

## PROPOSED

**PERMIT APPLICATION REVIEW  
TEMPORARY COVERED SOURCE PERMIT NO. 0769-01-CT  
Application for Modification Review No. 0769-02  
Significant Modification-Addition of one 551 TPH Mobile Powerscreen Screen**

**Company:** Hawaiian Dredging Construction Company (HDCC)

**Mailing Address:** 91-063 Malakole Street  
Kapolei, Oahu, HI 96707

**Facility:** Crushing and Screening Plants

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

**Initial Location:** TMK (2) 2-8-079:013, Maui Business Park  
Kahului, Maui

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

**Responsible Official:** Mr. David Gomez  
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**Contact:** Mr. Fred Peyer  
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### Equipment:

1. 400 TPH TEREX/Pegson portable jaw crushing plant (existing), model no. XA400S, serial no. To be provided (manufactured 2011), with:
  - a. 13'5" x 3'4" feed hopper;
  - b. Various conveyors;
  - c. Built-in water spray system; and
  - d. 315 HP Scania diesel engine, model no. DC-09 70 A, serial no. To be provided (manufactured 2011) with Tier 4i SCR (selective catalytic reduction) NOx control unit.
2. 551 TPH Powerscreen screen (addition), model no. Chieftain 2100, serial no. PID00124CDGB22277, with :
  - a. 111.3 HP Caterpillar diesel engine, model no. C-4.4 ATAAC, serial no. 44605571; and
  - b. water sprays and material wetting to be used as dust control.

Due to the size and manufacture date of the crusher, the crusher and screen are subject to 40 CFR Part 60, Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants.

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## BACKGROUND

Hawaiian Dredging Construction Company has submitted a modification application to add a 551 TPH rock screen to their 400 mobile crushing plant. The additional rock screen may operate together with the existing 400 TPH mobile crushing plant or operate alone at different jobsites. Due to the additional screen ability to operate independently of the crusher, emission calculations are at its full 551 TPH capacity. The increase in the number of allowable jobsites increases the potential emissions from the equipment covered by this permit. However, each jobsite is considered a facility because by definition, a facility needs a location. This modification is a significant change because the potential emission increase at each jobsite is greater than 2 tons, HAR 11-60.1-81.

The 400 TPH mobile crushing plant consist of a jaw crusher and the additional 551 TPH screen. The additional mobile screen is track mounted and powered by a 111.3 HP diesel engine. The additional screen diesel engine is an insignificant activity because the heat input is less than 1 MM Btu. The additional screen is subject to NSPS Subpart OOO when it operates with the existing crusher.

The existing 400 TPH Powerscreen mobile jaw crusher is powered by a 315 HP Caterpillar Tier 4i diesel engine. The crusher is track mounted and self-propelled. The mobile jaw crusher is subject to NSPS Subpart OOO when it operates either separately or with the additional screen.

Both the mobile crushing plant and mobile screen will be limited to 2500 hours in any rolling twelve-month (12-month) period. Water sprays and a water truck will be used to control fugitive emissions.

### Process

Raw material is dropped into the feed hopper by a loader and passed to the jaw crusher. The crushed material drops onto a moving conveyor belt and is transported to the stockpile. The product material is conveyed to one stockpile.

## 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

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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 Stationary Sources (NSPS), 40 CFR Part 60

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the crushing plant (manufactured in 2011) because the maximum capacity of the facility is greater than 150 tons/hour, and the crushing plant was manufactured after August 31, 1983. The additional screen would be subject to the Subpart when it operates with the crushing plant.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the existing 351 HP diesel engine because the engine is considered a nonroad engine as defined in 40 CFR §1068.30. Subpart IIII applies to stationary internal combustion engines that are not mobile/nonroad engines.

### 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 existing 315 HP diesel engine because the engine is considered a nonroad engine as defined in 40 CFR §1068.30. Subpart ZZZZ applies to stationary internal combustion engines that are not mobile/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 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 triggering levels.

### 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.

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### Best Available Control Technology (BACT)

This source is not subject to BACT analysis with operational limitations because potential emissions do not exceed BACT trigger levels (Both DE fuel is ULSD and Crushing Plant utilizes built-in wet spray systems would be BACT) . 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.

The table below shows the net emissions from the proposed modification does not trigger BACT.

Table 1 - Emissions Rates, BACT

Pollutant	Existing Plant Emissions (TPY)	Proposed (net) Emissions (TPY)	Total Emissions (TPY)	BACT Trigger (TPY)
PM	4.5	6.5	11.0	25
PM <sub>10</sub>	2.1	2.9	5.0	15
SO <sub>x</sub>	0	0	0	40
NO <sub>x</sub>	1.2	0	1.2	40
VOC <sup>1</sup>	0	0	0	40
CO	0.8	0	0.8	100

Limitation 2500 hrs/year

### 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 emissions exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year (PM max 127 tn/yr).

## **INSIGNIFICANT ACTIVITIES / EXEMPTIONS**

The 111.3 HP Caterpillar diesel engine on the 551 TPH mobile screen is an insignificant activity because the heat input is less than 1 MMBty/hr. HAR§11-60.1-82(f)(2)

### Fuel Tank

Diesel fuel tank

## **ALTERNATIVE OPERATING SCENARIOS**

### Diesel Engine

The permittee may replace the existing tier 4i diesel engine with a temporary replacement unit of similar size with equal or lesser emissions if any repair reasonably warrants the removal of the diesel engine from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation). (12 month Limit)

**AIR POLLUTION CONTROLS**

The crushing plant is equipped with a built-in water misting spay system 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.

**PROJECT EMISSIONS**

Emissions from the mobile stone processing plant were estimated using AP-42 and manufacturer emission factors. PM<sub>10</sub> emissions from the crushing operations were estimated using AP-42 section 11.19.2, revised 8/04. AP-42 section 3.3, revised 10/96, was used to estimate the emissions from the proposed diesel engines. The table below lists the maximum emissions from the mobile stone processing plant with the addition of the proposed modification.

Table 2 - Emissions for the Mobile Stone Processing Plant

Pollutant	Existing Facility <sup>2</sup> Emissions 2,500 hrs (TPY)	Modification <sup>3,4</sup> Emissions 2,500 (TPY)	Total Emissions 2,500 hrs (TPY)
PM <sub>10</sub>	2.1	2.9	5
SO <sub>x</sub>	0	0	0
NO <sub>x</sub>	1.2	0	1.2
VOC <sup>1</sup>	0	0	0
CO	0.8	0	0.8

1. Total Organic Compounds (TOC) as volatile organic compounds (VOC)
2. Existing facility consists of 400 TPH Mobile Jaw Crusher.
3. Modification equipment consists of 551 TPH Mobile Screen. Emissions include storage piles.
4. Mobile screen diesel engine is an insignificant activities and not included in the calculations.
5. Operating hours each piece of equipment in the crushing plant will be limited to 2,500 hours in any rolling twelve-month (12-month) period.

Greenhouse Gas Tailoring Rule

Title V or PSD permitting for greenhouse gas (GHG) emissions is not applicable to this facility even with the modification because the potential to emit of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions is less than 100,000 tons per year. Under the Tailoring Rule, in no event are sources with the potential to emit less than 100,000 tons per year CO<sub>2</sub>e subject to PSD or Title V permitting for

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GHG emissions before 2016. Total GHG emissions on a CO<sub>2</sub>e basis using the global warming potential (GWP) of each GHG are determined in the table below.

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO <sub>2</sub> e Based Emissions (TPY)
Carbon Dioxide (CO <sub>2</sub> )	1	0.8	0.8
Methane (CH <sub>4</sub> )	0	0	0
Nitrous Oxide (N <sub>2</sub> O)	310	1.2	372
Total Emissions:			372.8

### AIR QUALITY ASSESSMENT

An ambient air quality assessment is not required for this modification because the proposed new Mobile Screen emissions are fugitive in nature. The diesel engine on the new Mobile Screen is an insignificant activities. The existing diesel engine and its' emissions are considered part of the background.

### SIGNIFICANT PERMIT CONDITIONS

1. The total operating hours for the existing 400 TPH mobile crushing plant with 315 HP diesel engine and the additional 551 TPH screen with exempt diesel engine is limited to 2,500 hours per year, therefore an hour meter shall be required on each diesel engine.
2. The existing 315 HP Tier 4i diesel engine and additional exempt diesel engine shall be fired only on fuel oil no. 2 with a maximum sulfur content not to exceed 15 ppm as required by the manufactures specifications.
3. The permittee shall not cause to be discharged into the atmosphere from the existing crusher, fugitive emissions which exhibit greater than fifteen (15) percent opacity (construction after April 22, 2008).
4. 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.

### CONCLUSION

HDCC is proposing to increase their inventory of equipment covered under this permit with the addition of a mobile screen. The revised emission estimates and previous modeling of the stone processing facility operating with the new equipment predicted that the facility will remain a non-major source and will operate within the limits of the ambient air quality standards provided operations are limited to 2500 hours per year. To ensure compliance, the operating hours must be monitored by the use of a non-resetting hour meter on each of the diesel engines. Air pollution controls at the facility consist of installing, operating, and maintaining waterspray systems and water trucks.

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Issuance of a Temporary Covered Source Permit is recommended based on the information provided by the applicant and the conservative nature of the calculations. 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.

Gary Siu  
June 2012