrelet is a small seabird historically occuring in Alaska, California, Oregon, and Washington. Marbled murrelets typically occur in coastal waters or in calm protected waters near the coast where they forage for fish and crustaceans underwater. Marine foraging areas for marbled murrelets are usually within 1.2 to 3 miles of shore, typically in waters less than 100 feet deep. They breed inland on mountains near the coast or in mature forests farther inland. Main threats include loss of inland nesting habitat and oil spills.

The action area does not include any inland forest habitats or coastal marine waterbodies that this species would use for foraging. EPA has determined the species does not occur within the action area and will not be affected by the action.

Northern Spotted Owl

The Northern Spotted Owl is a medium-sized owl species historically occuring in California, Oregon, and Washington. Northern Spotted Owls require older forest habitat (e.g., old growth forest) characteristics for nesting, roosting, and foraging. These habitat characteristics including a moderate to high canopy cover with multiple layers and species, large overstory trees (i.e., greater than 30in diameter), trees with various deformities such as large cavities and broken tops, accumulation of fallen trees and woody debris on the ground, and open space below the canopy. Main threats include degradation of habitat and competition with the Barred Owl.

The action area does not include any forested areas that contain the habitat characteristics to support the Northern Spotted Owl. Thus, EPA has determined the species does not occur within the action are and will not be affected by the action.

Yellow-billed Cuckoo

The yellow-billed cuckoo is a migratory bird species that breeds in the United States and is known to occur in California. Yellow-billed cuckoo habitat is characterized by dense vegetation with water nearby (e.g., dense thickets along a stream). In the western United States, nests are often established in willows along streams and rivers. Yellow-billed cuckoos feed on insects, fruits, reptiles, and amphibians. The main cause of decline for this species is habitat destruction due to riparian areas being converted to farmland.

Yellow-billed cuckoos may experience exposure to the treated effluent directly or indirectly. Direct exposure could come from drinking or bathing in the treated effluent, while indirect exposure could come from eating prey that have been in frequent contact with the treated effluent (i.e., amphibians) or a reduction in prey abundance. Direct exposure to the treated effluent may occur, as birds bathe and drink water regularly. Amphibians are not frequent prey for yellow-billed cuckoos, as they mainly eat insects such as caterpillars, beetles, grasshoppers, and other insects. Thus, indirect exposure through prey species is very unlikely.

While yellow-billed cuckoos may experience exposure to the treated effluent through indirect or direct pathways, the response to this exposure is likely to be minimal. Bathing in the treated effluent is unlikely to cause an adverse response, as minimal water is used to bathe, and the bird is not ingesting the water through the act of bathing. Drinking the treated effluent or eating prey that have been in contact with or injected the treated effluent is unlikely to cause effects, as the permit contains effluent limitations to protect aquatic life.

Due to the minimal chance of exposure, either directly or indirectly, and the permit requirements to protect aquatic life, EPA has determined the permit action will not affect the yellow-billed cuckoo.

California Red-legged Frog

The California red-legged frog is a rare amphibian species found almost exclusively in the state of California. It now occurs in only 30 percent of its former range and is found primarily in coastal drainages of central California, from Marin County, California, south to northern Baja California, Mexico. It occurs in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation. Potential threats to the species include elimination or degradation of habitat from land development and land use activities and habitat invasion by non-native aquatic species. The main predators of the California red-legged frog are birds, raccoons, snakes, and the invasive American bullfrog.

The biological assessment completed as part of the EA indicates that there is no suitable habitat for this species within the project site and the nearest documented occurrence of this species is greater than 5 miles from the project site. However, it is possible red-legged frogs or suitable habitat occur in waterbodies downstream of the discharge.

Frogs may be exposed directly to the treated effluent while reproducing, respirating, and feeding, among other activities. Indirect exposure may occur while feeding on fish, aquatic invertebrates, and amphibians. If exposure were to occur downstream of the discharge, the effluent would be highly diluted. Additionally, the permit includes effluent limitations and other requirements to project aquatic life.

Based on best available habitat information and permit requirements to protect aquatic life, EPA has determined the action will not affect the California red-legged frog.

Flowering Plants

Twelve species of plants were identified in the species list sent to EPA from USFWS: Baker's Larkspur (*Delphinium bakeri*), Burke's Goldfields (*Lasthenia burkei*), Many-flowered Navarretia (*Navarretia leucocephala ssp. Plieantha*), Pennell's Bird's-beak (*Cordylanthus tenuis ssp. Capillaris*), Pitkin Marsh Lily (*Lilium pardalinum ssp. Pitkinense*), Sebastopol Meadowfoam (*Limnanthes vinculans*), Showy Indian Clover (*Trifolium amoenum*), Sonoma Alopecurus (*Alopecurus aequalis var. sonomensis*), Sonoma Spineflower (*Chorizanthe valida*), Sonoma Sunshine (*Blennosperma bakeri*), White Sedge (*Carex albida*), and Yellow Larkspur (*Delphinium luteum*).

The biological assessment completed as part of the EA determined the following six federally listed plant species have the potential to occur within the project site: Sonoma alopecurus, Sonoma sunshine, Burke's goldfields, Pitkin Marsh lily, Sebastopol meadowfoam, and Many-flowered Navarretia. The effects discussion below considers these six plant species as

the other plant species are considered outside the action area and EPA has determined they will not be affected by the action.

Plant Species	Primary Habitat
Sonoma alopecurus	Wet soils and freshwater marshes
Sonoma sunshine	Vernal pools and wet grasslands
Burke's goldfields	Vernal pools and swales
Pitkin Marsh lily	Permanently saturated, sandy soils at the edges
	of marsh wetlands and riparian habitat
Sebastopol meadowfoam	Vernal pools
Many-flowered Navarretia	Vernal pools

The main threats to these endangered plants are habitat loss from development and encroachment by invasive plant species. The permit does not authorize physical habitat alteration within the action area. While the action area includes the treatment plant and storage ponds, construction of these facilities is not authorized under the permit action.

The action area does not include any marshes, grasslands, vernal pools, or swales. Thus, the plant species that rely on these habitats do not occur within the action area. The Pitkin Marsh Lily may occur within riparian habitats, which could include the receiving water and downstream waterbodies; however, the Pitkin Marsh Lily is only known to occur in three locations that include one conservation easement held by California Department of Fish and Wildlife CDFW and two privately owned marshes that are not part of the action area. Based on best available information and the scope of the permit action, EPA has determined the permit action will not affect the 12 listed plant species.

Conclusion

Based on anticipated impacts from the discharges, level of treatment prior to discharge and permit conditions in the NPDES permit, EPA has made a Section 7 determination for each species identified above. A summary of the findings is listed below:

Status	Species/Listing Name ¹	ESA Determination
E	Central California Coast Coho Salmon (Oncorhynchus kisutch)	May affect, not likely to adversely affect.
Т	Central California Coast Steelhead (Oncorhynchus mykiss)	May affect, not likely to adversely affect
Т	Marbled Murrelet (Brachyramphus marmoratus)	No effect
Т	Northern Spotted Owl (<i>Strix occidentalis caurina</i>)	No effect
Т	Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	No effect
Т	California Red-legged Frog (<i>Rana</i> draytonii)	No effect
С	Monarch Butterfly (Danaus plexippus)	No effect
E	12 Species of Flowering Plants	No effect

EPA initiated informal ESA consultation with NOAA-NMFS on September 27, 2023, and received a letter of concurrence on November 21, 2023. If, in the future, EPA obtains information or is provided information that indicates that there could be adverse impacts to federally listed species, EPA will contact the appropriate agency or agencies and initiate consultation to ensure that such impacts are avoided, minimized, and/or mitigated.

C. Impact to Essential Fish Habitat

Introduction

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth a number of 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 make a determination on federal actions that may adversely impact Essential Fish Habitat (EFH). EPA is assessing the effects of the issuance of this permit on EFH near Windsor, California.

Designated EFH

The Pacific Coast Salmon Fishery Management Plan⁶ lists designated EFH for Chinook and Coho Salmon that includes all habitat currently or historically occupied within Washington, Oregon, and California; this includes Gumview Creek and downstream waterbodies (Windsor Creek, Mark West Creek, and the Russian River). The MSA defines EFH as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Waters include aquatic areas and their physical, chemical, and biological properties that are used by fish. Habitat degradation is the major cause for extinction of populations; many extinctions are related to dam construction and operation. Urbanization, agricultural land use, water diversion, logging, and some combination of these stressors are also factors contributing to habitat degradation and species decline.

Salmon require cold, clean, and clear freshwater which is characterized by low temperature, circumneutral pH, high dissolved oxygen, low bacteria, low nutrients, low TSS, and low turbidity. These parameters are part of the chemical and biological properties of essential salmon habitat and may be affected by the introduction of treated wastewater. Salmon may also be lethally or sub-lethally affected by parameters that are absorbed and bioaccumulate in their tissues.

Adverse Effects Analysis

The effluent may flow into downstream EFH for salmon and impact the chemical and biological properties of the habitat. EPA has included requirements in the permit to ensure the protection of aquatic life downstream of the discharge, including the chemical and biological properties of essential salmon habitat. The NPDES permit:

• Requires the permittee to minimize discharge by maximizing water reuse.

⁶ https://www.pcouncil.org/documents/2022/12/pacific-coast-salmon-fmp.pdf/

- Prohibits discharges from May 15 October 30 annually.
- Prohibits discharges greater than 1% of the receiving water flow.
- Requires tertiary treatment which minimizes pollutants in the discharge.
- Establishes effluent limitations for TSS, pH, chlorine, bacteria, nutrients, settleable solids, and turbidity and monitoring requirements for temperature.
- Requires an annual chronic toxicity test and priority pollutant scan.
- Does not authorize physical habitat alteration.

The permit also requires no net loading of phosphorus to the receiving water to prevent further water quality degradation downstream. Addressing phosphorus loading will also ensure DO levels are not further degraded, as phosphorus loading is the leading cause of DO impairment in downstream waterbodies. To achieve no net loading, the permittee will either implement a higher level of treatment, not discharge, or participate in an existing water quality trading program for the watershed. If the permittee chooses to generate credits consistent with an existing water quality trading program, they will offset their phosphorus discharges by acquiring water quality credits that represent restoration projects that remove phosphorus and provide water quality benefit in the watershed. These restoration projects would be overseen through the trading program to ensure they are achieving the intended restorative impacts.

EPA has included a compliance schedule for the phosphorus loading requirement in the permit to allow the permittee time to the either upgrade facility treatment, identify additional reused water demand, or generate credits consistent with an existing water quality trading program for the watershed. If the permittee chooses to generate credits consistent with an existing water quality trading program, the permittee is required to apply credits retroactively to any phosphorus discharge that occurs during the compliance schedule period. During the compliance schedule period, phosphorus loading may affect the chemical and biological characteristics of salmon EFH downstream.

Stormwater management practices are being implemented to minimize transportation of sediment and contaminants into surface water from impervious surfaces created by the development project. These management practices include vegetated swales and the use of permeable surfaces to filter stormwater and reduce potential surface water contamination during storm events.

Due to the stormwater management practices in place, requirements included in the permit to protect the water quality conditions to support aquatic life, including the phosphorus loading limitations, EPA has determined the permit action will not adversely affect EFH for Chinook and Coho Salmon after the compliance schedule period. EPA has determined the discharge may adversely affect EFH for Chinook and Coho Salmon during the compliance schedule period.

EPA initiated EFH consultation with NOAA-NMFS on September 27, 2023 and received a concurrence letter from NOAA-NMFS on November 21, 2023. If, in the future, EPA obtains information or is provided information that indicates that there could be adverse impacts to EFH, EPA will contact NOAA-NMFS to ensure that such impacts are avoided, minimized and/or mitigated.

D. 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. EPA has determined that the NPDES permit of the proposed project is an "undertaking" subject to the review process set forth in Section 106 of the NHPA. On June 1, 2023, EPA sent an NHPA tribal consultation request to Lytton Rancheria of California to identify historic properties of traditional religious and cultural importance that may be located within the geographic area where the proposed project may directly or indirectly impact. EPA did not receive a response from Lytton Rancheria of California to identify historical properties that may be located near the proposed project and has determined the NPES permit will not impact historical properties.

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

Where the discharge originates within a jurisdiction without Clean Water Act Section 401 authority, EPA is the certifying agency.

The permit contains conditions and requirements for the facility discharges to meet water quality standards in the receiving waters. The effluent limitations are set at levels such that the discharge will maintain water quality standards in the receiving water. The term water quality standards includes numeric and narrative water quality criteria as well as the designated uses of the receiving water.

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 IX 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 and draft 401 certification was placed on the EPA website, starting on August 14, 2023, and ending on September 14, 2023; this comment period met the minimum of 30 days for interested parties to respond in writing to EPA. EPA received written comments from one commenter. EPA developed a response to comments document to respond to all

significant comments and made corresponding changes to the permit and factsheet as part of the final permit decision and issuance.

C. Public Hearing (40 CFR § 124.12)

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. A public hearing was not requested during the public comment period.

XIII. CONTACT INFORMATION

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

Sunny Elliott, (415) 972-3840 Elliott.Sunny@epa.gov

EPA Region 9 75 Hawthorne Street (WTR 2-3) San Francisco, California 94105

XIV. REFERENCES

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