



**TECHNICAL SUPPORT DOCUMENT**

**Air Discharge Permit / Nonroad Engine Permit 23-3573  
ADP/NEP Application CO-1067**

**Issued: April 3, 2023**

**Harold Sorensen Trucking  
SWCAA ID - 1189**

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**Abbreviations**

ADP	Air Discharge Permit
AP-42	<u>Compilation of Emission Factors, AP-42, Fifth Edition, Volume 1, Stationary Point and Area Sources</u> – published by the US Environmental Protection Agency
BACT	Best available control technology
Btu	British thermal unit
Btu/gal	Heat content expressed in British thermal units per gallon
CAS #	Chemical Abstracts Service registry number
cfm	Cubic feet per minute
CPM	Condensable particulate matter
CFR	Code of Federal Regulations
CO	Carbon monoxide
dscfm	Dry standard cubic feet per minute
EPA	U.S. Environmental Protection Agency
ft <sup>2</sup>	Square feet
g/hp-hr	Grams per horsepower hour
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
lb/10 <sup>3</sup> gal	Pounds per thousand gallons
lb/hp-hr	Pounds per horsepower hour
lb/hr	Pounds per hour
lb/MMBtu	Pounds per million British thermal units
lb/ton	Pounds per ton
lb/yr	Pounds per year
MMBtu/hr	Millions of British thermal units per hour
NO <sub>x</sub>	Nitrogen oxides
PM	Total particulate matter (includes both filterable and condensable particulate matter as measured by EPA Methods 5 and 202)
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (includes both filterable and condensable particulate matter as measured by EPA Methods 5 and 202)
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (includes both filterable and condensable particulate matter as measured by EPA Methods 5 and 202)
ppm	Parts per million
ppmv	Parts per million by volume
ppmvd	Parts per million by volume, dry
psig	Pounds per square inch, gauge
RACT	Reasonably Available Control Technology
RCW	Revised Code of Washington
SO <sub>2</sub>	Sulfur dioxide
SWCAA	Southwest Clean Air Agency
TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
T-BACT	Best Available Control Technology for toxic air pollutants
tph	Tons per hour
tpy	Tons per year
VMT	Vehicle mile traveled
VOC	Volatile organic compound
WAC	Washington Administrative Code

## 1. FACILITY IDENTIFICATION

Applicant Name: Harold Sorensen Trucking, Inc  
Applicant Address: 112 Plomondon Road, Toledo, WA 98591

Facility Name: Harold Sorensen Trucking  
Facility Address: 460 Kalama River Road, Kalama, WA 98625

SWCAA Identification: 1189

Contact Person: Don Sorensen, Vice President

Primary Process: Aggregate Crushing (including asphalt and concrete)  
SIC/NAICS Code: 1429: Quarrying of non-metallic minerals  
212319: Other crushed and broken stone mining and quarrying

Facility Classification: Natural Minor

## 2. FACILITY DESCRIPTION

Harold Sorensen Trucking, Inc. (Harold Sorensen Trucking) operates a portable rock crushing plant.

## 3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit / Nonroad Engine Permit application number CO-1067 (ADP/NEP application CO-1067) received March 10, 2023. Harold Sorensen Trucking submitted ADP/NEP application CO-1067 requesting approval of the following:

- Replacement of the Powerscreen 1300 Maxtrak cone crusher and associated Scania / DC13 084A engine with exact but newer models.
- There will be no increase in throughput or emissions.

ADP/NEP 23-3573 will supersede ADP/NEP 21-3499 in its entirety.

## 4. PROCESS DESCRIPTION

4.a. Rock Crushing. The proposed rock crushing equipment will be used to crush raw and reclaimed aggregate. Aggregate will be fed into the crushing equipment using front-end loaders and excavators. Crushed aggregate will be transferred via conveyor belt and loader to storage piles. High pressure water sprayers will be used to control fugitive dust emissions at the entrance of each crusher. Other emission points will be watered as necessary to control fugitive dust emissions. Wet suppression systems will be used to control fugitive emissions from associated haul roads and storage piles.

## 5. EQUIPMENT/ACTIVITY IDENTIFICATION

### *New Equipment*

- 5.a. Powerscreen Cone Crusher. This unit is a track-mounted cone crusher. Wet suppression is used to control dust emissions at the inlet of the crusher and, as necessary, at the finished product delivery belt.

Make / Model:	Powerscreen / 1300 Maxtrak (s/n PID13MXTECON99906)
Year Built:	2022
Capacity:	386 tons per hour
NSPS:	40 CFR 60 Subpart OOO

- 5.b. Nonroad Engine – Powerscreen Cone Crusher. This unit is a diesel engine integral to the Powerscreen cone crusher. The engine powers the crusher and the tracks on which it is mounted.

Make / Model:	Scania / DC13 084A (s/n 7378878)
Engine Power Rating:	400 bhp
Fuel:	Diesel
Fuel Usage:	16 gallons per hour
Year Built:	2022
Engine Certification:	EPA Tier 4
Stack Description:	5" diameter at ~14' above grade
NSPS/MACT:	No

### *Existing Equipment*

- 5.c. Powerscreen Jaw Crusher. This unit is a track-mounted jaw crusher. Wet suppression is used to control dust emissions at the inlet of the crusher and, as necessary, at the finished product delivery belt.

Make / Model:	Powerscreen / Premiertrak 600 (s/n PIDPT600VOML12083)
Year Built:	2020
Capacity:	661 tons per hour
NSPS:	40 CFR 60 Subpart OOO

- 5.d. Nonroad Engine – Powerscreen Jaw Crusher. This unit is a diesel engine integral to the Powerscreen jaw crusher. The engine powers the crusher and the tracks on which it is mounted.

Make / Model:	Scania / DC13 084A (s/n 7183389)
Engine Power Rating:	400 bhp
Fuel:	Diesel
Fuel Usage:	16 gallons per hour
Year Built:	2019
Engine Certification:	EPA Tier 4
Stack Description:	5" diameter at ~14' above grade
NSPS/MACT:	No

- 5.e. Powerscreen Aggregate Screen. This unit is a track-mounted 2-deck aggregate screen. Wet suppression is used as necessary to control dust emissions from the screen deck and conveyor transfer points.

Make / Model:	Powerscreen / Chieftain 2100X (s/n PID00124PDGI26326)
Year Built:	2018
Capacity:	661 tons per hour
NSPS:	40 CFR 60 Subpart OOO

- 5.f. Nonroad Engine – Powerscreen Aggregate Screen. This unit is a diesel engine integral to the Powerscreen aggregate screen. The engine powers the screen and the tracks on which it is mounted.

Make / Model:	Caterpillar / C4.4 (s/n JKT05653)
Engine Power Rating:	101 bhp
Fuel:	Diesel
Year Built:	2018
Engine Certification:	EPA Tier 4
Stack Description:	3" diameter at ~8' above grade
NSPS/MACT:	No

- 5.g. Diesel Engine Generator – Isuzu. This unit is a diesel engine driven generator. The engine powers the stacker conveyor. This engine will need to be moved frequently between locations (more than once every 12 months).

Generator Make/Model:	Whisperwatt / DCA-125SSIU4F (s/n 7512507)
Generator Rating:	100 kW
Engine Make / Model:	Isuzu / BR-4HK1X (s/n 7512507)
Engine Power Rating:	101 bhp
Fuel:	Diesel
Fuel Usage:	7.1 gallons per hour
Year Built:	2019
Engine Certification:	EPA Tier 4
Stack Description:	3" diameter at ~8' above grade
NSPS/MACT:	40 CFR 63 Subpart IIII

#### Other Equipment

- One Telestak Aggstak Ts-36-140 stacking conveyor (s/n 10-0221-0417) manufacturer in 2017 with an 800 tons per hour capacity.
- One 36" aggregate conveyor.
- Two 42" aggregate conveyors. One is a Protech Kolberg series 2, the other is unknown.
- PNR foggers.
- Powerscreen spray bar.
- 4000-gallon water truck.

5.h. Equipment/Activity Summary.

<b>ID No.</b>	<b>Equipment/Activity</b>	<b>Control Equipment / Measure</b>
1	Powerscreen 600 Jaw Crusher	High Pressure Wet Suppression
2	Powerscreen 1300 Cone Crusher	High Pressure Wet Suppression
3	Powerscreen 2100x Aggregate Screen	High Pressure Wet Suppression
4	Haul Roads and Conveyors	Wet Suppression
5	Nonroad Engine Powerscreen Jaw Crusher - Scania	Ultra-low Sulfur Diesel, EPA Tier 4 Certification
6	Nonroad Engine Powerscreen Cone Crusher - Scania	Ultra-low Sulfur Diesel, EPA Tier 4 Certification
7	Nonroad Engine Powerscreen Aggregate Screen - Caterpillar	Ultra-low Sulfur Diesel, EPA Tier 4 Certification
8	Diesel Engine Generator – 174 bhp Isuzu	Ultra-low Sulfur Diesel, EPA Tier 4 Certification

**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.

6.a. Rock Crushing and Screening. PM Emissions from rock crushing operations are calculated based on a maximum material throughput of 1,222,000 tpy, a wet suppression control efficiency of 80% and applicable emission factors.

Except for primary crushing, all emission factors for rock crushing are ‘controlled’ factors from the 8/04 version of EPA AP-42, Table 11.19.2-2. Emission factors for tertiary crushing have been used as an upper limit for secondary crushing, as suggested in the 8/04 version of the table. Emission factors for primary crushing are derived from the 1/95 version of EPA AP-42, Table 11.19.2-2 which only provided an ‘uncontrolled’ PM factor for primary crushing. An ‘uncontrolled’ PM<sub>10</sub> factor was calculated using a PM to PM<sub>10</sub> ratio of 2.1:1 as specified in the 1/95 table footnotes. An ‘uncontrolled’ PM<sub>2.5</sub> factor was calculated using a PM to PM<sub>2.5</sub> ratio of 12:1 as cited for tertiary crushing in the 8/04 table.

Activity	Throughput (tpy)	Pollutant	Emission Factor - Controlled (lb/ton)	Turn Points	Emissions (tpy)
Primary crushing	1,222,000	PM	0.00014		0.086
		PM <sub>10</sub>	0.000067		0.041
		PM <sub>2.5</sub>	0.000012		0.007
Secondary crushing	1,222,000	PM	0.0012		0.733
		PM <sub>10</sub>	0.00054		0.330
		PM <sub>2.5</sub>	0.0001		0.061
Tertiary crushing	1,222,000	PM	0.0012		0.733
		PM <sub>10</sub>	0.00054		0.330
		PM <sub>2.5</sub>	0.0001		0.061
Screening	1,222,000	PM	0.0022		1.344
		PM <sub>10</sub>	0.00074		0.452
		PM <sub>2.5</sub>	0.00005		0.031
Loading/conveying	1,222,000	PM	0.00014	10	0.855
		PM <sub>10</sub>	0.000046		0.281
		PM <sub>2.5</sub>	0.000013		0.079
Blasting	1,222,000	PM	0.0015		0.917
		PM <sub>10</sub>	0.00079		0.483
		PM <sub>2.5</sub>	0.000046		0.028
Total		PM			4.668
		PM <sub>10</sub>			1.917
		PM <sub>2.5</sub>			0.268



6.b. Haul Roads. Emissions from haul roads were calculated using default emission calculations from EPA AP-42, Section 13.2.2 (12/03), an average load weight of 20 tons, an average silt content of 4.8%, and an average round trip distance of 0.5 miles. This does not include in-pit activities by nonroad equipment. The use of wet suppression is expected to provide an overall control efficiency of 80% for haul road emissions.

$$E = k \left( \frac{s}{12} \right)^a \left( \frac{w}{3} \right)^b$$

Where: w = average truck weight in tons;  
 s = road surface silt content (%); and  
 The constants k, a, and b are given in the table below:

Constant	PM <sub>2.5</sub>	PM <sub>10</sub>	PM <sub>30</sub> (assumed to represent PM)
k (lb/vehicle mile traveled)	0.23	1.5	4.9
a	0.9	0.9	0.7
b	0.45	0.45	0.45

Maximum haul road emissions are estimated in the table below.

<b>Haul Road Emissions</b>				
Average Truck Weight =	27 tons (assumes empty weight of 17 tons)			
Average Round Trip Distance =	0.50 miles			
Amount of Aggregate per Load =	20.0 tons			
Total Miles Traveled =	30,550 miles			
Assumed Silt Content =	4.8%			
Assumed Control (wet suppression) =	80%			
	Uncontrolled Emission Factor	Controlled Emission Factor	Emissions tpy	Emission Factor Source
Pollutant	lb/mile	lb/mile		
PM	6.94	1.39	21.19	AP-42 13.2.2 (11/06)
PM <sub>10</sub>	1.77	0.35	5.40	AP-42 13.2.2 (11/06)
PM <sub>2.5</sub>	0.27	0.054	0.83	AP-42 13.2.2 (11/06)

- 6.c. Nonroad Engine – Powerscreen Jaw Crusher. Potential emissions from engine operation are calculated based on 2,800 hrs/yr of operation, use of ultra-low sulfur diesel (<0.0015% sulfur by weight), a maximum engine rating of 400 bhp and applicable emission factors. Annual emissions will be calculated from actual hours of operation using the same emission factors.

<b>Nonroad Engine - (Scania DC13 084A)</b>						
Annual Operation =	2,800 hours					
Power Output =	400 horsepower					
Fuel Type =	Ultra-low Sulfur Diesel					
Diesel Density =	7.206 pounds per gallon					
Fuel Sulfur Content =	0.0015 % by weight					
Fuel Consumption Rate =	16 gal/hr (estimated assuming 7,000 Btu/hp-hr)					
Fuel Heat Content =	0.138 MMBtu/gal (for use with GHG factors from 40 CFR 98)					
	Emission					
	Factor		Emissions		Emissions	
Pollutant	lb/bhp*hr	lb/hr	tpy	Emission Factor Source		
NO <sub>x</sub>	0.00036	0.14	0.20	Manufacture's Information		
CO	0.00016	0.064	0.090	Manufacture's Information		
VOC	3.28E-05	0.013	0.018	Manufacture's Information		
SO <sub>x</sub> as SO <sub>2</sub>		0.0035	0.0048	Mass Balance		
PM	3.28E-05	0.013	0.018	Manufacture's Information		
PM <sub>10</sub>	3.28E-05	0.013	0.018	Manufacture's Information		
PM <sub>2.5</sub>	3.28E-05	0.013	0.018	Manufacture's Information		
				CO <sub>2</sub> e	CO <sub>2</sub> e	Emission Factor
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/gallon	tpy, CO <sub>2</sub> e	Source
CO <sub>2</sub>	73.96	1	163.05	22.501	504.03	40 CFR 98
CH <sub>4</sub>	0.003	25	0.165	0.023	0.51	40 CFR 98
N <sub>2</sub> O	0.0006	298	0.394	0.054	1.22	40 CFR 98
Total GHG - CO <sub>2</sub> e			163.6	22.579	505.76	

- 6.d. Nonroad Engine – Powerscreen Cone Crusher (new). Potential emissions from engine operation are calculated based on 2,800 hrs/yr of operation, use of ultra-low sulfur diesel (<0.0015% sulfur by weight), a maximum engine rating of 400 bhp and applicable emission factors. Annual emissions will be calculated from actual hours of operation using the same emission factors.

<b>Nonroad Engine - (Scania DC13 084A)</b>						
Annual Operation =	2,800 hours					
Power Output =	400 horsepower					
Fuel Type =	Ultra-low Sulfur Diesel					
Diesel Density =	7.206 pounds per gallon					
Fuel Sulfur Content =	0.0015 % by weight					
Fuel Consumption Rate =	16 gal/hr (estimated assuming 7,000 Btu/hp-hr)					
Fuel Heat Content =	0.138 MMBtu/gal (for use with GHG factors from 40 CFR 98)					
			Emissions	Emissions		
Pollutant			lb/hr	tpy		Emission Factor Source
NO <sub>x</sub>			0.125	0.18		CARB Certification
CO			0.132	0.18		CARB Certification
VOC			0.053	0.074		CARB Certification
SO <sub>x</sub> as SO <sub>2</sub>			0.0035	0.0048		Mass Balance
PM			0.013	0.018		CARB Certification
PM <sub>10</sub>			0.013	0.018		CARB Certification
PM <sub>2.5</sub>			0.013	0.018		CARB Certification
				CO <sub>2</sub> e	CO <sub>2</sub> e	Emission Factor
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/gallon	tpy, CO <sub>2</sub> e	Source
CO <sub>2</sub>	73.96	1	163.05	22.501	504.03	40 CFR 98
CH <sub>4</sub>	0.003	25	0.165	0.023	0.51	40 CFR 98
N <sub>2</sub> O	0.0006	298	0.394	0.054	1.22	40 CFR 98
Total GHG - CO <sub>2</sub> e			163.6	22.579	505.76	

Emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

- 6.e. Nonroad Engine – Powerscreen Aggregate Screen. Potential emissions from engine operation are calculated based on 2,800 hrs/yr of operation, use of ultra-low sulfur diesel (<0.0015% sulfur by weight), a maximum engine rating of 101 bhp and applicable emission factors. Annual emissions will be calculated from actual hours of operation using the same emission factors.

<b>Nonroad Engine - (Caterpillar C4.4)</b>						
Annual Operation =	2,800 hours					
Power Output =	101 horsepower					
Fuel Type =	Ultra-low Sulfur Diesel					
Diesel Density =	7.206 pounds per gallon					
Fuel Sulfur Content =	0.0015 % by weight					
Fuel Consumption Rate =	6 gal/hr (estimated assuming 7,000 Btu/hp-hr)					
Fuel Heat Content =	0.138 MMBtu/gal (for use with GHG factors from 40 CFR 98)					
			Emissions	Emissions		
Pollutant			lb/hr	tpy		Emission Factor Source
NO <sub>x</sub>			0.046	0.064		Caterpillar
CO			0.0050	0.0070		Caterpillar
VOC			0.0020	0.0028		Caterpillar
SO <sub>x</sub> as SO <sub>2</sub>			0.0013	0.0018		Mass Balance
PM			0.0030	0.0042		Caterpillar
PM <sub>10</sub>			0.0030	0.0042		Caterpillar
PM <sub>2.5</sub>			0.0030	0.0042		Caterpillar
				CO <sub>2</sub> e	CO <sub>2</sub> e	Emission Factor
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/gallon	tpy, CO <sub>2</sub> e	Source
CO <sub>2</sub>	73.96	1	163.05	22.501	189.01	40 CFR 98
CH <sub>4</sub>	0.003	25	0.165	0.023	0.19	40 CFR 98
N <sub>2</sub> O	0.0006	298	0.394	0.054	0.46	40 CFR 98
Total GHG - CO <sub>2</sub> e			163.6	22.579	189.66	

Emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

- 6.f. Diesel Engine Generator – Isuzu. Potential emissions from engine operation are calculated based on 2,800 hrs/yr of operation, use of ultra-low sulfur diesel (<0.0015% sulfur by weight), a maximum engine rating of 174 bhp and applicable emission factors. Annual emissions will be calculated from actual hours of operation using the same emission factors.

<b>Disel Engine - (Isuzu - BR-4HK1X)</b>						
Annual Operation =	2,800 hours					
Power Output =	174 horsepower					
Fuel Type =	Ultra-low Sulfur Diesel					
Diesel Density =	7.206 pounds per gallon					
Fuel Sulfur Content =	0.0015 % by weight					
Fuel Consumption Rate =	7.1 gal/hr (estimated assuming 7,000 Btu/hp-hr)					
Fuel Heat Content =	0.138 MMBtu/gal (for use with GHG factors from 40 CFR 98)					
	Emission					
	Factor	Emissions	Emissions			
Pollutant	lb/bhp*hr	lb/hr	tpy	Emission Factor Source		
NO <sub>x</sub>	0.001	0.11	0.16	Tier 4		
CO	0.0082	1.43	2.00	Tier 4		
VOC	0.00031	0.054	0.076	Tier 4		
SO <sub>x</sub> as SO <sub>2</sub>		0.0015	0.0021	Mass Balance		
PM	2.20E-05	0.004	0.0054	Tier 4		
PM <sub>10</sub>	2.20E-05	0.004	0.0054	Tier 4		
PM <sub>2.5</sub>	2.20E-05	0.004	0.0054	Tier 4		
				CO <sub>2</sub> e	CO <sub>2</sub> e	Emission Factor
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/gallon	tpy, CO <sub>2</sub> e	Source
CO <sub>2</sub>	73.96	1	163.05	22.501	223.66	40 CFR 98
CH <sub>4</sub>	0.003	25	0.165	0.023	0.23	40 CFR 98
N <sub>2</sub> O	0.0006	298	0.394	0.054	0.54	40 CFR 98
Total GHG - CO <sub>2</sub> e			163.6	22.579	224.43	

Emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

- 6.g. Emissions Summary

<b>Air Pollutant</b>	<b>Stationary Source Potential to Emit (tpy)</b>	<b>Nonroad Engine Potential to Emit (tpy)</b>	<b>Project Impact (tpy)</b>
NO <sub>x</sub>	0.16	0.44	0.0
CO	2.00	0.28	0.0
VOC	0.080	0.090	0.0
SO <sub>2</sub>	0.0	0.010	0.0
PM	25.86	0.040	0.0

<b>Air Pollutant</b>	<b>Stationary Source Potential to Emit (tpy)</b>	<b>Nonroad Engine Potential to Emit (tpy)</b>	<b>Project Impact (tpy)</b>
PM <sub>10</sub>	7.32	0.040	0.0
PM <sub>2.5</sub>	1.10	0.040	0.0
TAP	0.0	0.0	0.0
HAP	0.0	0.0	0.0
CO <sub>2</sub> /CO <sub>2e</sub>	224	1,201	0.0

## 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 Chapter 60 (40 CFR 60) Subpart OOO (60.670 et seq.) "Standards of Performance for Nonmetallic Mineral Processing Plants" establishes opacity and particulate matter emission limits for stationary (fixed) plants with capacities greater than 25 tons per hour and portable plants greater than 150 tons per hour that were constructed, reconstructed or modified after August 31, 1983. This regulation is applicable to the new equipment. This regulation is applicable to accessory equipment (e.g., screens or conveyors) whenever they are operated in conjunction with an affected crushing unit.
- 7.b. 40 CFR 60 Subpart IIII (60.4200 et seq.) "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" applies to each compression ignition (CI) internal combustion engine (ICE) that commences construction after July 11, 2005, and is manufactured after April 1, 2006, or that is modified or reconstructed after July 11, 2005. The diesel engines powering the new rock crushing equipment are not subject to this regulation because they are nonroad engines. The diesel engine generator is manufactured after 2006 and subject to this subpart.
- 7.c. 40 CFR 63 Subpart ZZZZ (63.6580 et seq.) "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. The diesel engine power units powering the new rock crushing equipment are not subject to this regulation because they are nonroad engines. The diesel engine generator is subject to this subpart.
- 7.c. 40 CFR 1039 "Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines" 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 1068.30 includes any internal combustion engine in (1)(iii) "That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another..." "An internal combustion engine is not a nonroad engine if:... (iii) the engine otherwise included in Paragraph 1(iii) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source...A location is any single site at a building, structure, facility or installation."

- 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. Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.
- 7.h. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM<sub>10</sub>, PM<sub>2.5</sub>, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.
- 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, sulfur dioxide, concealment and masking, and fugitive dust.
- 7.j. SWCAA 400-040(1) "Visible Emissions" requires that no emission of an air contaminant from any emissions unit shall 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.
- 7.k. SWCAA 400-040(2) "Fallout" requires that no emission of particulate matter from any source shall 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.
- 7.l. SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere.
- 7.m. SWCAA 400-040(4) "Odors" requires that any person who shall cause or allow the generation of any odor from any source, which may unreasonably interfere with any other property owner's use and

enjoyment of the property, use recognized good practices and procedures to reduce these odors to a reasonable minimum.

- 7.n. SWCAA 400-040(6) "Sulfur Dioxide" requires that no person shall emit a gas containing in excess of 1,000 ppm of sulfur dioxide on a dry basis, corrected to 7% O<sub>2</sub> or 12% CO<sub>2</sub> as required by the applicable emission standard for combustion sources.
- 7.o. 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 1068.30. This regulation is applicable to the nonroad engines proposed for use by the permittee.
- 7.p. 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.q. SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met and that no person shall cause or permit the emission of particulate matter from any combustion or incineration unit in excess of 0.23 grams per dry cubic meter (0.1 grains per dry standard cubic foot) of exhaust gas at standard conditions.
- 7.r. SWCAA 400-060 "Emission Standards for General Process Units" prohibits particulate matter emissions from all new and existing process units in excess of 0.1 grains per dry standard cubic foot of exhaust gas.
- 7.s. SWCAA 400-109 "Air Discharge Permit Applications" requires that an Air Discharge Permit 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 Air Discharge Permit application to request such changes. An Air Discharge Permit 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.
- 7.t. SWCAA 400-110 "New Source Review" requires that SWCAA issue an Air Discharge Permit in response to an Air Discharge Permit application prior to establishment of the new source, emission unit, or modification.
- 7.u. SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source shall 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) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;
  - (3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
  - (4) 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.



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

The proposed equipment and control systems incorporate Best Available Control Technology (BACT) for the types and amounts of air contaminants emitted by the processes, as described below:

- 8.a. BACT Determination – Rock Crushing/Screening. The use of high-pressure wet suppression systems, including spray or fog nozzles operating at a minimum pressure of 80 psig and a visual emission limit of 0% opacity, has been determined to meet the requirements of BACT for the proposed crushing and screening equipment. Because there are other wet suppression systems (e.g., sonic fogging systems) that utilize a lower water pressure but provide equivalent or superior levels of emission control, the permit will allow for wet suppression systems reviewed and approved by SWCAA that provide equivalent or superior control of particulate matter emissions.
- 8.b. BACT Determination – Fugitive Dust Emissions. The use of low-pressure wet suppression systems has been determined to meet the requirements of BACT for fugitive dust emissions from storage piles, material transfer points, and haul roads at this facility. For sources other than roadways, these controls must maintain visual emissions at 0% opacity as measured by SWCAA Method 9. For haul roads, these controls must maintain visual emissions at or below 10% opacity as measured by SWCAA Method 9.
- 8.c. BACT Determination – Portable Diesel Engine. The use of modern engine design (EPA Tier certified), limited hours of operation ( $\leq 2,800$  hrs/yr), and ultra-low sulfur diesel fuel ( $\leq 15$  ppmw) has been determined to meet the requirements of BACT for the types and quantities of air contaminants emitted from the proposed portable diesel engine driven generator.
- 8.d. Nonroad Engine Tier Certification. The nonroad engines affected by this permitting action comply with applicable EPA certification requirements, but are not subject to BACT.

### *Other Determinations*

- 8.e. 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.f. 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. Emissions of NO<sub>x</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>, VOC (as a precursor to O<sub>3</sub>), and SO<sub>2</sub> are emitted at levels where no adverse ambient air quality impact is anticipated. There are no emissions increases due to this permitting action.
- 9.b. Toxic Air Pollutant Review. This facility does not emit quantifiable amounts of TAPs. Toxic air pollutant impacts are presumed to be below regulatory significance.

### Conclusions

- 9.c. Operation of new rock crushing equipment, as proposed in ADP/NEP application CO-1067, will not cause a violation of the ambient air quality standards established by 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards."
- 9.d. Operation of new rock crushing equipment, as proposed in ADP/NEP application CO-1067, will not cause a violation of the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" (in effect August 21, 1998) or WAC 173-476 "Ambient Air Quality Standards."
- 9.e. Operation of new rock crushing equipment, as proposed in ADP/NEP application CO-1067, will not violate emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

### 10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP/NEP 23-3573 in response to ADP/NEP application CO-1067. ADP/NEP 23-3573 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 23-3573 supersedes ADP 21-3499 in its entirety.
- 10.b. Emission Limits. Annual emission limitations for the equipment addressed in this permitting action were established equal to the potential to emit identified in Section 6. Based on the information provided in the application, emission limits based on the throughput provided will not constrain operations. As discussed in Section 8, these emission limits meet the requirements of BACT. The nonroad engine that drives the crusher is not subject to BACT, and operation of the engine will not result in a violation of the ambient air quality standards when operated in accordance with the permit, therefore no emission limits were established for the nonroad engine.

Visible emissions from the nonroad engine were limited to 5% opacity. Visible emissions should not exceed this level if the engine is operating properly. For the nonroad engines, SWCAA uses this as a surrogate indicator that the engine is in good repair (rather than a tailpipe emission standard otherwise precluded by 40 CFR 1074). For the nonroad engine, 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. Operational Limits and Requirements. Most of the requirements in this section are related to the use of wet suppression systems for the control of fugitive dust.

The permit allows the use of "#2 diesel or better" by the crusher engine. 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.

- 10.d. Monitoring and Recordkeeping Requirements. Sufficient monitoring and recordkeeping were established to document compliance with the annual emission limits and provide for general requirements (e.g., excess emission reporting, annual emission inventory submission).
- 10.e. Emission Monitoring and Testing Requirements. See Section 12.
- 10.f. Reporting Requirements. The permit requires reporting of the annual air emissions inventory, and reporting of the data necessary to develop the inventory. Excess emissions must be reported immediately in order to qualify for relief from monetary penalty in accordance with SWCAA 400-107. In addition, prompt reporting was required because it allows for accurate investigation into the cause of the event and prevention of similar future incidents.

## **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 shall 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 shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

Diesel Engines. Visible emissions from diesel engines associated with rock crushing operations may exhibit excess opacity upon startup even when in proper working order. Accordingly, the visual emissions limits listed in the permit for these units are not applicable during the startup period defined in the permit. The general opacity standard from SWCAA 400-040 of 20% continues to apply during startup and shutdown.

- 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 permit requirements.
- 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 permit requirements.

## **12. EMISSION MONITORING AND TESTING**

- 12.a. Emission Testing Requirements – Rock Crushing Equipment. Affected rock crushers and associated screening equipment and belt conveyors are required to perform one-time opacity observations as required by 40 CFR 60 Subpart OOO.

### 13. FACILITY HISTORY

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

<u>Date</u>	<u>Application Number</u>	<u>ADP Number</u>	<u>Purpose</u>
12/15/2021	CO-1045	21-3499	Approval to install rock crushing equipment and a generator engine, to increase throughput, and to remove equipment no longer in service. Superseded by ADP 23-3573.
4/30/2019	CO-1010	19-3336	Approval to install rock crushing equipment. Superseded ADP 00-2289, SUN 044, SUN 045, SUN 114 and SUN 115 in their entirety. Superseded by ADP 21-3499.
4/14/2016	--	SUN 115	Small unit notification for a Terex Cedarapids model 54CT-D3748 cone crusher (54" diameter; s/n 2143-02). Unit removed from service in 2019.
4/14/2016	--	SUN 114	Small unit notification for a KPI-JCI model 6203LPPM 3-deck screen (6' x 20'; s/n P141800). Unit removed from service in 2019.
6/19/2013	--	SUN 045	Small unit notification for a Minyu / CEC 510 Cone Crusher. Unit removed from service in 2015.
6/19/2013	--	SUN 044	Small unit notification for a Terex Cedarapids cone crusher. This unit replaced the CEC / Minyu 400 cone crusher approved under ADP 00-2289. Unit removed from service in 2015.
7/28/2000	CO-652	ADP 00-2289	Approval to install and operate a portable rock crushing plant at Barnes Drive Quarry, Castle Rock. All approved equipment removed from service by 2019.

13.b. Compliance Status. A search of source records on file at SWCAA did not identify any outstanding compliance issues at this facility.

### 14. PUBLIC INVOLMENT OPPORTUNITY

14.a. Public Notice for ADP/NEP Application CO-1067. Public notice for ADP/NEP application CO-1067 was published on the SWCAA internet website for a minimum of (15) days beginning on March 15, 2023.

14.b. Public/Applicant Comment for ADP/NEP Application CO-1067. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public regarding this ADP/NEP application. Therefore, no public comment period was provided for this permitting action.

14.c. State Environmental Policy Act. SWCAA has determined that this project is exempt from SEPA requirements pursuant to WAC 197-11-800(3) and has issued Determination of SEPA Exemption 23-

015. This project only involves repair, remodeling, maintenance, or minor alteration of existing structures, equipment or facilities, and will not involve material expansions or changes in use. There is no physical change proposed in the project that would have an adverse impact on the environment beyond that which has already been evaluated under previous SEPA reviews.