

**PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT NO. 0242-01-CT
Application for Minor Modification No. 0242-15**

Company: Goodfellow Brothers, Inc.

Mailing Address: P.O. Box 220
Kihei, Hawaii 96753

Facility: 780 TPH Stone Processing Plant with 1 MW/1.36 MW Diesel Engine Generator and 400 TPH Mobile Stone Processing Plant with Integral Diesel Engines

Location: Various Temporary Sites, State of Hawaii

Initial Location: Kihei and Kona Baseyards

SIC Code: 1429 (Crushed and Broken Stone, Not Elsewhere Classified)

Responsible Official: Ms. Amy Sands
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PROPOSED PROJECT

Goodfellow Brothers, Inc. (GBI) owns and operates a variety of crushers, screens, and conveyors for stone processing activities. The equipment is used to crush basalt and other materials for construction purposes. Materials are batch-dropped into a primary crusher, forwarded via conveyors to either a stockpile or to a secondary and possibly a tertiary crusher. The stockpiles either remain throughout the duration of the project or are moved by front-end loaders.

The equipment is deployed to various locations and may be erected in several different configurations depending on the project requirements. The current permit covers most of GBI's equipment inventory of crushers, screen trailers, and diesel engine generators. The permitted inventory of equipment also includes crushers with integrated diesel engines. To allow operational flexibility, the permit lists the maximum quantity and type of equipment allowed at a site, which allows GBI to use any or all of the equipment listed. The maximum number of temporary stone processing plant locations GBI is permitted to operate simultaneously within the State of Hawaii is twenty-five (25).

Proposed Modification

GBI has submitted an application for minor modification to add two 400 TPH mobile jaw crushers with 300 hp diesel engines (equipment nos. K-228 and K-229) to its list of stone processing equipment. The existing permit limits the number of specific types of equipment allowed at each temporary site and limits the operating hours at each site. The exiting permit allows two 400 TPH or smaller mobile jaw crushers to operate at each "Mobile Stone Processing Plant" site. There will be no increase in emissions due to the proposed 400 TPH mobile jaw crushers.

The proposed modification meets the criteria for minor modification as defined in HAR §11-60.1-81. There are no increases in emissions due to the proposed 400 TPH mobile jaw crushers. There are also no changes to existing monitoring, reporting, or recordkeeping requirements.

The following equipment will be removed from the permit:

1. 264 TPH Screen, Cedarapids 4'x12', serial no. 1426: equipment no. K-23;
2. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT105, serial no. 72742, with 300 hp Caterpillar diesel engine, model no. C-9 DITA, serial no. CLJ07165, with a minimum stack height of 11.9 feet: equipment no. K-148;
3. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT105, serial no. 72816, with 300 hp Caterpillar diesel engine, model no. C-9 DITA, serial no. CLJ07851, with a minimum stack height of 9.9 feet: equipment no. K-149;
4. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT105, serial no. 73599, with 300 hp Caterpillar diesel engine, model no. C-9 DITA, serial no. MBD02002, with a minimum stack height of 16.8 feet: equipment no. K-183;

The radial stackers individually listed in the permit will be removed and will be listed under various conveyors.

The non-mobile/mobile plant will be limited to 1,600 hours at any one location in any rolling twelve-month (12-month) period. The mobile plant will be limited to 1,800 hours at any one (1) location in any rolling twelve-month (12-month) period. The operating hour limitations are needed to limit NO_x emissions below major source thresholds.

There are no other proposed changes to existing equipment in the design or operation of the facility.

EQUIPMENT DESCRIPTION

- a. 780 TPH Jaw Crusher, Nordberg model no. C140B, serial no. 34395: equipment no. K-76;
- b. 780 TPH Jaw Crusher, Nordberg model no. C140, serial no. 34997: equipment no. K-185;
- c. 700 TPH Cone Crusher, Nordberg model no. HP400, serial no. 123622: equipment no. K-153;
- d. 700 TPH Cone Crusher, Raptor model no. XL400, serial no. XL400-0019, with 440 TPH Screen, JCI model no. 6202-32LP, serial no. 5072014: equipment no. K-182;

PROPOSED

- e. 500 TPH Cone Crusher, Omnicone model no. 1560, serial no. 1560-253, with 440 TPH Screen, JCI model no. 6202-32LP, serial no. 122928: equipment no. K-26;
- f. 500 TPH Cone Crusher, Omnicone model no. 1560, serial no. 304-300034: equipment no. K-130;
- g. 500 TPH Cone Crusher, Omnicone model no. 1560, serial no. 1560-175-SA, with 440 TPH Screen, JCI model no. 6202-32LP, serial no. 5072007: equipment no. K-187;
- h. 400 TPH Screen Trailer, JCI model no. 6203-32LP, serial no. P060378: equipment no. K-165;
- i. 1 MW Diesel Engine Generator, Gen Set model no. 3512, serial no. 24Z08717, with a minimum stack height of 17 feet: equipment no. LP-130;
- j. 1 MW Diesel Engine Generator, Gen Set model no. 3512, serial no. 24Z08458, with a minimum stack height of 17 feet: equipment no. LP-121;
- k. 1.36 MW Diesel Engine Generator, Caterpillar model no. XQ1500, serial no. BNR00315, with Caterpillar diesel engine, model no. 3512, serial no. 1GZ-02594, manufactured on April 29, 2005, with a stack height of 15.9 feet: equipment no. LP-140;
- l. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT105, serial no. 72839, with 300 hp Caterpillar diesel engine, model no. C-9 DITA, serial no. CLJ07329: equipment no. K-150;
- m. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT105, serial no. 73316, with 300 hp Caterpillar diesel engine, model no. C-9 DITA, serial no. MBD00692: equipment no. K-164;
- n. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT106, serial no. 77293, with 300 hp Caterpillar diesel engine, model no. C-9.3, serial no. TBD: equipment no. K-228;
- o. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT106, serial no. TBD, with 300 hp Caterpillar diesel engine, model no. C-9.3, serial no. TBD: equipment no. K-229;
- p. 450 TPH Mobile Cone Crusher, Nordberg model no. LT300HP, serial no. 73549, with 525 hp Caterpillar diesel engine, model no. C-15 DITA, serial no. JRE02480: equipment no. K-184;
- q. 450 TPH Mobile Cone Crusher, Nordberg model no. LT300HP, serial no. 74093, with 525 hp Caterpillar diesel engine, model no. C-15 DITA, serial no. JRE05064: equipment no. K-204;
- r. 661 TPH Mobile Screen, Powerscreen model no. Chieftain 2100, serial no. 12401468, with exempt 100 hp Deutz diesel engine model no. BF4M2012, serial no. 10167853: equipment no. K-167;
- s. 661 TPH Mobile Screen, Powerscreen model no. Chieftain 2100, serial no. 12402701, with exempt 100 hp Deutz diesel engine model no. BF4M2012, serial no. 10275425: equipment no. K-176;
- t. 881 TPH Mobile Screen, Powerscreen model no. Warrior 2400, serial no. PID00126CDGB11897, with 225 hp Caterpillar diesel engine, model no. C6.6, serial no. 66614805: equipment no. K-210;
- u. 881 TPH Mobile Screen, Powerscreen model no. Warrior 2400, serial no. PID00126ADGC34511, with 202 hp Caterpillar diesel engine, model no. C7.1, serial no. 77000465: equipment no. K-213;
- v. Various conveyors; and
- w. Various water sprays.

AIR POLLUTION CONTROLS

The crushing and screening plants are equipped with water spray systems to control fugitive dust. Water trucks/water sprays will be used as necessary to minimize fugitive dust from plant operations, material transfer points, stockpiles, and plant roads.

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

11-60.1-38, Sulfur Oxides from Fuel Combustion

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 9, Hazardous Air Pollutant Sources

Subchapter 10, Field Citations

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

Subpart 000 – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the stone processing plants because the maximum capacities of the plants are greater than 150 tons/hour, and the plants were manufactured after August 31, 1983.

The 881 TPH Mobile Screens (equipment nos. K-210 and K-213), 440 TPH Screen (equipment no. K-26), and proposed 400 TPH Mobile Jaw Crushers (equipment nos. K-228 and K-229) were manufactured after April 22, 2008. Equipment that commence construction, modification, or reconstruction on or after April 22, 2008, have more stringent fugitive emission opacity limits. The remaining permitted equipment were all manufactured prior to April 22, 2008.

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

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

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

NESHAPs for Source Categories (Maximum Achievable Control Technology (MACT)), 40 CFR Part 63

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

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.

Compliance Assurance Monitoring (CAM), 40 CFR 64

This source 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.

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

AERR is not applicable because potential emissions from the facility do not exceed AERR thresholds.

CAB In-house Annual Emissions Reporting

The Clean Air Branch (CAB) 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 will be required because this facility is a covered source.

Best Available Control Technology (BACT)

This source is not subject to BACT analysis because there is no net increase in potential emissions due to the modification. BACT analysis is required for new sources or modifications to sources that have the potential to emit or increase emissions above significant levels considering any limitations as defined in HAR, §11-60.1-1.

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 a synthetic minor source because potential NO_x emissions exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

INSIGNIFICANT ACTIVITIES / EXEMPTIONS

The diesel engines powering the 661 TPH mobile screens and radial stackers are considered insignificant activities in accordance with HAR §11-60.1-82(f)(2) because the heat input capacities of each diesel engine is less than one (1) MMBtu/hr.

ALTERNATIVE OPERATING SCENARIOS

Diesel Engines and Diesel Engine Generators

The permittee may replace each diesel engine and diesel engine generator with a temporary replacement unit of similar size with equal or lesser emissions if any repair reasonably warrants the removal of the diesel engine or diesel engine generator from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

PROJECT EMISSIONS

There will be no increase in emissions due to the two (2) proposed 400 TPH mobile jaw crushers with 300 hp diesel engines. The existing permit limits the number of specific types of equipment allowed at each temporary site and limits the operating hours at each site. The existing permit allows two (2) 400 TPH mobile jaw crushers with 300 hp diesel engines to operate at each “Mobile Stone Processing Plant” site.

Total facility emissions are summarized in the tables below, referenced from review no. 0242-14.

Non-Mobile/Mobile Stone Processing Plant:

Total Facility Emissions and Trigger Levels (TPY)							
Pollutant	Emissions w/ 1 MW DEG (1,600 / 8,760 hr/yr)		Emissions w/ 1.36MW DEG (1,600 / 8,760 hr/yr)		BACT Significant Levels	AERR Thresholds	DOH Levels
	CO	9.4	51.3	3.8			
NO _x	36.2	198.0	34.1	186.7	40	100	25
SO ₂	6.8	37.0	7.6	41.4	40	100	25
PM	11.8	64.4	11.4	62.3	25	-	25
PM-10	4.9	27.0	4.7	25.5	15	100	25
PM-2.5	1.7	9.4	1.4	7.9	10	100	-
VOC	0.9	5.1	1.4	7.5	40	100	25
HAPs	0.03	0.16	0.03	0.18	-	-	5

Mobile Stone Processing Plant

Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Emissions (With Limits)	Emissions (No Limits)	BACT Significant Levels	AERR Thresholds	DOH Levels
CO	4.7	23.0	100	1000	250
NO _x	22.7	110.3	40	100	25
SO ₂	6.7	32.8	40	100	25
PM	10.8	52.7	25	-	25
PM-10	5.0	24.4	15	100	25
PM-2.5	2.2	10.6	10	100	-
VOC	0.5	2.5	40	100	25
HAPs	0.05	0.25	-	-	5

Greenhouse Gas (GHG) Emissions

Non-Mobile/Mobile Stone Processing Plant with 1.36 MW diesel engine generator:

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO ₂ e Based Emissions (TPY)
Carbon Dioxide (CO ₂)	1	2311.3	2311.3
Methane (CH ₄)	25	0.10	2.5
Nitrous Oxide (N ₂ O)	298	0.02	5.9
Total Emissions:			2320

Mobile Stone Processing Plant:

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO ₂ e Based Emissions (TPY)
Carbon Dioxide (CO ₂)	1	2175.9	2175.9
Methane (CH ₄)	25	0.09	2.2
Nitrous Oxide (N ₂ O)	298	0.02	5.3
Total Emissions:			2183

AIR QUALITY ASSESSMENT

An ambient air quality impact analysis (AAQIA) is generally required for new or modified sources to demonstrate compliance with State and National ambient air quality standards. On a case-by-case basis the CAB may not require an AAQIA for temporary sources provided the following:

1. The anticipated length of stay at any one location is less than one year;
2. The temporary source is not a major source or part of a major source; and
3. The location of the temporary source is generally in a remote area where nuisance impacts are not expected.

An AAQIA will not be required for the proposed diesel engines since the facility meets the above conditions. The CAB may at any time perform or require the applicant to perform an AAQIA for this facility.

SIGNIFICANT PERMIT CONDITIONS

There are no new significant permit conditions for this minor modification.

CONCLUSION

GBI has submitted an application for minor modification to add two 400 TPH mobile jaw crushers to its list of stone processing equipment. There will be no increase in emissions. Recommend issuance of the covered source permit subject to the incorporation of the significant permit conditions and forty five-day (45-day) Environmental Protection Agency review period.

Mark Saewong
September 18, 2014