TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit / Nonroad Engine Permit 24-3653
Air Discharge Permit / Nonroad Engine Permit Application CL-3267

Issued: August 5, 2024

PORT of VANCOUVER USA

SWCAA ID – 779

Prepared By: Clint Lamoreaux
Air Quality Engineer
Southwest Clean Air Agency

TABLE OF CONTENTS

ABBREVIATIONS

List of Acronyms

ADP ..... Air Discharge Permit
AP-42 ..... Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA
ASIL..... Acceptable Source Impact Level
BACT..... Best available control technology
BART ..... Best Available Retrofit Technology
CAM ..... Compliance Assurance Monitoring
CAS#..... Chemical Abstracts Service registry number
CFR..... Code of Federal Regulations
EPA..... U.S. Environmental Protection Agency
EU ..... Emission Unit
LAER..... Lowest achievable emission rate
MACT..... Maximum Achievable Control Technologies
NESHAP..... National Emission Standards for Hazardous Air Pollutants
NOV..... Notice of Violation/
NSPS..... New Source Performance Standard
PSD ..... Prevention of Significant Deterioration
RACT..... Reasonably Available Control Technology
RCW ..... Revised Code of Washington
SQER ..... Small Quantity Emission Rate listed in WAC 173-460
Standard ..... Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
SWCAA ..... Southwest Clean Air Agency
T-BACT ..... Best Available Control Technology for toxic air pollutants
WAC ..... Washington Administrative Code

List of Units and Measures

acfm ..... Actual cubic foot per minute
bhp ..... Brake horsepower
dscfm..... Dry Standard cubic foot per minute
gr/dscf ..... Grain per dry standard cubic foot
hp ..... Horsepower
kW..... Kilowatt
MMBtu .....Million British thermal unit
ppm .....Parts per million
ppmv .....Parts per million by volume
ppmvd .....Parts per million by volume, dry
ppmw .....Parts per million by weight
scf/hr .....Standard cubic foot per hour
tpy .....Tons per year

List of Chemical Symbols, Formulas, and Pollutants

CH_4..... Methane
CO ..... Carbon monoxide
CO_2..... Carbon dioxide
CO_2e..... Carbon dioxide equivalent
H_2S ..... Hydrogen sulfide
HAP ..... Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
N_2O ..... Nitrous oxide
NO_2 ..... Nitrogen dioxide
NO_X..... Nitrogen oxides
O_2 ..... Oxygen
O_3 .....Ozone
PM .....Particulate Matter with an aerodynamic diameter 100 µm or less
PM_{10}.....PM with an aerodynamic diameter 10 µm or less
$PM_{2.5}$ .....PM with an aerodynamic diameter 2.5 µm or less
SO_2.....Sulfur dioxide
SO_X .....Sulfur oxides
TAP.....Toxic air pollutant pursuant to Chapter 173-460 WAC
VOC.....Volatile organic compound

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name:	Port of Vancouver, USA
Applicant Address:	3103 NW River Road, Vancouver WA 98660
Facility Name:	Port of Vancouver, USA
Facility Address:	3103 NW River Road, Vancouver WA 98660
SWCAA Identification:	779
Contact Person:	Mary Mattix, Director of Environmental Services
Primary Process:	Marine Port
SIC/NAICS Code:	4491: Marine Cargo Handling 488320: Marine Cargo Handling
Facility Latitude and Longitude:	45° 38′ 36.44″ N -122° 42′ 13.05″ W
Facility Classification:	Natural Minor; Nonroad Engine

2. FACILITY DESCRIPTION

The Port of Vancouver, USA (the Port), is a regional logistics load center for the transportation network of the Pacific Northwest. Situated on the Columbia River, the Port is a gateway to the river-barge ports of Eastern Oregon/Washington and Northern Idaho. The Port is also the transfer and switching center for four major railroad lines serving North America: Burlington Northern Santa Fe, Union Pacific, Canadian National and Canadian Pacific Railroads.

The Port of Vancouver, USA (the Port), is a regional logistics load center for the transportation network of the Pacific Northwest, positioned at a key crossroads of ocean-bound and river shipping lanes, interstate highways and national rail lines. Situated at the terminus of the Columbia River's deep-draft shipping channel, the Port is a gateway to the river-barge ports of Eastern Oregon/Washington and Northern Idaho while also offering 13 berths serving international deep-draft vessel traffic. The Port is also situated at the convergence of two major North American railroad lines and is served by four major railroads: Burlington Northern Santa Fe, Union Pacific, Canadian National and Canadian Pacific Railroad. Due to its proximity to key road networks, many local and interstate trucking lines regularly serve the port and its roughly 50 tenants.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CL-3267 received March 25, 2024. The Port of Vancouver submitted ADP/NEP application CL-3267 requesting the following:

- Removal of the following two trailer-mounted engines from the permit because they are operated as nonroad engines rather stationary engines and were installed before permitting of nonroad engines was required (SWCAA 400-045 and SWCAA 400-046):
  Unit 300 Compressor Engine
  Unit 314 Compressor Engine
- Removal of the following three nonroad engines from the permit because they are on a piece of self-propelled equipment exempt from permitting by SWCAA 400-045(3)(k):
  Vac Machine 524 Engine
  Sweeper 206 Engine
  Sweeper 218 Engine
- Reclassification of the trailer-mounted Terminal 5 Generator Engine as a nonroad engine because it has always and will always operate as a nonroad engine.
- Removal of the limitations on the number of hours emergency engines can operate for emergency service.

ADP/NEP 24-3653 will supersede ADP/NEP 15-3167, SUN-163, and SUN-299 in their entirety.

4. PROCESS DESCRIPTION

The Port of Vancouver handles a broad range of cargoes, including general, breakbulk, project and direct transfer cargoes, containers, automobiles, forest products, steel and aluminum products, liquid bulks, and a number of dry bulk commodities such as bauxite, mineral ores, concentrates, fertilizers, sands, clays, grains and other bulk agricultural commodities. With the exception of bauxite, fertilizer and urea, all bulk material handling is conducted by other tenants under separate registration (e.g. Kinder-Morgan).

Equipment is utilized by the Port of Vancouver to maintain and operate key port facilities. These include vacuum sweepers, generators, pumps, compressors, and other miscellaneous equipment.

A commingled groundwater plume from the former Swan Manufacturing Company (SMC) and the Cadet Manufacturing Company (Cadet) is contaminated with chlorinated solvents including trichloroethylene (TCE), tetrachloroethylene (PCE), 1,1 dichloroethene (1,1-DCE), 1,2 dichloroethane (1,2-DCA) and cis-1,2 dichloroethene (cis-1,2-DCE). The Washington Department of Ecology has issued an Agreed Order (No. 07-TC-SDE5189) which requires the Port to complete a remedial investigation, implement interim action clean-up and conduct a feasibility study. Although SWCAA is usually not involved in projects that have an Agreed Order, the WDOE requested that SWCAA issue an Air Discharge Permit. This activity was addressed under separate registration by Air Discharge Permit 12-3024.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a. Bulk Material Handling (*existing*). The Port conducts shipping and handling operations for a variety of bulk materials. Previously handling materials include bauxite, fertilizer (e.g. calcium nitrate, ammonium sulfate), urea, and zircon sand. Bulk materials are

primarily received from ship or barge using a clam-shell bucket, but can also be received via rail or truck.

Received materials are transferred into trucks in one of two ways. Bulk materials that are not inherently dusty may be transferred directly to trucks or uncontrolled hoppers. Uncontrolled transfer of materials is allowed if the material is not dusty (visible emissions do not exceed 0% opacity using SWCAA Method 9) and the material contains no components considered hazardous or toxic air pollutants. Bulk materials with the potential to generate significant dust emissions are transferred to trucks using a hopper equipped with a three-sided enclosure. The enclosure is vented to a trailer-mounted baghouse, which captures the fugitive dust. All transfer of bauxite and bulk materials other than urea and fertilizer is conducted using the hopper enclosure and baghouse unless otherwise pre-approved by SWCAA.

The trailer-mounted baghouse is described as follows:

Make / Model:	Dalamatic model D 180
Exhaust Rate:	13,500 acfm
Filter Area:	1,940 ft^2
Exhaust Stack:	24″ x 30″ at ~15′ above grade

5.b. Terminal 5 Generator Engine (*existing*). The Terminal 5 Generator engine drives a trailer-mounted generator set that can generate up to 36 kW (prime) and 40 kW (standby) power. Engine details are provided below:

Engine Make / Model:	Isuzu / BB4JG1T
Fuel:	Diesel, 2.8 gallons per hour @ full standby load
Engine Power:	55.3 hp
Engine Built:	Model year 2009
Engine Certification:	EPA Interim Tier 4
Stack Description:	~3″ diameter, vertical at ~6.5′ above grade
Location:	Terminal 5 near waterfront,

	45°38′48.446″ N, 122°44′4.140″ W
NSPS/NESHAP/MACT:	None – Nonroad engine subject to 40 CFR 1039

5.c. Unit 316 Compressor Engine (*existing*). The Unit 316 Compressor engine drives a trailer-mounted compressor unit. Engine details are provided below:

Engine Make / Model:	John Deere / 4045DF150 (s/n PE4045D396002)
Fuel:	Diesel, ~29.9 lb/hr (4.15 gallons per hour) at full load
Engine Power:	48 hp
Engine Built:	September 4, 2004
Engine Certification:	EPA Tier 1
Stack Description:	~3″ diameter, vertical at ~6′ above grade
Stack Flow:	434 acfm @ 1,166°F
NSPS/NESHAP/MACT:	None – Nonroad engine subject to 40 CFR 1039

5.d. Terminal 5 Well Pump Engine (*existing*). The Terminal 5 Well Pump Engine drives the only pump for this well. This unit is not a backup (e.g. to an electric well pump). Engine details are provided below:

Engine Make / Model:	Allis-Chalmers / 685T (s/n 11-30118)
Fuel:	Diesel
Engine Power:	220 hp
Engine Built:	Prior to 1986
Engine Certification:	None
Stack Description:	~6″ diameter, vertical at ~12′ above grade
NSPS/NESHAP/MACT:	40 CFR 63 Subpart ZZZZ
Location:	Terminal 5, 45°38′52.447″ N, 122°43′43.238″ W

5.e. Pump House 3 Well Pump Engine (*existing*). The Pump House 3 Well Pump Engine drives a backup water pump at Pump House 3. Engine details are provided below:

Engine Make / Model:	Detroit Diesel / 10447110 (s/n 4A0241071)
Fuel:	Diesel
Engine Power:	134 hp
Engine Built:	September 5, 1979
Engine Certification:	None
Stack Description:	4″ diameter, horizontal at ~10′ above grade
Stack Flow:	1,110 acfm @ 960°F
NSPS/NESHAP/MACT:	40 CFR 63 Subpart ZZZZ
Location:	Located inside building on southeast side of Great Western Malting, UTM 10T 45°37′46.646″ N , 122°41′26.848″ W

5.f. Administration Offices Emergency Generator Engine (*existing*). The Administration Offices Emergency Generator Engine will drive a 75 kW electrical generator that is used to provide

emergency power to the administrative building offices. The following equipment details were available:

Engine Make / Model:	Ford / WSG-1068 (s/n A130441384)
Fuel:	Propane, 415 scf/hr @ full load (rich burn engine w/air-fuel ratio controller)
Engine Power:	119.8 bhp at full standby load
Engine Built:	November 16, 2012
Stack Description:	~3″ diameter, vertical at 76.9″ above grade
Stack Flow:	535 acfm @ 1,238°F
NSPS/NESHAP/MACT:	40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ
Generator Make / Model:	Cummins / GGHF
Generator Output:	75 kW (fueled on propane)
Location:	Immediately north of the Port of Vancouver administrative building, 45°38′36.55″N, 122°42′15.67″W

5.g. Centennial Industrial Building (CIB) Emergency Fire Pump Engine (*existing*). A diesel-engine powered Clark fire pump has been installed in the Centennial Industrial Building. This unit was originally approved under SUN-163. The following equipment details were available:

Location:	3300 NW 32nd Ave., Vancouver, WA Fire Pump Room (south side of indent on west side of building) ~ 45°38′46.68″N, 122°42′15.49″W
Engine Make / Model:	John Deere / 4045HF280G
Engine Serial Number:	PE4045N001860
Fuel:	Diesel
Fuel Consumption:	4.38 gallons per hour at full load (78.5 mm^3/stroke, 1,760 rpm from EPA certification test)
Horsepower Rating:	86 hp (64 kW)
Installation Date:	January 2018
Engine Built (Date):	January 3, 2017
Engine Certification:	EPA Tier 3 for stationary emergency engines
Fire Pump Make / Model:	Clarke / JU4H-UFADJ8
Stack Description:	(Estimated from photographs) ~2.5″ diameter stack discharging out the side of the building, oriented vertically ~14′ above grade. Stack flow and temperature not available.
Applicable Federal Regulations:	40 CFR 60 Subpart IIII 40 CFR 63 Subpart ZZZZ

5.h. Pump House 1 Emergency Generator Engine (*existing*). A 400-kW diesel-fired emergency generator set will be installed to pump water at pump house 1, in case of an emergency power

outage. Water is used for drinking water, process water, and fire suppression. This unit was originally approved under SUN-299. The following equipment details were available:

Location:	Pump House 1 3103 NW Lower River Road, Vancouver, WA 98660 ~ 45°37′50.16″N, 122°41′22.30″W
Engine Make / Model:	John Deere / 6135HFG84
Engine Serial Number:	R573858
Fuel:	Diesel
Fuel Consumption:	29 gallons per hour at full standby load
Horsepower Rating:	617 bhp
Installation Date:	March 2023
Engine Built (Date):	December 2022
Engine Certification:	EPA Tier 3 for stationary emergency engines
Generator Set Make / Model:	MTU / 6R0225 DS400
Generator Set Output:	400 kW
Stack Description:	exhausting vertically ~11′ above grade. Stack flow 2,606 acfm at 981°F
Applicable Federal Regulations:	40 CFR 60 Subpart IIII 40 CFR 63 Subpart ZZZZ

5.i. Other Equipment:

Miscellaneous Unpermitted Nonroad Engines. The Port of Vancouver operates a variety of nonroad engines at the facility for which SWCAA has determined that nonroad permit applications are not required. These engines include:

1. Any nonroad engine that drives the wheels or tracks of rolling stock, including excavators/backhoes, tractors, cranes, forklifts, front end loaders, dozers, compactors, manlifts, railroad equipment and road building equipment (e.g. asphalt spreader).
2. Engines on mobile cranes.
3. Small engines under 48 horsepower (welders, chain saws, brush cutters, blowers, weed-wackers, etc.).

Unit 300 Compressor Engine (*existing*). The Unit 300 Compressor engine drives a trailer-mounted compressor unit. This engine was not subject to permitting because it was installed before SWCAA 400-045 and SWCAA 400-046 were effective. Engine details are provided below:

Engine Make / Model:	John Deere / 4239D (s/n CD4239D669044)
Fuel:	Diesel, ~30 lb/hr (4.16 gallons per hour) at full load
Engine Power:	80 hp
Engine Built:	1986
Engine Certification:	None
Stack Description:	~3″ diameter, vertical at ~6′ above grade

Stack Flow:	417 acfm @ 1,202°F
NSPS/NESHAP/MACT:	None – Nonroad engine subject to 40 CFR 1039

Unit 314 Compressor Engine (*existing*). The Unit 314 Compressor engine drives a trailer-mounted compressor unit. This engine was not subject to permitting because it was installed before SWCAA 400-045 and SWCAA 400-046 were effective. Engine details are provided below:

Engine Make / Model:	John Deere / 4039D (s/n CD4039D103271)
Fuel:	Diesel, ~29.9 lb/hr (4.15 gallons per hour) at full load
Engine Power:	80 hp
Engine Built:	1991
Engine Certification:	None
Stack Description:	~3″ diameter, vertical at ~6′ above grade
Stack Flow:	434 acfm @ 1,166°F
NSPS/NESHAP/MACT:	None – Nonroad engine subject to 40 CFR 1039

Vac Machine 524 Engine (*existing*). The Vac Machine Engine drives a skid-mounted vacuum unit (Unit #524) used for cleaning stormwater systems (e.g. catch basins) and with the wastewater system. Engine details are provided below:

Engine Make / Model:	John Deere / 4045TF150A (s/n Unknown)
Fuel:	Diesel
Engine Power:	115 hp
Engine Built:	2002
Engine Certification:	EPA Tier 1
Stack Description:	~3″ Diameter, vertical, ~5.5′ above ground
NSPS/NESHAP/MACT:	None – Nonroad engine subject to 40 CFR 1039

Sweeper 206 Engine (*existing*). The Sweeper 206 Engine drives sweeper motor on a mobile street sweeper (Unit #206). This engine is exempted from permitting by SWCAA 400-045(k).Engine details are provided below:

Engine Make / Model:	John Deere / 4045HF285, 4 cylinder, 276 cubic inch displacement
Engine Serial Number:	PE4045L026407
Fuel:	Diesel
Engine Power:	140 hp
Engine Built:	January 4, 2008
Engine Certification:	EPA Tier 3
Stack Description:	~3″ Diameter, vertical, ~5.5′ above ground
NSPS/NESHAP/MACT:	None – Nonroad engine subject to 40 CFR 1039

Sweeper 218 Engine (*existing*). The Sweeper 218 Engine drives sweeper motor on a mobile street sweeper (Unit #218). This engine is exempted from permitting by SWCAA 400-045(k). Engine details are provided below:

Engine Make / Model:	John Deere / 4045HF285C, 4 cylinder, 276 cubic inch displacement
Engine Serial Number:	PE4045L222122
Fuel:	Diesel
Engine Power:	115 hp
Engine Built:	July 13, 2012
Engine Certification:	Not EPA Tier certified. Hardship exemption per 40 CFR 1058.255. John Deere serial number specific information indicates engine meets Tier 3 standards. Tier 4 standards would otherwise be applicable.
Stack Description:	~3″ diameter
NSPS/NESHAP/MACT:	None – Nonroad engine subject to 40 CFR 1039

Fuel Storage Tank. One above-ground fuel storage tank split into two compartments. One 2,000 gallon compartment is used for gasoline, and one 2,000 gallon compartment is used for diesel fuel. The gasoline storage tank utilizes submerged fill and two-point Stage I vapor recovery equipment. Gasoline throughput has been too small to justify registration as an emission unit.

5.j. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Bulk Material Handling	Partial enclosure, Dalamatic baghouse for dusty materials
2	Terminal 5 Generator Engine (nonroad engine)	Ultra Low Sulfur Diesel (≤ 0.0015% S) EPA Interim Tier 4
3	Unit 316 Compressor Engine (nonroad engine)	Ultra Low Sulfur Diesel (≤ 0.0015% S)
4	Terminal 5 Well Pump Engine (stationary non-emergency)	Ultra Low Sulfur Diesel (≤ 0.0015% S) Limited Operation (≤ 1,000 hr/yr) EPA Tier 1
5	Pump House 3 Well Pump Engine (stationary emergency)	Ultra Low Sulfur Diesel (≤ 0.0015% S) Limited operation – (≤ 100 hr/yr + emergency usage)
6	Administration Offices Emergency Generator Engine (stationary emergency)	Propane fuel, Compliant with 40 CFR 60 Limited operation – (≤ 100 hr/yr + emergency usage) Subpart JJJJ Emission Levels

ID No.	Equipment/Activity	Control Equipment/Measure
7	Centennial Industrial Building (CIB) Emergency Fire Pump Engine (stationary emergency)	Ultra Low Sulfur Diesel (≤ 0.0015% S) Limited operation – (≤ 100 hr/yr + emergency usage) EPA Tier 3
8	Pump House 1 Emergency Generator Engine (stationary emergency)	Ultra Low Sulfur Diesel (≤ 0.0015% S) Limited operation – (≤ 100 hr/yr + emergency usage) EPA Tier 3

6. EMISSIONS DETERMINATION

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

(a) Continuous emissions monitoring system (CEMS) data;
(b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
(c) Source emissions test data (other test method); and
(d) Emission factors or methodology provided in this TSD.

Nothing precludes the use, including the exclusive use of any credible evidence or information relevant to identifying or quantifying emissions if methods identified above, in the ADP, or elsewhere in this TSD have not provided adequate quantification of actual emissions.

6.a. Bulk Material Handling. Emissions from bulk material handling include fugitive particulate matter and emissions which pass through the portable Dalamatic baghouse. Note the estimates below only apply to products that are transferred without visible emissions exceeding zero percent opacity as determined using SWCAA Method 9.

Material Transfer Emissions (Bauxite, Urea, Fertilizer)
($PM_{10}/PM_{2.5}$ Emissions)

	Rated flow (cfm)	Hours of Op.	gr/dscf	Emissions lb/hr	tpy
Dalamatic Baghouse Exhaust	13,500	1,350	0.005	0.58	0.39

Fugitive Emissions

Fugitive Emissions	Throughput Tons	Emissions lb/ton	Control Factor %	Emissions tons	Emission Factor Source
Material transferred with baghouse	100,000	0.03	99%	0.015	SWCAA estimation
Material transfer without baghouse	500,000	0.03	0%	7.5	SWCAA estimation

All PM was assumed to be $PM_{2.5}$ because it is impossible to estimate size fractions for future materials and no size fraction data was available for any of the existing materials.

6.b. Terminal 5 Generator Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 500 hours per year.

Terminal 5 Generator Engine

Hours of Operation =	500	hours
Power Output =	55.3	horsepower
Diesel Density =	7.206	pounds per gallon
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	2.8	gal/hr
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)

Pollutant	Emission Factor lb/hp-hr	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	0.0066139	0.37	0.09	CARB Certificate
CO	0.0030865	0.17	0.04	CARB Certificate
VOC	0.00247	0.14	0.03	AP-42 Table 3.3-1 (10/96)
SO_X as SO_2		0.0006	0.0002	Mass Balance
PM	0.0005071	0.03	0.007	CARB Certificate
PM_{10}	0.0005071	0.03	0.007	CARB Certificate
$PM_{2.5}$	0.0005071	0.03	0.007	CARB Certificate

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	Emission Factor Source
CO_2	73.96	1	163.05	23	16	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.02	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.04	40 CFR 98
Total GHG - CO_2e	74.0		163.6	23	16	

6.c. Unit 316 Compressor Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 500 hours per year.

Unit 316 Compressor Engine

Hours of Operation =	500	hours
Power Output =	48	horsepower
Diesel Density =	7.206	pounds per gallon
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	2.60	gallons per hour (estimated from JD consumption curve)
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)

Pollutant	Emission Factor lb/hp-hr	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	0.0156182	0.75	0.19	Tier 1 Standard
CO	0.00668	0.32	0.080	AP-42 Table 3.3-1 (10/96)
VOC	0.0025141	0.12	0.030	AP-42 Table 3.3-1 (10/96)
SO_X as SO_2		0.0006	0.0001	Mass Balance
PM	0.0022	0.11	0.026	AP-42 Table 3.3-1 (10/96)
PM_{10}	0.0022	0.11	0.026	AP-42 Table 3.3-1 (10/96)
$PM_{2.5}$	0.0022	0.11	0.026	AP-42 Table 3.3-1 (10/96)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	Emission Factor Source
CO_2	73.96	1	163.05	23	15	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.01	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.04	40 CFR 98
Total GHG - CO_2e	73.9636		163.613	23	15	

6.d. Terminal 5 Well Pump Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 1,000 hours per year.

Terminal 5 Well Pump Engine

Hours of Operation =	1,000	hours
Power Output =	220	horsepower
Diesel Density =	7.206	pounds per gallon
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	11.69	gallons per hour (0.383 lb/hp-hr)
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)

Pollutant	Emission Factor lb/hp-hr	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	0.031	6.82	3.41	AP-42 Table 3.3-1 (10/96)
CO	0.00668	1.47	0.73	AP-42 Table 3.3-1 (10/96)
VOC	0.0025141	0.55	0.277	AP-42 Table 3.3-1 (10/96)
SO_X as SO_2		0.0025	0.0013	Mass Balance
PM	0.0022	0.48	0.242	AP-42 Table 3.3-1 (10/96)
PM_{10}	0.0022	0.48	0.242	AP-42 Table 3.3-1 (10/96)
$PM_{2.5}$	0.0022	0.48	0.242	AP-42 Table 3.3-1 (10/96)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	Emission Factor Source
CO_2	73.96	1	163.05	23	132	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.13	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.32	40 CFR 98
Total GHG - CO_2e	73.9636		163.613	23	132	

6.e. Pump House 3 Well Pump Engine (*existing*). Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 200 hours per year. As an emergency engine, regular operation of this unit is limited to 100 hours per year or less.

Pump House 3 Well Pump Engine						
Hours of Operation =		200	hours			
Power Output =		134	horsepower			
Diesel Density =		7.206	pounds per gallon			
Fuel Sulfur Content =		0.0015	% by weight			
Fuel Consumption Rate =		6.80	gallons per hour (estimated)			
Fuel Heat Content =		0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)			
	Emission					
	Factor	Emissions	Emissions	Emission Factor		
Pollutant	lb/hp-hr	lb/hr	tpy	Source		
NO_X	0.031	4.15	0.42	AP-42 Table 3.3-1 (10/96)		
CO	0.00668	0.90	0.09	AP-42 Table 3.3-1 (10/96)		
VOC	0.0025141	0.34	0.034	AP-42 Table 3.3-1 (10/96)		
SO_X as SO_2		0.0015	0.0001	Mass Balance		
PM	0.0022	0.29	0.029	AP-42 Table 3.3-1 (10/96)		
PM_{10}	0.0022	0.29	0.029	AP-42 Table 3.3-1 (10/96)		
$PM_{2.5}$	0.0022	0.29	0.029	AP-42 Table 3.3-1 (10/96)		
			CO_2e	CO_2e		Emission Factor
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/gallon	tpy, CO_2e	Source
CO_2	73.96	1	163.05	23	15	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.02	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.04	40 CFR 98
Total GHG - CO_2e	73.9636		163.613	23	15	

6.f. Administration Offices Emergency Generator Engine. Potential annual emissions from the combustion of commercial propane were calculated with the assumption that the equipment will operate at full load for up to 200 hours per year. As an emergency engine, regular operation of this unit is limited to 100 hours per year or less.

Administration Offices Emergency Generator Engine

Hours of Operation =	200	hours
Power Output =	119.8	horsepower
Propane Weight =	4.24	lbs/gallon
Fuel Sulfur Content =	185	ppmw
Fuel Consumption Rate =	11.40	gallons per hour (415 scfh from Cummins)
Propane Heat Content =	0.091	MMBtu/gal (40 CFR 98)

Pollutant	Emission Factor lb/hp-hr	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	0.012566415	1.51	0.15	Cummins
CO	0.138671487	16.61	1.66	Cummins
VOC	0.002204634	0.26	0.026	Cummins
SO_X as SO_2	0.000172396	0.02	0.0021	Mass Balance
PM	0.000169441	0.02	0.002	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
PM_{10}	0.000169441	0.02	0.002	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
$PM_{2.5}$	0.000169441	0.02	0.002	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
1,1,2,2-Tetrachloroethane	2.20858E-07	2.6E-05	2.6E-06	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
Acetaldehyde	2.43554E-05	2.9E-03	2.9E-04	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
Acrolein	2.29587E-05	2.8E-03	2.8E-04	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
Benzene	1.37927E-05	1.7E-03	1.7E-04	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
Formaldehyde	0.000178956	2.1E-02	2.1E-03	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
Methylene Chloride	3.59657E-07	4.3E-05	4.3E-06	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
Toluene	4.87109E-06	5.8E-04	5.8E-05	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)
Xylene	1.70226E-06	2.0E-04	2.0E-05	AP-42 Sec 3.2 (7/00) for natural gas (4-stroke RB)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/ 10^3 gallon	tpy, CO_2e	Emission Factor Source
CO_2	61.71	1	136.05	12,380	14	40 CFR 98
CH_4	0.001	25	0.055	5	0.01	40 CFR 98
N_2O	0.0001	298	0.066	6	0.01	40 CFR 98
Total GHG - CO_2e	61.4611		136.168	12,391	14	

6.g. Centennial Industrial Building Emergency Fire Pump Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 200 hours per year.

Centennial Industrial Building Emergency Fire Pump Engine						
Hours of Operation =	200	hours				
Power Output =	86	horsepower (64 kW)				
Diesel Density =	7.206	pounds per gallon				
Fuel Sulfur Content =	0.0015	% by weight				
Fuel Consumption Rate =	4.38	gal/hr (78.5 mm^3/stroke)				
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)				
	Emission Factor	Emissions	Emissions			
Pollutant	g/(hp-hr)	lb/hr	tpy	Emission Factor Source		
NO_X	3.1	0.59	0.059	John Deere Emissions Data Sheet		
CO	0.6	0.11	0.011	John Deere Emissions Data Sheet		
VOC	0.2	0.038	0.0038	John Deere Emissions Data Sheet		
SO_X as SO_2		0.0009	0.00009	Mass Balance		
PM	0.17	0.03	0.0032	John Deere Emissions Data Sheet		
PM_{10}	0.17	0.03	0.0032	John Deere Emissions Data Sheet		
$PM_{2.5}$	0.17	0.03	0.0032	John Deere Emissions Data Sheet		
			CO_2e	CO_2e		Emission Factor
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/gallon	tpy, CO_2e	Source
CO_2	73.96	1	163.05	23	10	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.01	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.02	40 CFR 98
Total GHG - CO_2e	74.0		163.6	23	10	

6.h. Pump House 1 Emergency Generator Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 200 hours per year.

Pump House 1 Emergency Generator Engine

Hours of Operation =	200	hours
Power Output =	617	horsepower
Diesel Density =	7.206	pounds per gallon
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	29.0	gal/hr
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)

Pollutant	Emission Factor g/(bhp-hr)	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	2.65	3.60	0.360	John Deere
CO	1.15	1.56	0.156	John Deere
VOC	0.13	0.177	0.0177	John Deere
SO_X as SO_2		0.0063	0.00063	Mass Balance
PM	0.09	0.122	0.0122	John Deere
PM_{10}	0.09	0.122	0.0122	John Deere
$PM_{2.5}$	0.09	0.122	0.0122	John Deere

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	Emission Factor Source
CO_2	73.96	1	163.05	23	65	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.07	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.16	40 CFR 98
Total GHG - CO_2e			163.6	23	65	

6.i. Emissions Summary

Air Pollutant	Stationary Source Potential to Emit (tpy)	Nonroad Engine Potential to Emit (tpy)	Facilitywide Potential to Emit (tpy)	Project Impact (tpy)
NO_X	4.40	1.10	5.50	0
CO	2.65	0.51	3.16	0
VOC	0.36	0.37	0.73	0
SO_2	0.0042	0.0017	0.01	0
PM	8.19	0.10	8.29	0

Air Pollutant	Stationary Source Potential to Emit (tpy)	Nonroad Engine Potential to Emit (tpy)	Facilitywide Potential to Emit (tpy)	Project Impact (tpy)
PM_{10}	8.19	0.10	8.29	0
$PM_{2.5}$	8.19	0.10	8.29	0
CO_2/CO_2e	237	172	410	0

Toxic/Hazardous Air Pollutant [CAS#]	Potential to Emit (tpy)	Project Impact (tpy)
1,1,2,2-Tetrachloroethane [79-34-5]	2.6E-06	0
Acetaldehyde [75-07-0]	2.9E-04	0
Acrolein [107-02-8]	2.8E-04	0
Benzene [71-43-2]	1.7E-04	0
Formaldehyde [50-00-0]	2.1E-03	0
Methylene Chloride [75-09-2]	4.3E-06	0
Toluene [108-88-3]	5.8E-05	0
Xylenes [1330-20-7]	2.0E-05	0

7. REGULATIONS AND EMISSION STANDARDS

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this Permit consistent with implementation of Best Available Control Technology (BACT):

7.a. Title 40 Code of Federal Regulations (CFR) Part 60.4200 et seq. "Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" requires that new diesel engines meet specific emission standards at the point of manufacture and during operation. In addition, maximum fuel sulfur contents are specified, and minimum maintenance standards are established. The Centennial Industrial Building Fire Pump Engine, and the Pump House 1 Emergency Generator Engine are affected sources because they were manufactured after the relevant applicability date (April 1, 2006).

7.b. Title 40 CFR 60.4230 et seq. "Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines" requires that new spark ignition engines meet specific emission standards at the point of manufacture and during operation. Only the

Administrative Offices Emergency Generator Engine is an affected source under this regulation. Requirements relevant to the Administrative Offices Emergency Generator Engine include:

(1) If you are an owner or operator of an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine. [40 CFR 60.4237(c)] This regulation applies to this engine because CO emissions exceed that allowed for non-emergency engines. The generator set package includes an hour meter.

(2) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited. [40 CFR 60.4243(d)]

(3) For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR 60.4245(b)]

7.c. Title 40 CFR 63.6580 et seq. "Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines" establishes national emission limitations and operating limitations for HAP emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. With the exception of the nonroad engines, all of the engines specifically identified in this Permit are affected sources under this regulation. A new stationary RICE at an area source must comply with Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart IIII for compression ignition engines or 40 CFR 60 Subpart JJJJ for spark ignition engines. The Centennial Industrial Building Fire Pump Engine, and the Pump House 1 Emergency Generator Engine are new diesel engines at an area source; therefore, compliance with 40 CFR 60 Subpart IIII constitutes compliance

with 40 CFR 63 Subpart ZZZZ for these units. The Administration Office Emergency Generator Engine is a new spark-ignition engine at an area source; therefore, compliance with 40 CFR 60 Subpart JJJJ constitutes compliance with 40 CFR 63 Subpart ZZZZ for this unit. The Terminal 5 Well Pump Engine is an "existing" non-emergency engine at an area source. The Pump House 3 Well Pump Engine is an "existing" emergency engine at an area source.

For existing emergency engines at an area source, the owner or operator is required to:

(1) Change oil and filter every 500 hours of operation or annually, whichever comes first except as allowed by 40 CFR 63.6625(i). [40 CFR 63.6603(a) and Table 2d(4)(a)]
(2) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first. [40 CFR 63.6603(a) and Table 2d(4)(b)]
(3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a) and Table 2d(4)(c)]
(4) Operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]
(5) Install a non-resettable hour meter if one is not already installed. [40 CFR 63.6625(f)]
(6) Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]
(7) Report each instance in which the owner did not meet each operating limitation. [40 CFR 63.6640(b)]
(8) Limit operation of the engine to emergency use and maintenance checks and readiness testing. Operation for maintenance checks and readiness testing may be conducted only to the extent that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Operation for maintenance checks and readiness testing is limited to 100 hours per year. [40 CFR 63.6640(f)(1)(ii)]
(9) Record the occurrence and duration of each malfunction of operation (i.e., process equipment). [40 CFR 63.6655(a)(2)]
(10) Record maintenance conducted on the engine in order to demonstrate that the engine was operated and maintained according to the applicable maintenance plan. [40 CFR 63.6655(e)]
(11) Record the hours of operation of the engine by use of a non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR 63.6655(e)]

For existing non-emergency engines at an area source, the owner or operator is required to:

(1) Change oil and filter every 500 hours of operation or annually, whichever comes first except as allowed by 40 CFR 63.6625(i). [40 CFR 63.6603(a) and Table 2d(1)(a)]
(2) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first. [40 CFR 63.6603(a) and Table 2d(1)(b)]
(3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63.6603(a) and Table 2d(1)(c)]
(4) Operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]
(5) Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]
(6) Report each instance in which the owner did not meet each operating limitation. [40 CFR 63.6640(b)]
(7) Record the occurrence and duration of each malfunction of operation (i.e., process equipment). [40 CFR 63.6655(a)(2)]
(8) Record maintenance conducted on the engine in order to demonstrate that the engine was operated and maintained according to the applicable maintenance plan. [40 CFR 63.6655(e)]

Enforcement of this regulation has not been delegated from EPA to SWCAA and the requirements from this regulation have not been included in the Air Discharge Permit.

7.d. 40 CFR Part 1039 includes requirements for all nonroad engines. In accordance with Appendix A to Subpart A of Part 1074, states are precluded from requiring retrofitting of nonroad engines except that states are permitted to adopt and enforce any such retrofitting requirements identical to California requirements which have been authorized by EPA under section 209 of the Clean Air Act. States may enforce regulations such as hours of usage, daily mass emission limits, and sulfur limits on fuel.

The definition of nonroad engines in 40 CFR 1068 includes any internal combustion engine that is in or on a piece of equipment that is portable or transportable and does not remain, and will not remain, at a location for more than 12 consecutive months (not including seasonal sources). The Terminal 5 Generator Engine and the Unit 316 Compressor Engine are both trailer-mounted units that do not remain at a location for more than 12 consecutive months; therefore, these units are classified as nonroad engines.

7.e. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act (RCW 70A.15) and enforce the same by all appropriate

administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess. This law applies to the facility.

7.f. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an ADP for installation and establishment of an air contaminant source. This law applies to the facility.

7.g. WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" requires BACT for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants, and demonstration of protection of human health and safety.

The facility emits TAPs; therefore, this regulation applies to the facility.

7.h. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, SO_2, NO_x, ozone, and CO in the ambient air, which must not be exceeded. The facility emits PM_{10}, $PM_{2.5}$, SO_x, NO_x, and CO; therefore, certain sections of this regulation apply. The facility does not emit lead; therefore, the lead regulation section does not apply.

7.i. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, SO_2, concealment and masking, and fugitive dust. This regulation applies to the facility.

7.j. SWCAA 400-040(1) "Visible Emissions" requires that emissions of an air contaminant from any emissions unit must not exceed twenty percent opacity for more than three minutes in any one hour at the emission point, or within a reasonable distance of the emission point. This regulation applies to the facility.

7.k. SWCAA 400-040(2) "Fallout" requires that emissions of PM from any source must not be deposited beyond the property under direct control of the owner(s) or operator(s) of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited. This regulation applies to the facility.

7.l. SWCAA 400-040(8) "Fugitive Dust Sources" requires that reasonable precautions be taken to prevent fugitive dust from becoming airborne and to minimize emissions. This regulation applies to the facility.

7.m. SWCAA 400-045 "Permit Applications for Nonroad Engines" requires, with a few exceptions, submittal of a permit application for installation of nonroad engines as defined in 40 CFR 1039. This regulation is applicable to the nonroad engines proposed for use by the permittee.

7.n. SWCAA 400-046 "Application Review Process for Nonroad Engines" requires that a nonroad engine permit be issued by the agency prior to the installation, replacement or alteration of any nonroad engine subject to the requirements of SWCAA 400-045. Each application must demonstrate that the installation will not cause an exceedance of any national or state ambient air quality standard.

7.o. SWCAA 400-109 "Air Discharge Permit Applications" requires that an ADP application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source". Sources wishing to modify existing permit terms may submit an ADP application to request such changes. An ADP must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits. This regulation applies to the facility.

7.p. SWCAA 400-110 "New Source Review" requires that SWCAA issue an ADP in response to an ADP application prior to establishment of the new source, emission unit, or modification.

7.q. SWCAA 400-111 "Requirements for Sources in a Maintenance Plan Area" requires that no approval to construct or alter an air contaminant source will be granted unless it is evidenced that:

(1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
(2) Emissions will be minimized to the extent that the new source will not exceed emission levels or other requirements provided in the maintenance plan;
(3) BACT will be employed for all air contaminants to be emitted by the proposed equipment;
(4) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
(5) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

The facility is located in a maintenance plan area; therefore, this regulation applies to the facility.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate BACT for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determination(s)
None

Previous BACT Determination(s)

8.a. BACT Determination – "Stationary" Diesel Engines. The use of modern diesel-fired engine design meeting the appropriate EPA emission standard where applicable, ultra-low sulfur diesel fuel (≤ 0.0015% sulfur by weight), and limited engine operation has been determined to meet the requirements of BACT for the types and quantities of air contaminants emitted by stationary diesel engines at this facility.

8.b. BACT Determination – Bulk Material Handling Operations. The use of process enclosure and fabric filtration has been determined to meet the requirements of BACT for PM emissions from bulk material handling operations at this facility.

Other Determinations

8.d. Prevention of Significant Deterioration (PSD) Applicability Determination. This permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.

8.e. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 (Title V) permit.

9. AMBIENT IMPACT ANALYSIS

9.a. Criteria Air Pollutant Review. This permitting action is not associated with a change in actual emissions of any criteria air pollutant.

9.b. Toxic Air Pollutant Review.
This permitting action is not associated with a change in actual emissions of any toxic air pollutant.

Conclusions

9.c. Modification of permit conditions, as proposed in ADP/NEP application CL-3267, will not cause the ambient air quality requirements of 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.

9.d. Modification of permit conditions, as proposed in ADP/NEP application CL-3267, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.

9.e. Operation of the stationary and nonroad engines as proposed in ADP/NEP application CL-3267, will not violate emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP/NEP24-3653 in response to ADP/NEP application CL-3267. ADP/NEP24-3653 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a. Supersession of Previous Permits. ADP/NEP 24-3653 supersedes ADP/NEP 15-3167, SUN-163, and SUN-299 in their entirety. Compliance will be determined under this ADP/NEP, not superseded approvals. Existing approval conditions for units not affected by this project have been carried forward unchanged.

10.b. Emission Limits. Annual emission limits were originally established for the emergency generator engines. Because no adverse air quality impacts are anticipated with the infrequent use of these engines for emergency use, the NO_X and CO emission limitations were removed. Visual emissions for both the stationary and nonroad engines were limited to 10% opacity because greater opacity levels would only be expected if an engine were in need of servicing. Note that this opacity limit applies only after the engine has reached normal operating temperature, or after 15 minutes of operation, whichever is sooner. For nonroad engines, SWCAA uses opacity as a surrogate indicator that the engines are in good repair (rather than a tailpipe emission standard otherwise precluded by 40 CFR 1074). For nonroad engines, this restriction is appropriate because if the engine is not maintained in good repair, emissions are likely to greatly exceed the expected emission level and could cause an exceedance of a state or federal ambient air quality standard.

10.c. Operating Limits and Requirements. The only fuel evaluated for use in the Port diesel engines was road-grade diesel; therefore, operation on other, potentially dirtier, fuels was prohibited. As discussed in Section 8, BACT for the diesel engines require the use of ultra-low sulfur ($\leq$ 0.0015% S by weight) diesel. The permit allows the use of "#2 diesel or better." In this case "or better" includes road-grade diesel fuel with a lower sulfur content, biodiesel, and mixtures of biodiesel and road-grade diesel that meet the definition of "diesel" and contain no more than 0.0015% sulfur by weight.

Only the Pump House 3 Well Pump Engine, the Administration Offices Emergency Generator Engine, the Centennial Industrial Building Emergency Fire Pump Engine, and the Pump House 1 Emergency Generator Engine are dedicated emergency engines, therefore these are the only engines subject to the 100 hour per year restriction for maintenance checks and readiness testing from 40 CFR 63 Subpart ZZZZ.

To minimize the impact of emissions on ambient air quality, the exhaust from each engine other than the Pump House 3 Well Pump Engine is required to be exhausted vertically. Any device that obstructs or prevents vertical discharge (such as a traditional rain cap) is prohibited. This is good engineering practice and is required by SWCAA 400-200(1).

10.d. Monitoring and Recordkeeping. Sufficient monitoring and recordkeeping was established to document compliance with the annual emission limits and provide for general requirements (e.g. excess emission reporting, annual emission inventory submission). Excess emissions must be reported as soon as possible in order to qualify for relief from

monetary penalty in accordance with SWCAA 400-107. In addition, deviations from permit conditions must be reported within 30 days of discovery in accordance with the SWCAA 400-107 requirement for excess emissions.

10.e. Reporting. The permit requires reporting of the annual air emissions inventory, and reporting of the data necessary to develop the inventory.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology-based emission standards and control technology determinations must take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA will include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

The diesel engines may exhibit visual emissions over the 10% opacity limit that applies to normal operation upon startup even when in good repair and operated properly. Accordingly, this opacity limit for these engines is not applicable during the startup period defined in the permit. The general opacity standard from SWCAA 400-040 continues to apply during start-up.

11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the approval conditions.

11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate or in addition to those measures required under BACT considerations. Therefore, none were included in the approval conditions.

12. EMISSION MONITORING AND TESTING

Because the stationary engines are permitted only for intermittent use, no add-on control devices are required to comply with the emission limits, and total potential emissions are relatively minor, no initial or periodic emission testing was required of the stationary engines.

13. FACILITY HISTORY

13.a. Previous Permitting Actions. The following past permitting actions have been taken by SWCAA for this facility:

Permit	Application	Date Issued	Description
SUN-299	SUN-299	3-17-2023	Approval for Pump House 1 Emergency Generator Engine
SUN-163	SUN-163	3-2-2018	Approval for Centennial Industrial Building (CIB) Emergency Fire Pump Engine.
15-3167	CL-2039	12-28-2015	Approval for increases in diesel engine operation, bulk material throughput, and baghouse operation.
13-3079	CL-2012	12-30-2013	Approval of Elgin Crosswind J3000 Sweeper/vacuum unit 218 and John Deere 4045HF285 EPA Tier 3 nonroad engine.
SUN-033	SUN-033	1-8-2013	Approval for Administration Offices Emergency Generator Engine.
12-3025	CL-1953	7-11-2012	Approval for stationary and nonroad engines operating at the port. The groundwater remediation system was moved to a separate registration at this time.
08-2798	CL-1820	6-11-2008	Groundwater pump and strip system to address groundwater contamination from chlorinated solvents including trichloroethylene (TCE), tetrachloroethylene (PCE), 1,1 dichloroethene (1,1-DCE), 1,2 dichloroethane (1,2-DCA) and cis-1,2 dichloroethene (cis-1,2-DCE). Two air strippers in parallel treating a total of 2,500 gpm. Each tower measuring 62 feet in height, 10 feet in diameter, containing 46 feet of packing with a maximum air flow rate of 16,000 acfm.
N/A	CL-1018	Withdrawn on 3-15-1995	Approval to handle lead concentrate in cooperation with Asarco. Included use of Dalamatic baghouse for PM control.
92-1451	CL-952	8-10-1992	Installation of an above ground double 2,000 gallon (2,000 gallons gasoline, 2,000 gallons diesel) fuel storage tank.
88-997	CL-686	7-7-1988	Approval to handle, unload, load and store fish meal imports.

Permit	Application	Date Issued	Description
87-909	CL-566, CL-566A	7-17-1987	Modification to 81-625 to handle additional bulk commodities at Terminal 2: bentonite, talc, sugar beet pellets, silica concentrate, manganese concentrate, pencil pitch, bauxite and sulfur. Emissions to be controlled by three baghouses identified as DF-1, DF-2 and DF-3. Addressed violations related to handling of materials other than copper concentration by Anaconda Copper in facilities approved by SWCAA 81-625. Note – Terminal 2 operations were assumed by Hall-Buck Marine in SWCAA 96-1895 issued 7-15-96. Hall-Buck Marine is now Kinder Morgan.
87-877R	N/A	4-21-1987	Order on Consent providing deadlines for submittal of information to support CL-566A and schedule of installation and compliance. Modified the completion date in Order on Consent 87-877.
87-877	N/A	2-4-1987	Order on Consent providing deadlines for submittal of information to support CL-566A and schedule of installation and compliance
86-843		11-13-1986	Emission reduction credits for shutdown of Carborundum Company silicon carbide process facility. Revoked SWCAA 81CL-105R for Carborundum, established ERC of 500 tpy PM (expired on July 8, 1996), 240 tpy VOC (expired on July 1, 1996).
82-670	CL-487	12-2-1982	Installation of bulk handling and storage facilities for transshipping western steam coal.
81-625	CL-467	1-7-1982	Installation of bulk handling and storage facilities for transshipping of copper concentrates by Anaconda Copper.

Approvals in bold have been superseded or are no longer active with issuance of ADP/NEP 24-3653.

13.c. Compliance History. The following compliance issues have been identified for this facility within the past five years:

NOV	Date	Violation
11119	1/8/2024	Exceeding the operating hours and emissions limit for the Terminal 5 Generator Engine. This issue was ultimately addressed in ADP/NEP 24-3653 when this unit was correctly reclassified as a nonroad engine not subject to an operating limit.

14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a. Public Notice for ADP/NEP Application CL-3267. Public notice for ADP/NEP application CL-3267 was published on the SWCAA website for a minimum of fifteen (15) days beginning on March 26, 2024.

14.b. Public/Applicant Comment for ADP/NEP Application CL-3267. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP/NEP application CL-3267. Therefore, no public comment period was provided for this permitting action.

14.c. State Environmental Policy Act. After review of the SEPA Checklist for this project, SWCAA has determined that the project does not have a probable significant impact on the environment and has issued Determination of Non-Significance 24-026. An Environmental Impact Statement is not required under RCW 43.21C.030(2)(c).