

**PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT NO. 0831-01-CT
Application for Initial Permit No. 0831-01**

Company: Powerscreen of California
Mailing Address: 10 Case Court
American Canyon, California 94503

Facility: 275 TPH Powerscreen Trackpactor , Model 260SR Crusher

Location: Various Temporary Sites, State of Hawaii

Initial Location: 95-109 Waikalani Drive, Mililani, Hawaii 96879

SIC Code: 1442 (Stone Crushing and Screening)

Responsible Official: Mr. Jay Wessell
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PROPOSED PROJECT

Powerscreen of California has submitted an initial application to operate a 275 TPH Powerscreen, Trakpactor Model 260 SR Impact Crusher. The Crusher is to be used to screen and crush stockpiles of soil, demolition sand and aggregates consisting of basalt rock or concrete.

The 275 TPH Powerscreen Crusher plant with a serial No. to be determined is a horizontal shaft impactor. It is using a self-cleaning permanent magnet to remove metallic particles and spray bars with three spray heads installed above the main conveyor belt for particulate control.

The crusher is track mounted, powered by a Tier 4F, 202 kWh/275 hp Scania Diesel Engine model DC 9. The diesel engine is exempt since it is non-road and propels the crusher.

AIR POLLUTION CONTROLS

The crusher features a built-in dust suppression system consisting of spray bars with atomizer nozzles. Water trucks/water sprays will be used as necessary to minimize fugitive dust from plant operations, material transfer points, stockpiles, and plant roads.

Equipment Description

Unit No.	Description	Manufacture	Model	Serial No.	Mnft Date	Ref Size	Unit	Gal/Hr	HP	MM Btu
1	Impact Crusher	Powerscreen	260SR	tbd	2015	275.00	TPH	-	-	-
exempt	Diesel	Scania	DC9	n/a	2015	202.00	kW	16.968	275	-

APPLICABLE REQUIREMENTS

Hawaii Administrative Rules (HAR)

Title 11 Chapter 59, Ambient Air Quality Standards

Title 11 Chapter 60.1, Air Pollution Control

Subchapter 1 General Requirements

Subchapter 2 General Prohibitions

11-60.1-31 Applicability

11-60.1-32 Visible Emissions

11-60.1-33 Fugitive Dust

Subchapter 5, Covered Sources

Subchapter 6, Fees for Covered Sources, Noncovered Sources, and Agricultural Burning

11-60.1-111 Definitions

11-60.1-112 General fee provisions for Covered sources

11-60.1-113 Application fees for Covered sources

11-60.1-114 Annual fees for Covered sources

11-60.1-115 Basis of Annual Fees for Covered Sources

Subchapter 8, Standards of Performance for Stationary Sources

11-60.1-161, New Source Performance Standards

Subchapter 10, Field Citations

Air Emissions Reporting Requirements (AERR), 40 CFR Part 51

Subpart A - AERR is not applicable because emissions from the facility do not exceed AERR triggering levels.

Best Available Control Technology (BACT) – This source is not subject to BACT analysis because potential to emit emission for PM, PM₁₀, and PM_{2.5} does not exceed the BACT trigger levels as defined in HAR, Section 11-60.1-1.

Prevention of Significant Deterioration (PSD) - 40 CFR Part 52, §52.21

This source is not subject to PSD requirements because it is not a major stationary source as defined in 40 CFR §52.21 and HAR Title 11, Chapter 60.1, Subchapter 7.

Standard of Performance for New Stationary Sources (NSPS), 40 CFR Part 60

Subpart 000 – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the crushing plant because the maximum capacity of the crusher is greater than 150 tons/hour, and plant was manufactured after August 31, 1983 (§60.671).

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (ICE) is not applicable to this diesel engine, because it is considered nonroad engine as defined in 40 CFR §1068.30. Subpart IIII applies to stationary internal combustion engines that are not nonroad engines.

Total Facility Emissions and Trigger Levels (TPY) for Powerscreen 275 TPH Impact Crusher						
Pollutant	Crusher ^a	BACT Significant Levels	AERR Thresholds	DOH Levels	Wind Erosion	Vehicle Travel on Unpaved Road
CO	0.00	100	1000	250	0	0
NO _x	0.00	40	100	25	0	0
SO ₂	0.00	40	100	25	0	0
PM-2.5	0.28	10	100		0.00	0.31
PM-10	3.44	15	100	25	0.02	3.05
PM	5.04	25		25	0.04	12.48
VOC	0.00	40	100	25	0	0
HAPs	0.00		.5 (Actual Lead)	5	0	0

^aCrusher emissions without Wind Erosion and Unpaved Road Travels

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61

This source is not subject to NESHAP as there are no standards in 40 CFR Part 61 applicable to this facility.

NESHAPs for Source Categories, 40 CFR Part 63 (section 112 of the Act)

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) is not applicable because the diesel engine is considered a nonroad engine as defined in 40 CFR §1068.30. Subpart ZZZZ applies to stationary internal combustion engines that are not nonroad engines. The engine is also exempt from Air permitting.

Compliance Assurance Monitoring (CAM) - 40 CFR Part 64

This plant is not subject to CAM because the facility is not a major source. The purpose of CAM is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 CFR Part 64, for CAM to be applicable, the emissions unit must:

- (1) Be located at a major source;
- (2) Be subject to an emissions limit or standard;

- (3) Use a control device to achieve compliance;
- (4) Have potential pre-control emissions that are 100% of the major source level; and
- (5) Not otherwise be exempt from CAM.

DOH In-house Annual Emissions Reporting

The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding in-house reporting levels and for all covered sources. Annual emissions reporting is required since it is a covered source even though emissions do not exceed in-house reporting levels.

Synthetic Minor Source

A synthetic minor source is a facility that is potentially major, as defined in HAR, §11-60.1-1, but is made non-major through federally enforceable permit conditions. This facility is not a synthetic minor source because potential emissions do not exceed major source thresholds (100 TPY) when the facility is operated without limitations for 8,760 hours/year.

EXEMPTIONS

The 275 hp diesel engine powering the 275 TPH crusher is exempt in accordance with HAR §11-60.1-62(d)(21) because the engine is used to propel the crusher.

ALTERNATIVE OPERATING SCENARIOS

None proposed. The engine on the crusher is exempt since it propels the crusher.

PROJECT EMISSIONS

275 TPH Crushing Plants

The maximum capacity of the crusher and screen were used to calculate emissions. Water sprays will be used to control PM emissions. Emissions were based on emission factors from AP-42 Section 11.19.2 (8/04) – Crushed Stone Processing and Pulverized Mineral Processing.

Project Emissions 275 TPH Crusher	
Pollutant	Crusher Emissions (TPY) [8760 hr/yr]
PM	5.04
PM-10	3.44
PM-2.5	0.28

Wind Erosion Emissions

Storage pile emissions were based on emission factors from AP-42 (4th Edition) Table 8.19.1- Uncontrolled Particulate Emission Factors for Sand and Gravel Processing Plants.

Wind Erosion from Storage Piles

AP-42 Section 8.19.1 (4th ed.) - Stone Processing

$$\text{Emissions (ton/yr)} = \text{Area of Storage Piles (acre)} \times \text{\# Days Storage Piles Exist (day/year)} \\ \times \text{Emission Factor (lb/acre/day)} \times \text{ton/2000 lb}$$

	Value	Unit	Notes
Area of Storage Piles	0.2	acre	
\# Days Storage Piles Exist	365	day/year	

Pollutant	EF (lb/ton)	Control Efficiency	Emissions (TPY)	
			8,760 hr/yr	8,760 hr/yr
PM	3.5	70%	0.04	0.04
PM-10	1.7	70%	0.02	0.02
PM-2.5	0.2625	70%	0.00	0.00

notes:

1. EFs from AP-42 Table 8.19.1-1; PM-2.5 = 7.5% of PM (AP-42 Sec. 13.2.5 (11/06))
2. 70% control efficiency was assumed for water suppression (AP-42 Sec. 11.19.1.2 (11/95))

Vehicle Travel on Unpaved Roads

AP-42 Section 13.2.2 (11/06) - Unpaved Roads

$$\text{Emissions (lb/hr)} = \text{Vehicle Miles Traveled (VMT/hr)} \times \text{Emission Factor (lb/VMT)}$$

Vehicle Miles Traveled (VMT)

	Value	Unit	Notes
Hour Limit	8760	hour/year	
Processing Capacity	275	ton/hour	275 TPH Crusher
Vehicle Load Capacity	21	ton	
Travel Distance Roundtrip	0.25	mile	
Average VMT/hour	3.27	VMT/hour	Processing Capacity / Load x Distance
Total VMT	28679	VMT/year	VMT/hour x Hour Limit

Emission Factors

For vehicles traveling on unpaved surfaces at industrial sites:

$$EF = k(s/12)^a(W/3)^b$$

- where:
- EF = size-specific emission factor (lb/VMT)
 - s = surface material silt content (%)
 - W = mean vehicle weight (tons)
 - k,a,b = empirical constants

$$EF_{ext} = EF[(365 - \text{days})/365]$$

where: E_{ext} = annual size-specific emission factor extrapolated for natural mitigation (lb/VMT)
 P = number of days in a year with at least 0.01 in of precipitation

	Value			Unit	Notes
	PM-2.5	PM-10	PM		
k	0.15	1.5	4.9	lb/VMT	AP-42 Table 13.2.2-2
a	0.9	0.9	0.7	-	AP-42 Table 13.2.2-2
b	0.45	0.45	0.45	-	AP-42 Table 13.2.2-2
s	3.9			%	AP-42 Sec. 13.2.2 - Related Information
W	26.5			ton	avg tare weight=16 ton, gross weight=37 ton
P	187			day	Pohakuloa 107 Station (www.wrcc.dri.edu)

Pollutant	EF (lb/VMT)	EF _{ext} (lb/VMT)	Control Efficiency	Emissions (lb/hr)	Emissions (TPY)	
					8,760 hr/yr	8,760 hr/yr
PM	5.95	2.90	70%	2.85	12.5	12.48
PM-10	1.45	0.71	70%	0.70	3.1	3.05
PM-2.5	0.15	0.07	70%	0.07	0.3	0.31

notes:

1. 70% control efficiency was assumed for water suppression (AP-42 Sec. 11.19.1.2 (11/95))

Total facility emissions:

Pollutant	Crusher	Wind Erosion	Vehicle Travel on Unpaved Road
CO	0	0	0
NO _x	0	0	0
SO ₂	0	0	0
PM-2.5	0.28	0.00	0.31
PM-10	3.44	0.02	3.05
PM	5.04	0.04	12.48
VOC	0	0	0
HAPs	0	0	0

AIR QUALITY ASSESSMENT

An ambient air quality impact analysis (AAQIA) is not required for the proposed crusher plant because emissions are fugitive in nature. The Department of Health air modeling guidance generally does not require an ambient air quality impact analysis for fugitive emissions.

SIGNIFICANT PERMIT CONDITIONS

1. The crusher, and associated conveyors are subject Title 40 Code of Federal Regulations (CFR) Part 60-Standards of Performance for New Stationary Sources, Subpart A and Subpart OOO.
2. Fugitive Emission Limits:
 - a. The permittee shall not cause to be discharged into the atmosphere from any crusher, fugitive emissions which exhibit greater than twelve (12) percent opacity.
 - b. The permittee shall not cause to be discharged into the atmosphere from any transfer point on the belt conveyors, screening operation, or from any other affected facility, fugitive emissions which exhibit greater than seven (7) percent opacity.
3. The Stone processing plant is equipped with water spray system to control fugitive emissions from crushing and screening operations. The water spray system shall be utilized as necessary while the plant is in operation.

ALTERNATIVE OPERATING SCENARIOS

None proposed by permittee.

CONCLUSION

Powerscreen has submitted an application for a temporary covered source permit to operate without limitations. Powerscreen is proposing to operate a 275 TPH Trakpactor Impact Crusher powered by a Scania 275 hp diesel engine. The diesel engine is not included in the permit since it propels the crusher, and is exempt pursuant to HAR §11-60.1-62(d), which exempts internal combustion engines propelling mobile sources. Potential emissions were based on the maximum rated capacities of the equipment.

Recommend issuance of the covered source permit subject to the incorporation of the significant permit conditions.

Jensen I. Kennedy
November 12, 2015