Draft Evaluation
City of Richmond Wastewater Treatment Plant
601 Canal Boulevard, Richmond, CA 94804
Plant No. 2482
Application No. 32242
Project: Modification of Existing Sludge treatment source and installation of odor control device

BACKGROUND

City of Richmond Wastewater Treatment Plant (WWTP) is located at 601 Canal Boulevard in Richmond, California. This WWTP was constructed in 1953 and is currently operated and maintained via contract with Veolia Water North America. Over the years, several smaller upgrade projects have been completed to bring the facility to modern standards and meet regulatory updates. This Sludge Thickener project is the latest step towards these modern standards by replacing the existing and aging Dissolved Air Flotation Thickener (DAFT) system permitted as S-160 with a new Rotary Drum Thickener (RDT) system consisting of three rotary drum thickeners, designed to operate two in-service and one standby, and one open to air equalization tank. These thickeners will be covered with their emissions collected and routed to a new carbon scrubber (A-162) for control, then out of its emissions point (P-162). Note that this equipment and the release stack -except the equalization tank- are located under a canopy. The canopy is a metal roof supported by columns and open on all sides.

As such, City of Richmond Wastewater Treatment Plant has applied for an Authority to Construct for the replacement sludge handling facility (S-160) and the installation of the new abatement device (A-162) as described below.

S-160 **Sludge Handling**
Three Rotary Drum Thickeners (One on standby)
and one open flow equalization tank (366,650-gallon capacity)

abated by:

A-162 **Carbon scrubber, 53 cubic feet of media per unit**
Make: EcoVerde, Model: EG Carbon Adsorber
Maximum air flowrate: 1,700 cfm

CRITERIA EMISSIONS

For the equipment covered and routed to the scrubber (A-162), emissions are expected to be released out of the stack of the scrubber (P-162) while the open equalization tank will have fugitive emissions. Following the facility's wastewater sampling done in January 2025, these fugitive emissions were estimated using the methodology in Chapter 4.3 AP-42 and tank characteristics such as inlet flowrate, aeration and oil film presence with the results summarized in Table 1 in the next section. Details on the wastewater testing results are in Appendix A of this report and the application folder.

The stack outlet emissions of precursor organics (POC), ammonia (NH_3) and hydrogen sulfide (H_2S) are based on 1,700 cfm and a concentration of 50 ppm, 10 ppm, and 1 ppm respectively. Note that the height of the stack outlet on the scrubber (9.3 feet) is located under a metal canopy roof (16 feet). The open equalization tank is not under this canopy and is unabated. The tank has a capacity of 366,650 gallons with a diameter of 63 feet and is 19.5 feet high.

Hydrogen Sulfide, H_2S emissions out of A-162

The emissions of hydrogen sulfide (H_2S) are based on the following parameters and a maximum concentration of 1 ppm at the outlet.

Flow	1,700	cfm
	102,000	cfh
	893,520,000	cfy
P	1	atm
T	528	Rankine
R	0.7302	
n	2.50E+02	lb-mol/hr
H_2S concentration	1	ppm
	2.50E-04	lb-mol/hr
Molar Weight	34	
H_2S Emissions	**8.50E-03**	**lb/hour**
	2.04E-01	**lb/day**
	7.44E+01	lb/year
	3.72E-02	**tons/year**

Ammonia, NH_3 emissions out of A-162

The ammonia (NH_3) emissions are based on the following parameters and a maximum concentration of 10 ppm at the outlet.

Flow	1,700	cfm
	102,000	cfh
	893,520,000	cfy
P	1	atm
T	528	Rankine
R	0.7302	
n	2.50E+02	lb-mol/hr
NH_3 concentration	10	ppm
	2.33E-03	lb-mol/hr
Molar Weight	17	
NH_3 Emissions	**4.25E-02**	**lb/hour**
	1.02E+00	**lb/day**
	3.72E+02	lb/year
	1.86E-01	**tons/year**

Precursor Organics, POC emissions out of A-162

The POC emissions are based on the following parameters and a maximum concentration of 50 ppm estimated as Methane, CH_4 at the outlet.

Flow	1,700	cfm
	102,000	cfh
	893,520,000	cfy
P	1	atm
T	528	Rankine
R	0.7302	

n	2.50E+02	lb-mol/hr
POC concentration	50	ppm
	1.17E-02	lb-mol/hr
Molar Weight	16	
POC Emissions	**2.00E-01**	**lb/hour**
	4.80E+00	**lb/day**
	1.75E+03	lb/year
	8.76E-01	**tons/year**

POC is an organic compound that photochemically reacts in the atmosphere to form ozone, while NPOC is an organic compound designated by the Air District as having negligible photochemical reactivity. POC is defined in Air District Regulation 1-235, and NPOC is defined in Air District Regulation 1-234. Regulation 1-233 excludes methane from the category of organic compounds. Methane and ethane are also excluded from the definition of POC as per Regulation 2-1-207.

Most of the emissions are expected to be methane, so measurements using a flame ionization detector (FID) equipped with an activated carbon tip that filters for methane from the total organics (POC/NPOC) at the outlet of the scrubber are allowed by the Air District. The facility shall conduct confirmation sampling of POC emissions using EPA Method 18 in the event an exceedance is measured using the flame ionization detector (FID) as described in the permit conditions.

The source, S-160, is not expected to emit ethane, so corrections for ethane concentrations are not required.

HEALTH RISK ASSESSMENT (HRA)

This project is subject to the requirements of Regulation 2-5. In accordance with Regulation 2-5-216, the following are the applications within 5 years that qualify to be within the project emissions:

- Application 31741, Emergency Diesel Engine
- Application 30169, Cogeneration Engine, Digesters
- Application 29889, Preliminary & Secondary Treatment Alterations
- Application 31730, Flares

Note that Application 31730, which was withdrawn by the applicant, has not been considered.

Additionally, Application 29889 includes the use of a temporary abatement device (A-13) during a 30-month construction period after which would be replaced by the biofilter, A-14. Plant staff have confirmed that A-13 has been offline since the end of 2023 and only the biofilter, A-14, is running. Therefore, the total project emissions are based on the scenario with only the biofilter operational.

The cogeneration engine in Application 30169 was initially considered, but the facility has decided not to install the engine and to let the Authority to Construct expire.

Table 1 through 5 describe each individual application's TAC emissions.

Table 1 shows the Toxic Air Contaminant (TAC) emissions with ammonia (NH_3) and Hydrogen sulfide (H_2S) based on 1,700 cfm and a concentration of 10 ppm and 1 ppm at the stack outlet respectively as evaluated under Application 32242. Note that the height of the stack outlet of the odor scrubber (9.3 feet) is located under a metal canopy roof (16 feet). Since the canopy is supported by columns and open on all sides, this configuration may encourage lateral dispersion of the emissions out of the scrubber stack. The open equalization tank is not under this canopy and is unabated.

Table 1: Toxic Air Contaminant Emissions from A-162 at 1,700 cfm and the open equalization tank

TAC	Emissions (lb/hr)	Acute Trigger Level (lb/hr)	TAC Trigger (Y/N)	Emissions (lb/yr)	Chronic Trigger Level (lb/yr)	TAC Trigger (Y/N)
Carbon scrubber (A-162)						
H_2S	8.50E-03	1.9E-02	No	7.44E+01	3.90E+02	No
NH_3	4.25E-02	1.4E+00	No	3.72E+02	7.70E+03	No
Open Tank fugitive emissions						
H_2S	2.45E-01	1.9E-02	Yes	2.14E+03	3.90E+02	Yes
NH_3	2.49E-01	1.4E+00	No	2.18E+03	7.70E+03	No
Combined emissions						
H_2S	2.53E-01	1.9E-02	Yes	2.22E+03	3.90E+02	Yes
NH_3	2.92E-01	1.4E+00	No	2.55E+03	7.70E+03	No

Note that 1 ppm H_2S concentration is on an ongoing basis, which is above the hourly threshold in Regulation 9, Rule 2 of 0.03 ppm. This stack is **open** and will be 20 inches in diameter at a height of 9.3 feet from ground level. The H_2S concentration in the exhaust gas will be limited by permit condition to 1 ppm.

Table 2 describes emissions from S-15; a cogeneration engine with the following TACs evaluated under Application 30169. This engine was included in the initial risk assessment but will not be built, thus was removed from the total project emissions.

Table 2: Toxic Air Contaminant Emissions for S-15, Cogeneration engine

TAC	E.F. (lb/MMBtu)	Assumed Abatement Eff. (%)	Emissions (lb/hr)	Acute Trigger Level (lb/hr)	TAC Trigger (Y/N)	Emissions (lb/yr)	Chronic Trigger Level (lb/yr)	TAC Trigger (Y/N)
1,1,2,2-Tetrachloroethane	4.00E-05	85	1.85E-05	-	No	1.62E-01	1.40E+00	No
1,1,2-Trichloroethane	3.18E-05	85	1.47E-05	-	No	1.29E-01	5.00E+00	No
1,1-Dichloroethane	2.36E-05	85	1.09E-05	-	No	9.57E-02	5.00E+01	No
1,2-Dichloroethane	2.36E-05	85	1.09E-05	-	No	9.57E-02	4.00E+00	No
1,3-Butadiene	2.67E-04	85	1.24E-04	1.50E+00	No	1.08E+00	4.80E-01	Yes

TAC	E.F. (lb/MMBtu)	Assumed Abatement Eff. (%)	Emissions (lb/hr)	Acute Trigger Level (lb/hr)	TAC Trigger (Y/N)	Emissions (lb/yr)	Chronic Trigger Level (lb/yr)	TAC Trigger (Y/N)
Acetaldehyde	8.36E-03	85	3.87E-03	1.00E+00	No	3.39E+01	2.90E+01	Yes
Ammonia	1.41E-02	0	4.34E-02	7.10E+00	No	3.80E+02	7.70E+03	No
Benzene	4.40E-04	85	2.04E-04	6.00E-02	No	1.78E+00	2.90E+00	No
Carbon Tetrachloride	3.67E-05	85	1.70E-05	4.20E+00	No	1.49E-01	1.90E+00	No
Chlorobenzene	3.04E-05	85	1.41E-05		No	1.23E-01	3.90E+04	No
Chloroform	2.85E-05	85	1.32E-05	3.30E-01	No	1.16E-01	1.50E+01	No
Ethylbenzene	3.97E-05	85	1.84E-05	-	No	1.61E-01	3.30E+01	No
Ethylene Dibromide	4.43E-05	85	2.05E-05	-	No	1.80E-01	1.10E+00	No
Formaldehyde[1]	5.28E-02	60[1]	6.52E-02	1.20E-01	No	5.71E+02	1.40E+01	Yes
Hydrogen Sulfide[2]	4.39E-04	98	6.51E-04	9.30E-02	No	5.70E+00	3.90E+02	No
Methanol	2.50E-03	85	1.16E-03	6.20E+01	No	1.01E+01	1.50E+05	No
Methylene Chloride	2.00E-05	85	9.26E-06	3.10E+01	No	8.11E-02	8.20E+01	No
n-Hexane	1.11E-03	85	5.14E-04	-	No	4.50E+00	2.70E+05	No
Naphthalene	7.44E-05	85	3.44E-05	-	No	3.02E-01	2.40E+00	No
PAH (AP-42)	2.69E-05	85	1.25E-05	-	No	1.09E-01	3.30E-03	Yes
Phenol	2.40E-05	85	1.11E-05	1.30E+01	No	9.73E-02	7.70E+03	No
Styrene	2.36E-05	85	1.09E-05	4.60E+01	No	9.57E-02	3.50E+04	No
Toluene	4.08E-04	85	1.89E-04	8.20E+01	No	1.65E+00	1.20E+04	No
Vinyl Chloride	1.49E-05	85	6.90E-06	4.00E+02	No	6.04E-02	1.10E+00	No
Xylene	1.84E-04	85	8.52E-05	4.90E+01	No	7.46E-01	2.70E+04	No

[1]The facility indicated that they would accept a permit condition limit that will ensure that the oxidation catalyst will abate 85% of organic toxics other than formaldehyde. As formaldehyde may be resistant to abatement, the facility has agreed to a permit condition based on formaldehyde abated by 60%.
[2]Hydrogen sulfide emissions are only due to the combustion of digester gas.

Table 3 describes emissions for S-16; an emergency diesel engine with the following TACs evaluated under Application 31741.

Table 3: Toxic Air Contaminant Emissions for S-16, emergency diesel engine

TAC	Source #	Rated Power Output (bhp)	Non-Emergency Operating Time (hours)	Emission Factors (g/bhp-hr)	Annual Emissions (lbs/year)	Chronic Trigger Level (lb/yr)	TAC Trigger (Y/N)
Diesel PM	S-16	173	50	0.11	2.1	0.26	Yes

Table 4 describes emissions for S-110; the preliminary treatment process abated by Biofilter, A-14, with the following TACs evaluated for Application 29889.

Table 4: Toxic Air Contaminant Emissions for S-110 when abated by A-14.

Source	Flow details	TAC	Emissions (lb/hr)	Acute Trigger Level (lb/hr)	TAC Trigger (Y/N)	Emissions (lb/yr)	Chronic Trigger Level (lb/yr)	TAC Trigger (Y/N)
S-110 abated by A-14 Biofilter (82 ft by 24 ft)	12,155 cfm at 0.2 ppm	H_2S	1.29E-02	1.9E-02	No	1.13E+02	3.90E+02	No

Table 5 describes total project TAC emissions as analyzed in the final Health Risk Assessment. Note that the emissions from S-15, Cogeneration Engine, are not included because the source will not be built.

Table 5: Total Project Toxic Air Contaminant Emissions

TAC	Emissions (lb/hr)	Acute Trigger Level (lb/hr)	TAC Trigger (Y/N)	Emissions (lb/yr)	Chronic Trigger Level (lb/yr)	TAC Trigger (Y/N)
Ammonia	3.35E-01	1.40E+00	No	2.93E+03	7.70E+03	No
Diesel PM	1.40E-02	-	No	2.1E+00	2.6E-01	Yes
Ethylbenzene	1.84E-05	-	No	1.61E-01	3.30E+01	No
Hydrogen Sulfide	2.67E-01	1.90E-02	Yes	2.34E+03	3.90E+02	Yes

As seen in the summary Table 5, TAC emissions from the project exceed their corresponding Regulation 2, Rule 5 toxic trigger levels, hence a Health Risk Assessment (HRA) was required. Note that this project is not located within 1,000 feet of a school but **it is located within an Overburdened Community (OBC),** so it is subject to public noticing.

HRA Results

Results from the initial HRA that included S-15 indicate that the project cancer risk is estimated at **2.8 in a million**, the project chronic hazard index (HI) is estimated at **0.039**, and the project acute HI is estimated at **0.88**. After the risk assessment was completed, the facility decided not to install S-15, Cogeneration engine. To remove the engine's contribution to cancer risk, the HRA was reworked to estimate the final cancer risk. Results from the reworked HRA indicate that the project cancer risk is estimated at **0.15 in a million**, the project chronic hazard index (HI) is estimated at **0.038,** and the project acute HI is estimated at **0.76.**

The full reports, including the source specific contributions, are in the application file. In accordance with the District's Regulation 2-5-301, source S-160 abated by A-162 does not require TBACT because its estimated source risk does not exceed a cancer risk of 1.0 in a million, and/or chronic hazard index of 0.20. Since the estimated project cancer risk does not exceed 6.0 in a million and hazard indices do not exceed 1.0, this proposed project complies with the District's Regulation 2-5-302 project risk requirements, for projects located in an Overburdened Community, as defined in Regulation 2-1-243.

TBACT

In accordance with the Air District's Regulation 2-5-301, this source does not require TBACT because the estimated source risk does not exceed a cancer risk of 1.0 in a million, and/or chronic hazard index of 0.20. Since the estimated project cancer risk does not exceed 6.0 in a million and hazard indices do not exceed 1.0, this proposed project complies with the Air District's Regulation 2-5-302 project risk requirements, for projects located in an Overburdened Community, as defined in Regulation 2-1-243.

PLANT CUMULATIVE EMISSIONS

Table 6 summarizes the cumulative increase in emissions resulting from this project. The contributions from Application 32242 are the POC emissions out of A-162.

Table 6: Cumulative emissions Increase, Post 4/5/91

Pollutant	Existing Emissions* (tons/year)		Application 32242 Emissions (tons/year)		Cumulative Emissions (tons/year)
NOx	0.904	+	0.000	=	0.904
POC	0.816	+	0.876	=	1.692
CO	4.057	+	0.000	=	4.057
PM_{10}	0.007	+	0.000	=	0.007

Pollutant	Existing Emissions* (tons/year)		Application 32242 Emissions (tons/year)		Cumulative Emissions (tons/year)
$PM_{2.5}$	0.002	+	0.000	=	0.002
SO_2	0.270	+	0.000	=	0.270

*Based on last permitted action through Application 31741

BEST AVAILABLE CONTROL TECHNOLOGY

In accordance with Regulation 2-2-301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2, or PM_{10}.

The POC emissions from S-160 through A-162 are **4.8 lbs /day** which are below this trigger level.

OFFSETS

Pursuant to Regulation 2-2-302, offsets must be provided for any new or modified source at a facility that emits, or is permitted to emit, more than 10 tons per year of POC or NO_X and more than 100 tons per year of $PM_{2.5}$, PM_{10} or sulfur dioxide (SO_2), as specified in Regulation 2-2-303. For detailed PTE calculations, see application file.

Table 7. Potential to Emit (PTE) for NOx at Plant 2482

Source	Name	PTE, NOx, tpy
S-8	Diesel emergency engine	2.283
S-10	Natural gas Boiler	0.670
S-11	Natural gas Boiler	0.670
S-12	Diesel emergency engine	0.525
S-16	Diesel emergency engine	0.062
A-1	Flare	0.067
Total		**4.277**

The NOx potential to emit is less than 10 tons thus no offsets are required in this application.

Table 8. Potential to Emit (PTE) for POC at Plant 2482

Source	Name	PTE, POC, tpy
S-8	Diesel emergency engine	0.061
S-10	Natural gas Boiler	0.099
S-11	Natural gas Boiler	0.099
S-12	Diesel emergency engine	0.009
S-16	Diesel emergency engine	0.003
A-1	Flare	0.002
S-110/A-14*	Preliminary treatment/Biofilter	1.326
S-160/A-162^{+}	Sludge handling/Scrubber	0.876
Total		**2.475**

*Based on emissions out of A-14 from Application 29889. $^{+}$ Based on current Application 32242.

The POC potential to emit is less than 10 tons, thus no offsets are required in this application.

The offsets requirements for $PM_{10,}$ $PM_{2.5}$, and SOx are specified in Regulation 2, Rule 2, Section 303. Per Section 303, $PM_{10,}$ $PM_{2.5}$, and SOx emission offsets are required for any new or modified source that is at a major facility for $PM_{10,}$ $PM_{2.5}$, or SOx emissions.

City of Richmond Wastewater Treatment Plant is not a major facility for $PM_{10,}$ $PM_{2.5}$, and SOx emissions.

NEW SOURCES PERFORMANCE STANDARDS (NSPS)

40 CFR Part 60 Subpart O: Standards of Performance for Sewage Treatment Plants

Pursuant to §60.150, the provisions of this part apply to incinerators that combust wastes containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or incinerators that charge more than 1000 kg (2205 lb) per day municipal sewage sludge (dry basis), which commenced construction or modification after June 11, 1973. The City of Richmond's Wastewater Treatment Plant (WWTP) does not operate a sewage sludge incinerator and is not subject to the requirements of this subpart.

40 CFR Part 60 Subpart QQQ: Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

Pursuant to §60.690 the provisions of this subpart apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction commenced after May 4, 1987. Since the City of Richmond Wastewater Treatment Plant is a POTW and does not operate at a refinery, they are not subject to the requirements of this subpart.

STATEMENT OF COMPLIANCE

Regulation 1: General Provisions and definitions

This sludge handling project is subject to the public nuisance requirements of Regulation 1-301, which states the following:

"No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30-day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct."

The operation of S-160 is expected to meet the requirement of Regulation 1-301 with the installation of the new carbon scrubber, A-162 designed to control odors from the rotary drum thickeners (RDTs). The concentration limit on H_2S in the permit conditions is also expected to minimize odors from the fugitive emissions of the open flow equalization tank.

Regulation 6, Rule 1: Particulate Matter, General Requirements
The purpose of this Regulation is to limit the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, emission concentrations, visible emissions and opacity. The replacement sludge handling facility (S-160) and carbon scrubber (A-162) are not expected to be sources of particulate.

Regulation 8, Rule 2, Miscellaneous Operations
The purpose of this Rule is to reduce emissions of precursor organic compounds from miscellaneous operations. The standards of this regulation limit discharge into the atmosphere from any miscellaneous operation an emission containing more than 6.8 kg (15 lbs) per day and containing a concentration of more than 300 PPM total carbon on a dry basis.
As shown in the criteria emissions section of this report, the daily emissions rate for POC is 4.8 lbs. These emissions are below 15 lbs/day, so the source will comply with Section 8-2-301.

Regulation 8, Rule 8: Wastewater Collection and Separation Systems
Pursuant to Regulation 8-8-116, the requirements of Sections 8-8-301 through 8-8-314 do not apply to any publicly owned municipal wastewater treatment (POTW) facility. The City of Richmond's Wastewater Treatment Plant (WWTP) is not subject to the requirements of this rule since the facility is a POTW.

Regulation 9, Rule 2: Hydrogen Sulfide
Per Regulation 9-2-301, a person shall not emit during any 24-hour period, hydrogen sulfide (H_2S) in such quantities as to result in ground level concentration in excess of 0.06 ppm averaged over three consecutive minutes or 0.03 ppm averaged over any 60 consecutive minutes.

Results from this H_2S modeling analysis indicate that the maximum modeled 1-hour concentration from these emission sources is 49 $\mu g/m^3$, or 0.04 ppm. In accordance with the District's Regulation 9-2-301, this maximum modeled ground level concentration of 0.04 ppm exceeds 0.03 ppm averaged over any 60 consecutive minutes. This estimate was based on an estimated H2S concentration of 13 mg/l in the flow to the equalization tank at S-160 and 1 ppm from the stack of A-162. The main contributor was the equalization tank.

For the project to comply with the requirements of the District's Regulation 9-2-301, the maximum H_2S hourly emission rate of the tank accompanying A-162 shall not exceed 0.17 pounds per hour. Specifically, the recommended maximum H_2S hourly emission limit that does not cause the H_2S ground-level concentration to exceed 0.03 ppm averaged over any 60 consecutive minutes.

Given the fugitive nature of H_2S emissions from the tank, the facility initiated extensive sampling that showed no more than 2 mg/l of hydrogen sulfide (H_2S). The City of Richmond Wastewater Treatment Plant has agreed to a permit limit of 11 mg/l of H_2S in the wastewater held in the open tank that would translate

to estimated emissions of 0.166 pounds/hour. Details on the facility's sulfur sampling are in the application folder.

California Environmental Quality Act (CEQA)
The applicant has provided a CEQA Initial Study/Mitigated Negative Declaration signed November 30, 2016, by the City of Richmond. The findings on the City of Richmond wastewater treatment plant and collection system improvements project (that includes the upgrades to the sludge handling facility described in this permit application) are that the project would not have a significant adverse effect on the environment. This document is available in the application file.
Additionally, on September 13, 2016, the City of Richmond Wastewater Treatment Plant found the project to be categorically exempt from CEQA per §15302 and §15303 for critical improvements being implemented to replace non-functioning or obsolete treatment processes that will have no significant environmental impacts under CEQA. The proposed improvements would be made within the existing development footprint of the wastewater treatment plant, and excavation will not occur in previously undisturbed areas.
Relying on these findings, the project described in this application satisfies the CEQA requirements.

Prevention of Significant Deterioration (PSD)
PSD requirements in Regulation 2-2-304 apply to new major facilities and major modifications at a major facility. The City of Richmond is not a major facility, and this application is not part of a PSD project as defined in Regulation 2-2. Therefore, the PSD requirements do not apply.

California Health & Safety Code §42301.6 and Regulation 2-1-412
Pursuant to California Health & Safety Code §42301.6(a), prior to approving an application for a permit to construct or modify a source, which is located within 1,000 feet from the outer boundary of a school site, the Air District shall prepare a public notice as detailed in §42301.6. §42301.9(a) defines a "school" as any public or private school used for the purposes of the education of more than 12 children in kindergarten or any grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.

Pursuant to Regulation 2-1-412, prior to approving an application for a permit to construct or modification of a source, which is located within an Overburdened Community and for which a Health Risk Assessment is required pursuant to Regulation 2-5-401, the Air District shall prepare a public notice as detailed in §42301.6.
As per Regulation 2-1-243, an Overburdened Community is defined as an area located within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen) Version 4.0, as having an overall CalEnviroScreen score at or above the 70th percentile or within 1,000 feet of any such census tract.
This project is over 1,000 feet from the nearest K-12 school, therefore Regulation 2-1-412(i) does not apply. However, this project is located within an overburdened community and an HRA was required. Therefore, this project is subject to the public notification requirements of Regulation 2-1-412(ii).
A 30-day public notice will be distributed to satisfy this requirement.

PERMIT CONDITIONS

Permit condition #100920
Equipment included in this permit condition:
S-160 Sludge handling: Three rotary drum thickeners (one on standby) and one open equalization tank
A-162 Carbon scrubber

GENERAL REQUIREMENTS

1. The owner/operator shall ensure that the throughput does not exceed 367.92 million gallons of wastewater during any consecutive twelve-month period.

[Basis: Cumulative Increase, Regulation 2-1-320]

2. The owner/operator shall ensure that the sulfur content in the wastewater fed to and held in the open equalization tank associated with S-160 does not exceed 11 mg/l of H_2S at any time during any consecutive twelve-month period.

[Basis: Regulation 9-2, Regulation 2-5, Regulation 2-1-320]

3. The owner/operator shall abate the emissions from the thickeners included in S-160 by A-162 at all times, except that A-162 can be out of service for up to 24 hours per calendar year for the changing out of media or other similar maintenance. The owner/operator shall ensure that adsorption media vessels are not desorbed on site.

[Basis: Cumulative Increase, BACT, Regulation 2-1-320]

4. The owner/operator shall ensure that the maximum gas flow out of A-162 is 1,700 actual cubic feet per minute (acfm) and that the minimum gas flow is 1,360 acfm while A-162 is in operation.

[Basis: Cumulative Increase, BACT, Regulation 2-1-320]

5. The owner/operator shall ensure that the stack outlet of A-162 located under the canopy is at least 9.3 feet above grade with an inner diameter of 20 inches and emits vertically with an open cap.

[Basis: Regulation 9-2, Regulation 2-5, Regulation 2-1-320]

6. The owner/operator of A-162 shall use the monitoring results obtained from part 11 and/or part 13 to estimate the frequency of A-1 carbon changeout necessary to maintain compliance with part 10.

[Basis: Cumulative Increase, Regulation 9-2]

EMISSION LIMITATIONS

7. The owner/operator shall ensure that the abated hydrogen sulfide (H_2S) emissions from S-160 do not exceed 1 ppmv, measured at the outlet of A-162.

[Basis: Regulation 2-1-320]

8. The owner/operator shall ensure that the abated precursor organics (POC) emissions from S-160, do not exceed 50 ppmv, measured as methane, at the outlet of A-162 on an annual average basis. The owner/operator shall ensure that the abated precursor organics (POC) emissions from S-160, do not exceed 100 ppmv, measured as methane, at the outlet of A-162 on an instantaneous basis.

[Basis: Cumulative Increase, Regulation 2-1-320]

9. The owner/operator shall ensure that the abated ammonia (NH_3) emissions from S-160, do not exceed 10 ppmv, at the outlet of A-162.

[Basis: Regulation 2-1-320]

MONITORING REQUIREMENTS

10. The owner/operator of A-162 shall immediately schedule change out with unspent carbon for each carbon vessel exhibiting breakthrough, defined as detection at its outlet of whichever occurs first of the following:
    a. 50 ppmv POC (measured as methane), or
    b. 1 ppmv H_2S or
    c. 10 ppmv NH_3

[Basis: Cumulative Increase, Regulation 2-1-320]

11. The owner/operator shall conduct the monitoring required by Part 7, 8, and 9 of this condition in accordance with any of the following methodologies:
    a. Portable Instrument Methods:
        i. Hydrogen Sulfide, H_2S measured using a Jerome meter (or equivalent portable meter with an H_2S sensor capable of measuring up to 800 ppmv H_2S), provided the instrument is maintained and calibrated per manufacturer's specifications and a bump test is performed and recorded prior to data collection), or other Air District approved method. In the event that H_2S levels exceed 800 ppmv, the owner/operator shall commence to perform a source test using the method of Part 11(b) of this condition.
        ii. Precursor Organics, POC measured as methane using Flame ionization detectors (FIDs) and/or Photoionization detectors (PIDs) or other Air District approved method.
            1. If the measured concentration is over 50 ppm, the owner/operator may subtract the methane from the concentration with a portable Flame ionization detector (FID) equipped with an activated carbon filter tip, or Air District approved instrument.
            2. A POC measurement by the FID exceeding 50 ppm shall not be deemed a violation but shall trigger a requirement to test a sample from the outlet using EPA Method 18 or Air District approved equivalent method to demonstrate compliance. The owner/operator shall ensure that the detection limit of the testing method chosen is comparable to the results of the FID and the limit as per Part 8 of this condition. The sample for the confirmation test shall be collected on the same day an exceedance is measured. The owner/operator shall follow proper sample collection methodology for the laboratory method chosen, including but not limited to; proper sample media, and hold times. The owner/operator shall obtain the results of the test within two weeks of gathering the sample. If the results of the test show non-compliance, the owner/operator shall report the results to the Compliance and Enforcement Division of the Air District.
        iii. NH_3 estimated by NIOSH Method 6015: Ammonia or measured using reliable Ammonia Draeger tubes, or a well maintained and calibrated portable ammonia instrument approved by the Air District. In the event that NH_3 levels exceed portable meter's maximum range, the owner/operator shall commence to perform a source test using the method of Part 11(c) of this condition
    b. Chromatographic Method: The owner/operator may sample and test for sulfides according to BAAQMD Lab Method 44A (Manual of Procedures, Volume III), or by ASTM Method 5504, or by any other equivalent method, approved in advance by the Air District.
    c. Specific Ion Electrode Method: The owner/operator may sample and test for ammonia according to BAAQMD Lab Method 1A (Manual of Procedures, Volume III), or by any other equivalent method, approved in advance by the Air District.

12. To demonstrate compliance with the limits in by Part 7, 8, and 9 of this condition, the owner/operator shall measure at the outlet of each vessel of A-162 on a daily basis at least 5 days per week for the first two months of operation of A-162 and on a weekly basis thereafter, if all daily concentrations show compliance with the full emission limit of the respective devices. The results from the first week of testing shall be submitted to the Engineering Division within 30 days of startup of A-162. The results from the first two months of testing shall be submitted to the Engineering Division to initially reduce the testing frequency from daily to weekly. The owner/operator can reduce the monitoring frequency from weekly to monthly if all readings are below one half of the emission limits of the respective devices for two months and the results of this testing are submitted to the Engineering Division. If readings rise above the emission limits, monitoring frequency will return to daily until two months of consecutive compliance can be demonstrated, at which point testing shall again be submitted to the Engineering Division to reduce testing frequency from daily to weekly. The reduction in monitoring frequency will be handled administratively.

These recordkeeping and submission requirements do not replace the recordkeeping requirements contained in any applicable Air District regulations.

[Basis: Regulation 2-1-403]

13. The owner/operator shall maintain the following records in an Air District-approved log:
    a. H_2S concentration records as required by Part 2;
    b. H_2S volumetric concentration records as required by Part 7;
    c. POC volumetric concentration records as required by Part 8;
    d. NH_3 volumetric concentration records as required by Part 9;
    e. Calibration records and manufacturer specifications of the equipment used to measure the pollutants
    f. Quantities of wastewater processed at the source on a daily and monthly basis, in gallons
    g. Daily and monthly throughput shall be totaled for each consecutive twelve-month period as required by Part 1.
    h. Dates of all Carbon Absorption media change-outs from A-162, identification of the odor control system train that requires service, nature and the duration of change out or maintenance activity.
    i. Exhaust flow rate through A-162 during monitoring.

All records shall be retained onsite for two years from the date of entry and made available for inspection by Air District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable Air District regulation.
[Basis: Cumulative Increase, Regulation 2-1-320, 9-2]

End of Conditions

RECOMMENDATION

The Air District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source will be located within an Overburdened Community which triggers the public notification requirements of Air District Regulation 2-1-412. After the comments are received and reviewed, the Air District will make a final determination on the permit.

Recommend that the Air District initiate a public notice and consider any comments received prior to taking final action on the following:

S-160 **Sludge Handling**
Three Rotary Drum Thickeners (1 on standby)
and one open flow equalization tank (366,650-gallon capacity)

abated by:

A-162 **Carbon scrubber, 53 cubic feet of media per unit**
Make: EcoVerde, Model: EG Carbon Adsorber
Maximum air flowrate: 1,700 cfm

By: _____ Date: _____
MK, SAQE

APPENDIX A: SUMMARY OF WASTEWATER TESTING PERFORMED DECEMBER 2025

Compound*	Sampling result
Ammonia	7.6 mg/L
Total sulfide	13 mg/L
dibromodichloromethane	0.15 ug/L
Toluene	2.0 ug/L
Chloroform	2.2 ug/L
bromodichloromethane	0.28 ug/L

*All other EPA Method 8620 compounds were reported as non-detects. See application file for more information.