

**PERMIT APPLICATION RENEWAL REVIEW  
 TEMPORARY COVERED SOURCE PERMIT No. 0586-01-CT  
 Renewal Application No. 0586-02**

**Company:** Royal Contracting Company

**Mailing Address:** 677 Ahua Steet  
 Honolulu, HI 96819

**Facility:** 280 TPH Pegson Premiertrak Jaw Crusher with 300 HP (224 bkW) Caterpillar Diesel Engine and additional 7436 Radial Stacking Conveyor

**Location:** Various Temporary Sites, State of Hawaii

**Initial Location:** Off-road, approximately 200m from the end of Makakilo Drive, Oahu

**SIC Code:** 1429 (Crushed and broken stone)

**Responsible Official:** Mr. Leonard Leong  
 Vice President  
 839-9006

**Contact:** Mr. John Guzman Jr.  
 Safety Director  
 839-9006

**Consultant:** EnvironMETeo Services Inc.  
 671-8383

**Equipment:** The facility encompasses the following equipment and associated appurtenances. The 7436 Radial Stacking Conveyor with attached Diesel Engine has been added as a minor modification.

<b>Facility Equipment</b>				
<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Manuf. Date</b>
280 TPH Jaw Crusher	Pegson	Premiertrak 26X44	650-101 BB	2004
300 HP Diesel Engine Generator attached to Jaw Crusher	Caterpillar	C9	CLJ04307	2004
7436 Radial Stacking Conveyor	Power Screening LLC	7436	7436172	2007
74 HP Diesel Engine Generator attached to conveyor	Deutz	BF4L2011	10325690	2007
Water Spray Systems				

## BACKGROUND

Royal Contracting Company has submitted a renewal application for a temporary covered source permit to process basalt and concrete. The stone processing plant consists of a jaw crusher with a self contained screen and two conveyors. The jaw crusher is powered by a 300 hp diesel engine generator. Rebar and other metal are removed by a built-in magnet. An additional conveyor with a 74 hp diesel engine generator was added to the application on January 21, 2010. The stone processing plant and diesel engine generator will be limited to 2,400 hours in any rolling 12-month period. Water spray systems and a water truck will be used to control fugitive emissions.

## 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

1. Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the crushers, screens, and associated conveyors because the maximum capacity of the plant is greater than 150 tons/hour and the equipment were manufactured after August 31, 1983, and before April 22, 2008.
2. Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the diesel engine generator (manufactured February 2007) for the added Radial Stacking Conveyor because the engine is a non-road engine. Manufacturer's specifications indicate the diesel engine generator is EPA Tier 2 certified. The diesel engine for the 280 TPH jaw crusher was manufactured in 2004 and is not subject to the standard.

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

This source is not subject to NESHAPS as no hazardous air pollutants are emitted at significant levels and there are no NESHAPS requirements in 40 CFR Part 61.

National Emission Standards for Hazardous Air Pollutants 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 the diesel engine generator for the 7436 Radial Stacking Conveyor even if the engine is classified as a new source (constructed on or after June 12, 2006) because it is a non-road engine part of a mobile source. The new engine does meet Tier 2 design requirements.

Prevention of Significant Deterioration (PSD)

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 since 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)

This source is not subject to CERR since 40 CFR Part 51, Subpart A - Emissions Inventory Reporting Requirements, determines CERR based on facility wide emissions of each air pollutant at the CERR triggering levels. The emissions do not exceed respective CERR threshold levels. As such, emissions data will not be required to be inputted into the National Emissions Inventory (NEI) database.

DOH Annual Emissions Reporting

The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding the DOH reporting level(s) and for all covered sources. Internal annual emissions reporting will be required because this is a covered source.

Best Available Control Technology (BACT)

This source is not subject to BACT analysis because potential to emit emissions for PM and PM-10 does exceed the significant levels for the conveyor modification which adds another transfer point. BACT analysis is required for new sources or significant modifications to sources that have the potential to emit or increase emissions above significant levels considering any limitations as defined in HAR, Section 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 even when the facility is operated at its maximum capacity continuously for 8,760 hours per year.

**INSIGNIFICANT ACTIVITIES / EXEMPTIONS**

Storage Tanks and Fuel Burning Equipment less than 1 MM BTU Input

The following storage tanks are less than 40,000 gallons and are considered insignificant in accordance with HAR 11-60.1-82(f)(1):

1. one (1) 500 gallon fuel oil no. 2 storage tank.

The following fuel burning equipment less than 1 MM BTU Input and are considered insignificant in accordance with HAR 11-60.1-82(f)(2):

1. 74 HP Deutz diesel engine for the 7436 Radial Stacking Conveyor.

**ALTERNATIVE OPERATING SCENERIOS**

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**

Fugitive Emissions

The stone processing plant is equipped with water spray systems to control fugitive emissions from crushing and screening operations. A water truck will be used to control fugitive emissions for the stockpiles, yard area, and unpaved roads.

**PROJECT EMISSIONS**

Emission calculations are attached to this review. The operating hours of the stone processing plant and diesel engine generator will be limited to 2,400 hours in any rolling twelve-month (12-month) period.

280 TPH Stone Processing Plant

Emissions were based on the maximum capacities of each crusher and screen. Water spray systems will be used to control PM emissions. The controlled emissions factors from AP-42 Section 11.19.2 (08/04) - Crushed Stone Processing and Pulverized Mineral Processing were used to calculate emissions.

<b>280 TPH Stone Processing Plant</b>		
<b>Pollutant</b>	<b>Emissions (TPY) [2,400 hr/yr]</b>	<b>Emissions (TPY) [8,760 hr/yr]</b>
PM	1.36	4.96
PM-10	1.21	4.43
PM-2.5	0.11	0.40

# PROPOSED

## Storage Piles

Emissions were based on the maximum capacity of the 280 TPH primary jaw crusher. A 70% control efficiency was assumed for water suppression to control fugitive dust. Emissions were based on emission factors from AP-42 Section 13.2.4 (11/06) - Aggregate Handling and Storage Piles.

<b>Storage Piles</b>		
Pollutant	Emissions (TPY) [2,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	2.86	10.43
PM-10	1.35	4.93
PM-2.5	0.20	0.75

## Truck Travelling on Unpaved Road

Emissions were based on the maximum capacity of the 280 TPH primary jaw crusher. A 70% control efficiency was assumed for water suppression to control fugitive dust. Emissions were based on emission factors from AP-42 Section 13.2.2 (11/06) - Unpaved Roads.

<b>Truck Travelling on Unpaved Road</b>		
Pollutant	Emissions (TPY) [2,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	7.14	26.05
PM-10	1.74	6.37
PM-2.5	0.17	0.64

## 224 kW Caterpillar Diesel Engine Generator

The diesel engine generator is fired on fuel oil No. 2 with a maximum sulfur content of 0.5% by weight, and a maximum fuel consumption of fifteen (15) gallons/hour. CO, NO<sub>x</sub>, PM, and TOC emissions were based on manufacturer's data. SO<sub>2</sub> emissions were based on mass balance calculations. HAP emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines.

<b>224 kW Diesel Engine Generator</b>			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [2,400 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	0.34	0.41	1.49
NO <sub>x</sub>	3.26	3.91	14.28
SO <sub>2</sub>	1.06	1.28	4.66
PM	0.03	0.04	0.13
PM-10	0.03	0.04	0.13
PM-2.5	0.03	0.04	0.13
TOC	0.00	0.00	0.01
HAPs	0.008	0.010	0.035

Total Emissions

Total facility emissions are summarized in the table below.

<b>Total Facility Emissions and Trigger Levels (TPY)</b>					
Pollutant	Emissions (Limited)	Emissions (No Limits 8,760 hr/yr)	BACT Significant Level	CERR Triggering Level (Type A sources / Type B sources)	DOH Level
CO	0.4	1.5	100	2,500 / 1000	250
NO <sub>x</sub>	3.9	14.3	40	2,500 / 100	25
SO <sub>2</sub>	1.3	4.7	40	2,500 / 100	25
PM	11.4	41.6	25	-	25
PM-10	4.3	15.9	15	250 / 100	25
PM-2.5	0.5	1.9	-	250 / 100	-
VOC	0.0	0.0	40	250 / 100	25
HAPs	0.008	0.03	-	-	5

**AIR QUALITY ASSESSMENT**

The only modification proposed in this permit renewal application that increased emissions was the addition of a Radial Stacking Conveyor with a 74 HP diesel engine, insignificant source. The additional conveyor will be used infrequently only in the event a larger stockpile is needed. The emissions increases from the additional conveyor are minor. Therefore, an Ambient Air Quality Impact Assessment (AAQIA) is not required to be performed.

**SIGNIFICANT PERMIT CONDITIONS**

1. The crushers, screens, and associated conveyors are subject to the provisions of 40 CFR Part 60, Subpart A and Subpart OOO.
2. The total operating hours of the stone processing plant, as represented by the total operating hours of the diesel engine generator, shall not exceed 2,400 hours in any rolling twelve-month (12-month) period. A non-resetting hour meter shall be installed on the diesel engine for recording of the 2400 hour annual operating limit.
3. The diesel engine generator shall be fired only on fuel oil no. 2 with maximum sulfur content not to exceed 0.5% by weight.

**CONCLUSION**

Actual emissions should be less than those estimated. Emission calculations were based on the maximum capacities of the crusher and screen.

Based on the information submitted by Royal Contracting Company, it is the determination of the Department of Health that the proposed project will be in compliance with the Hawaii Administrative Rules, Chapter 11-60.1, and State and National ambient air quality standards. Recommend issuance of the temporary covered source permit renewal subject to the incorporation of the significant permit conditions, 30-day public comment period, and 45-day Environmental Protection Agency review period.

Gary Siu  
March 2010