

PROPOSED

PERMIT APPLICATION REVIEW TEMPORARY COVERED SOURCE PERMIT NO. 0771-01-CT Application for Initial Permit No. 0771-01

Company: REK Associates, LLC

Mailing Address: 25201 Larks Terrace
South Riding, Virginia 20152

Facility: 357 TPH Portable Stone Processing Plant

Location: Various Temporary Sites, State of Hawaii

Initial Location: Kailua-Kona, Hawaii 96745
UTM: Zone 4, 810,499 m E, 2,181,554 m N (NAD 83)

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

Responsible Official: Mr. Lawrence Kiley
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Equipment:

1. 357 TPH Pioneer jaw crusher, model no. 3042, serial no. UH3942;
2. 415 TPH Pioneer cone crusher, model no. PH445, serial no. 401605;
3. 490 TPH 3-deck screen, serial no. 900717;
4. 725 kW Caterpillar diesel engine generator, model no. 3412, serial no. 2WJ02225;
5. Various conveyors; and
6. Water spray systems.

BACKGROUND

REK Associates, LLC has submitted an application for an initial temporary covered source permit to operate an 357 TPH portable stone processing plant. The stone processing plant consists of various crushers and screens, powered by a 725 kW diesel engine generator. The total operating hours of the proposed stone processing plant will be limited to 3,000 hours in any rolling twelve-month (12-month) period. Water sprays will be used to control fugitive emissions.

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Process

Rocks are dropped into the feed hopper and fed to the jaw crusher. Crushed material is conveyed to the triple deck screen. Material passing the screen is conveyed to two (2) stockpiles via radial stackers. The top deck material drops into the cone crusher and then conveyed back to the screen.

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 CFR Part 60

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the crushers and screen because the maximum capacity of the facility is greater than 150 tons/hour, and the plants were manufactured after August 31, 1983.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the 725 kW diesel engine generator (manufactured in April 1999) because the engine was manufactured prior to April 1, 2006.

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.

National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAP) (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 the 725 kW diesel engine generator because the engine will operate as a nonroad engine as defined in 40 CFR §1068.30. Subpart ZZZZ applies to stationary internal combustion engines that are not nonroad engines.

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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 Code of Federal Regulations, 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.

Consolidated Emissions Reporting Rule (CERR), 40 CFR Part 51, Subpart A

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

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 will be required because this facility is a covered source.

Best Available Control Technology (BACT)

This source is not subject to BACT analysis because potential emissions are below significant levels. 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 not a synthetic minor source because potential emissions do not exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

Greenhouse Gas Tailoring Rule

Title V permitting for greenhouse gas (GHG) emissions is not applicable because the potential to emit of CO₂ equivalent (CO₂e) emissions are less than 100,000 tons per year. Total GHG emissions on a CO₂e basis using the global warming potential (GWP) of the GHG are shown in the table below.

| GHG | GWP | GHG Mass-Based Emissions (TPY) | CO ₂ e Based Emissions (TPY) |
|-----------------------------------|-----|--------------------------------|---|
| Carbon Dioxide (CO ₂) | 1 | 1820 | 1820 |
| Total Emissions: | | | 1820 |

INSIGNIFICANT ACTIVITIES / EXEMPTIONS

There are no insignificant activities identified by the applicant.

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ALTERNATIVE OPERATING SCENARIOS

Diesel Engine Generator

The permittee may replace the 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 generator from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

AIR POLLUTION CONTROLS

The crushing and screening plants are equipped with water spray systems to control fugitive dust.

PROJECT EMISSIONS

Operating hours for the stone processing plant will be limited to 3,000 hours in any rolling twelve-month (12-month) period.

357 TPH Stone Processing Plant

The maximum capacity of the stone processing plant was 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.

Storage pile emissions were based on emission factors from AP-42 Section 13.2.4 (11/06) – Aggregate Handling and Storage Piles. Vehicle travel on unpaved roads emissions were based on emission factors from AP-42 Section 13.2.2 (11/06) – Unpaved Roads. A 70% control efficiency was assumed for water suppression to control fugitive dust from vehicle travel on unpaved roads.

| 357 TPH Stone Processing Plant | | | | | | |
|--------------------------------|--|-------------|-------------------------------|-------------|-------------------------------|-------------|
| Pollutant | Stone Processing Plant Emissions (TPY) | | Storage Piles Emissions (TPY) | | Unpaved Roads Emissions (TPY) | |
| | 3,000 hr/yr | 8,760 hr/yr | 3,000 hr/yr | 8,760 hr/yr | 3,000 hr/yr | 8,760 hr/yr |
| PM | 3.4 | 9.9 | 3.8 | 11.1 | 10.1 | 29.5 |
| PM-10 | 1.3 | 3.8 | 1.8 | 5.3 | 2.5 | 7.2 |
| PM-2.5 | 0.2 | 0.6 | 0.3 | 0.8 | 0.3 | 0.7 |

725 kW Caterpillar Diesel Engine Generator

The 725 kW diesel engine generator is fired on fuel oil no. 2 with a maximum sulfur content of 0.5% by weight. Emissions were based on manufacturer's data. SO₂ and HAP emissions were based on emission factors from AP-42 Section 3.4 (10/96) – Large Stationary Diesel and All Stationary Dual-fuel Engines.

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| 725 kW Caterpillar Diesel Engine Generator | | | |
|---|----------------------|----------------------------------|----------------------------------|
| Pollutant | Emissions (lb/hr) | Emissions (TPY) [3,000 hr/yr] | Emissions (TPY) [8,760 hr/yr] |
| CO | 2.95 | 4.43 | 12.92 |
| NO _x | 17.04 | 25.56 | 74.64 |
| SO ₂ | 3.71 | 5.57 | 16.26 |
| PM | 0.47 | 0.71 | 2.06 |
| PM-10 | 0.45 | 0.68 | 1.98 |
| PM-2.5 | 0.42 | 0.63 | 1.85 |
| VOC | 0.56 | 0.84 | 2.45 |
| HAPs | 0.011 | 0.016 | 0.048 |

Total Emissions

Total facility emissions are summarized in the table below.

| Total Facility Emissions and Trigger Levels (TPY) | | | | | |
|--|----------------------------|--------------------------|------------------------------|-------------------|-----------|
| Pollutant | Emissions (With Limits) | Emissions (No Limits) | BACT Significant Level | CERR Threshold | DOH Level |
| CO | 4.4 | 12.9 | 100 | 1000 | 250 |
| NO _x | 25.6 | 74.6 | 40 | 100 | 25 |
| SO ₂ | 5.6 | 16.3 | 40 | 100 | 25 |
| PM | 18.0 | 52.6 | 25 | - | 25 |
| PM-10 | 6.2 | 18.2 | 15 | 100 | 25 |
| PM-2.5 | 1.4 | 4.0 | - | 100 | - |
| VOC | 0.8 | 2.5 | 40 | 100 | 25 |
| HAPs | 0.02 | 0.05 | - | - | 5 |

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. An ambient air quality impact analysis is not required for the 725 kW diesel engine generator because the generator is an existing source that is permitted under covered source permit no. 0219-01-CT.

SIGNIFICANT PERMIT CONDITIONS

1. The total operating hours of the stone processing plant, as represented by the total operating hours of the diesel engine generator, shall not exceed 3,000 hours in any rolling twelve-month (12-month) period.

Reason: Operating hour limit proposed by the applicant to limit emissions.

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2. The diesel engine generator shall be fired only on fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight.

Reason: Fuel type proposed by the applicant.

3. Fugitive Emission Limits

- a. The permittee shall not cause to be discharged into the atmosphere from any crusher, fugitive emissions which exhibit greater than fifteen (15) 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 ten (10) percent opacity.

Reason: 40 CFR 60, Subpart OOO provisions.

CONCLUSION

REK Associates, LLC has submitted an application for an initial permit to operate a 357 TPH stone processing plant with 725 kW diesel engine generator. Water sprays will be used to control fugitive emissions. 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, thirty-day (30-day) public comment period, and forty-five-day (45-day) Environmental Protection Agency review period.

Mark Saewong
September 14, 2012