

**Permit Application Review
Temporary Covered Source Permit (CSP) No. 0569-01-CT
Modification Application No. 0569-02**

Permit No.: 0569-01-CT

Applicant: Willocks Construction Corporation

Facility: Mobile Crushing Plant

Mailing Address: 16-209 Melekahiwa Place
Keaau, HI 96749

Location: Various sites, State of Hawaii

Present Location: University of Hawaii, Hilo Campus
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Modification/Equipment Description

The modification consists of Willocks Construction Corporation proposing to add the following equipment which were purchased from Keauhou Kona Construction Company, CSP No. 0549-01-CT:

1. One (1) 380 tph Kue Ken primary jaw crusher, model no. 4236 (42" x 36"), serial no. 120 M50 17, with stepped vibrating grizzly feeder approximately 42" x 16";

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2. One (1) 210 tph Telsmith cone crusher, model no. 48 S TEL, serial no. 202 M72 74, with an El-Jay two-deck screen, model no. 34D 0689, identification no. FSG 514 324;
3. One (1) 275 hp Caterpillar diesel engine (de), model no. 330 6T, serial no. 7JB 054 89;
4. One (1) 360 kW Detroit Diesel diesel engine generator (deg), model no. 8083-7400, serial no. 8VF 112 536;
5. One (1) 179 tph Powerscreen Powergrid, 10 ft x 14 ft, model Mk II, serial no. 720 4123, and powered by an exempted 58 hp Duetz diesel engine with:
 - a. One (1) discharge belt conveyor;
 - b. One (1) discharge hopper; and
 - c. A rubber shroud.

Note: The Powerscreen Powergrid manufacturer's catalog specified a maximum screening capacity of 650 tph. The NSP No. 0473-01-NT specified the following restriction:

- a. The maximum bucket size of front end loader will be equal to or less than 5.25 cubic yards per load;
 - b. The maximum scoops per hour are 20 scoops which equals 105 cubic yards per hour;
 - c. The density of wet gravel is 126 pound per cubic foot which is equal to 1.7 tons per cubic yard; and
 - d. $105 \text{ cy/hr} \times 1.7 \text{ ton/cy} = 179 \text{ ton/hr}$. So the maximum capacity of the screen will be limited to 179 tons per hour of screening material.
6. Various conveyors and water spray systems,

An application for a modification to the "340 tph Mobile Crushing Plant" was received by the Department of Health (DOH) on June 13, and July 9, 2007, along with a check for \$400. A \$100 credit was given for the renewal of NSP No. 0473-01-NT.

For this amended permit the modified 340 tph Mobile Crushing Pplant will be entitled, "Mobile Crushing Plant".

Background

Willlocks is a construction company. The initial permit was issued for the 340 tph Extec mobile crusher which is powered by a 310 hp Caterpillar diesel engine on tracks. The added equipment were purchased from Keauhou Kona Construction Company.

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According to a telephone call with Mike Gomes, Willocks will use the recently purchased equipment when stone crushing opportunities arises. Under normal conditions, Willocks will be doing construction work.

SIC Code: 1629 Heavy Construction Not Elsewhere Classified and
1429 Crushed and Broken Stones Not Elsewhere Classified

Air Pollution Controls

No control devices.

Sulfur dioxide emissions are controlled using fuel containing no more than 0.5% sulfur by weight.

Water sprays are on the existing 340 tph mobile jaw crusher and at the end of the 340 tph mobile crusher's conveyor.

Water spray bars will also be added above all loading drop points above the added new jaw crusher and various locations through the stone processing process.

A water spray system, including spray bars or nozzles, shall be installed, maintained, and used as necessary during operation of the Mobile Crushing Plant to minimize fugitive dust. The water spray nozzles shall be located at the loading points of the crushers, screen and drop discharge end of the conveyors. For example, water spray shall be located at the following locations:

The transfer location into the crushers;

- (1) Conveyor transfer to the cone crusher;
- (2) Conveyor transfer below each crusher;
- (3) Conveyor transfer to the screen;
- (4) Conveyor transfer from the screen;
- (5) Other material transfer points; and
- (6) Conveyor transfer to each stockpile.

A water truck shall be maintained and used on the grounds as necessary to minimize fugitive dust from roads, vehicle travel, storage piles, material transfer, for example, loading and unloading operations, screening operations, and other applicable site locations.

A water spray shall be operated and maintained at the initial loader of the stone processing and at the loader for the screen.

Applicable Requirements

Hawaii Administrative Rules (HAR), Title 11

Chapter 59, Ambient Air Quality Standards

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

Subchapter 8 - Standards of Performance for Stationary Sources

11-60.1-161 New Source Performance Standards

Subchapter 10 - Field Citations

Title 40 Code of Federal Regulations (CFR), Part 60, Standards of Performance for New Stationary Sources, also known as New Source Performance Standards (NSPS)

Subpart A - General Provisions, Subpart OOO - Standards of Performance for Non-metallic Mineral Processing Plants. Subpart OOO applies to portable crushed stone plants with capacities greater than 150 tph which commence construction, reconstruction, or modification after August 31, 1983. The mobile crushing plant is subject to Subpart OOO because it meets the size and date criteria. The one exception is the 210 tph cone crusher which was manufactured prior to 1983.

Synthetic Minor

A synthetic minor is a facility that is potentially major source of pollution, as defined in HAR §11-60.1-1, but is made non-major through federally enforceable permit conditions. The definition of a major source is a source which has the potential to emit greater than 100 ton per year of a regulated air pollutant, or greater than 10 tons per hazardous air pollutant, or greater than 25 tons per year for any combination of HAPs.

A synthetic minor source is a potentially major source but is made a non-major covered source through federally enforceable permit conditions, for example, limiting the facility's hours of operation, limiting the facility's fuel consumption, or limiting the plant's material throughput potential.

This mobile crushing plant is a synthetic minor source because without hour-limitations on operations the maximum potential of nitrogen oxide and particulate matter emissions exceed 100 tons per year. The stone crushers are being limited by the permit to 2,500

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hours per any rolling twelve (12) month period, and the mobile screen is limited to 3,120 hour of operation per rolling twelve (12) month period.

Non Applicable Requirements

Prevention of Significant Deterioration (PSD) Requirements

PSD review applies to new major stationary sources and major modifications to these types of sources as listed and defined in HAR, Title 11, Chapter 11-60.1, Subchapter 7. This facility is a non-major portable source. Annual potential emission of nitrogen oxides and particulate matter are calculated at 33 tons per year. Hence, PSD review is not required.

National Emission Standards for Hazardous Air Pollutants for Source Categories NESHAP Requirements

Pursuant to section 112 of the Clean Air Act (CAA), 40 CFR Part 61, §61.01(a), list the substances which have been designated as HAPs. NESHAPS is not applicable because there no standards applicable to stone crushers or diesel engines.

MACT Requirements

Title 40 CFR Part 63-National Emission Standards for Hazardous Air Pollutants for Source Categories. Maximum Achievable Control Technology (MACT) means the maximum degree of reduction in emissions of the hazardous air pollutants (HAPs), on a case-by-case basis, taking into consideration the cost of achieving such emission reduction and any non air quality health and environmental impacts and energy requirements that is deemed achievable. There are currently no MACT standards listed in the Code of Federal Regulations (CFR) for stone crushers or diesel engine operations. This source is not subject to MACT.

BACT Requirements

Best Available Control Technology (BACT) analysis applies to new and modified sources if the net increase in pollutant emissions exceed "significant levels" as defined in HAR §11-60.1-1, considering any limitations, enforceable by the Department of Health, on the source to emit a pollutant. BACT is an emissions limitation based on the maximum degree of reduction for each pollutant, on a case-by-case basis, the applicant eliminates or supports step-by-step pollution control options, beginning at the top of a list of best available pollution control technology, taking into account:

- (1) Energy;
- (2) Environmental; and
- (3) Economic impacts and other costs, if achievable through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of the pollutant.

See project emissions in Table 1 below, for individual and total plant emissions. The calculated potential emissions for the added jaw crusher, cone crusher, mobile screen,

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diesel engine, and diesel engine generator, does not exceed the “significant level”. BACT is not required.

Consolidated Emissions Reporting Rule (CERR)

40 Code of Federal Regulations (CFR) Part 51, Subpart A-Emissions Inventory Reporting Requirements. CERR was established to simplify reporting, offer options for data collection and exchange, and unify reporting dates for various categories of criteria pollutant emission inventory, for example, point, area, onroad and nonroad mobile, and biogenics. This rule applies to state and local agencies.

CERR is based on plant-wide emissions of each air pollutant that emits at or exceeds the CERR triggering levels as shown in the table below:

Pollutant	Plant Emissions (tpy)	Significant Level (tpy)	CERR Annual Inventory Trigger Levels Type A / B Point Source (tpy)	DOH Level (tpy)
NO _x	32.9	40	2,500 / 100	25
SO _x	3.8	40	2,500 / 100	25
CO	5.3	100	2,500 / 1000	250
PM ₁₀	12.4	15	250 / 100	25
PM _{2.5}	12.4	-	250 / 100	25
VOC	2.1	40	250 / 100	25
NH ₃ *	.	40	250 / 100	-
Pb*	-	0.6	5	0.6

* Ammonia (NH₃) and lead (P_b) emissions are unavailable.

The Mobile Crushing Plant’s potential annual emissions do not exceed 250 tons. CERR is not applicable. Emissions data will not be required to be added into the National Emissions Inventory (NEI) database. DOH in-house reporting will be required because nitrogen oxide emissions are greater than 25 tpy.

Compliance Assurance Monitoring (CAM) Requirements

40 CFR Part 64. The purpose of Compliance Assurance Monitoring (CAM) is to provide reasonable assurance that compliance is being achieved with large emission, major, or

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potential major, sources that rely on air pollution control devices to meet an emissions limit or standard. CAM applies if the emissions unit applies to all of the following:

1. Is located at a major source. No
2. Is subject to a federal enforceable applicable requirements or standard. Yes.
3. Uses a control device to achieve compliance. No.
4. Has potential pre-control emissions that exceed applicable major source threshold level. Yes.
5. Did not complete application by Apr. 20, '98? No.
6. Not be subject to certain regulations that specifically exempt it from CAM. Yes.

Emission units are any part or activity of a stationary source that emits or has the potential to emit any air pollutant. This source does not exceed 100 tpy and is not a major source. CAM is not applicable because this modification to the existing facility does not apply to all of the above.

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI-ICE)

40 CFR Part 60, Subpart IIII, applies to any stationary internal combustion engine, such as diesel engines (DE), including reciprocating or rotary, that converts heat energy into mechanical work. This definition excludes mobile and spark ignition (SI), engines.

Applicable CI-ICE dates are:

1. July 11, 2005 is the commenced construction date.
The date of construction is defined as the date the engine is ordered by the owner or operator; and
2. April 1, 2006 is the manufactured date.

The format of the final standard is an output-based emission standard for PM, NO_x, CO, and NMHC (non methane hydro carbons) in units of emissions mass per unit work performed (grams per kW-hr) and smoke standards as a percentage. The emission standards are generally modeled after EPA's standards for nonroad and marine DE. The nonroad DE standards are phased in over several years and have tiers with increasing levels of stringency.

Stationary ICE differs from mobile ICE in that it is not a nonroad as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle.

A SI engine means a gasoline, natural gas, or liquid petroleum gas (LPG) fueled engine, or any type of engine with a spark plug or other sparking device, and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation.

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Dual-fuel engines in which a liquid diesel fuel is used for CI and gaseous fuel, typically natural gas, is used as the primary fuel at an average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are SI engines.

CI-ICE is not applicable because the added diesel engines and diesel engine generator were manufactured prior to 2005.

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE-NESHAPs)

40 CFR Part 63, Subpart ZZZZ is applicable to stationary RICE located at major and area sources of HAPs emissions. This subpart is not applicable because, since this is an existing source, that is, construction began before June 12, 2006, in other words, the engines were built before 2006. Also per 40 CFR §63.6590(b)(3), an existing compression ignition (CI) stationary RICE does not have to meet the requirements of this subpart or subpart A of this part. So no initial notification is required.

Insignificant Activities

The 58 hp mobile Deutz diesel engine which powers the mobile 179 tph Powerscreen Powergrid is exempted from DOH air permit requirements in accordance with HAR § 11-60.1-62(d)(4) which states "... *fuel burning equipment with a heat input capacity less than one-million BTU per hour.*" The 58 hp Deutz diesel engine has an input capacity of 0.41 MMBtu/hr

Alternative Operating Scenarios

The permittee may replace any inoperable diesel engine or the diesel engine generator with a temporary replacement unit of the same or smaller size if any repair reasonably warrants the removal of the diesel engine or the diesel engine generator from its site, that is, equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation, until the original engine is operable again.

Air Pollution Controls

Fugitive dusts from the stone crushing plant will be controlled by a water spray system and a water truck.

Fuel burned by the diesel engines and the diesel engine generator shall be fuel oil no. 2 with less than 0.5 percent sulfur by weight.

Project Emissions

The pollutant from the added 380 tph Kue Ken primary jaw crusher and the 210 tph Telsmith cone crusher is fugitive particulate matter (PM) dust. To expedite the DOH review process, calculations from the initial review of the equipment were used when applicable.

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For the newly added Kue Ken primary jaw crusher and the TelSmith cone crusher, stone crushing emissions were redone to comply with the most recent EPA-42 emission factors and the State of Hawaii emission factors for stone crushing plants, that is, using "*controlled emission factors*" for water spray wet suppression of fugitive dust. Emission Factors (EF) are referenced from AP-42 table 11.19.2-2 Crushed Stone Processing, August 2004.

For the new primary and cone crushers, the conditions of the previous owner's permit were kept the same and transferred to this permit to keep the integrity of the previous permit conditions. Emissions are based on the maximum rated capacity of the crushers at 2,500 hours of operation.

Emissions for the 360 kW Detroit Diesel diesel engine generator, and the 275 hp Caterpillar diesel engine at 2,500 hours limit per rolling 12-month period, were transferred from the previous application review which were calculated by referencing AP-42, Section 3.3, October 1996, Gasoline and Industrial Engines.

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For the 380 Kue Ken primary jaw crusher and the 210 tph Telsmith cone crusher the fugitive PM₁₀ emissions are shown in Table 2 below.

Table 2				
Estimated Controlled Emissions of Criteria Air Pollutants for the Newly Added 380 tph Primary Jaw Crusher and the 210 tph Secondary Cone Crusher				
Equipment Description	Stone Processing Fugitive Dust			
	2500 hr/yr		8760 hr/yr	
	PM (ton/yr)	PM₁₀ (ton/yr)	PM (ton/yr)	PM₁₀ (ton/yr)
Primary Crusher	0.57	0.26	2.0	0.90
Secondary Crusher	0.32	0.14	1.10	0.50
Screening	1.05	0.35	3.66	1.23
Fine Screening	1.71	1.05	5.99	3.66
Conveyor Transfer	0.47	0.02	1.63	0.08
Truck Unloading –Fragmented Broken Stones	0	0	0.01	0.01
Truck Unloading – Conveyor	0.01	0.01	0.05	0.05
Storage Piles	7.5	3.5	26.3	12.3
Unpaved Roads	15.9	3.9	55.7	13.7
Totals	27.5	9.23	96.4	32.4

For the 275 hp Caterpillar diesel engine (de):

1. The maximum fuel consumption is 15.1 gallons per hour;
2. The emission rates are based on a limit of 2,500 hour per year;
3. The emission rates use a high heating value (HHV) of fuel oil no. 2 is set at 137,030 MMBtu/gal;
4. The emission rates use a set value of 19,300 Btu per pound of fuel; and
5. A weight of 7.1 pounds per gallon of fuel oil no. 2.

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The 275 hp de emissions are shown in Table 3 below.

<p align="center">Table 3 For the Newly Added 275 hp Diesel Engine Emissions</p>				
Pollutant	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr) / (g/s)	Emission Rate (2,500 hr/yr) (tpy)	Emission Rate (8,760 hr/yr) (tpy)
NO _x	4.41	9.13 / 1.15	11.4	40
SO ₂	Mass balance	1.07 / 0.14	1.3	4.7
CO	0.95	1.97 / 0.25	2.5	8.6
PM	0.32	0.66 / 0.08	0.8	2.8
PM ₁₀	0.31	0.64 / 0.08	0.8	2.8
PM _{2.5}	0.29	0.62 / 0.08	0.8	2.8
TOC	0.36	-	0.9	3.3
HAPs	Various total 0.01	-	0.02	0.1

For the 360 kW Detroit Diesel diesel engine generator, maximum fuel consumption is 24.2 gallons per hour. The emission rates and HHV of the Detroit Diesel are based on the same values given above for the 275 hp de. The 360 kW deg emissions are given below in Table 4.

<p align="center">Table 4 For the Newly Added 360 kW Diesel Engine Generator Emissions</p>				
Pollutant	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr) / (g/s)	Emission Rate (2,500 hr/yr) (tpy)	Emission Rate (8,760 hr/yr) (tpy)
NO _x	4.41	14.62 / 1.85	18.3	64.1
SO ₂	Mass balance	1.71 / 0.22	2.1	7.4
CO	0.95	3.15 / 0.40	2.1	13.7
PM	0.32	1.06 / 0.13	0.8	4.6
PM ₁₀	0.31	1.03 / 0.13	0.8	4.6
PM _{2.5}	0.29	1.02 / 0.13	0.8	4.2
TOC	0.36	-	0.9	5.3
HAPs	Various total 0.01	-	0.02	0.1

For the 179 hp Powerscreen Powergrid emissions were redone to comply with the most recent EPA-42 emission factors. NSP No. 0473-01-NT limited the powerscreen to 3,120 hours per year. The same permit conditions from the NSP were transferred to this amended permit to keep the integrity of the initial mobile screen permit

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The NSP exempted the 58 hp diesel engine, which provides electricity for the Powerscreen. 3.4 gallons per hour was given for fuel consumption. The emissions for the powerscreen and 58 hp diesel engine are given in Table 5 and 6 below respectively.

Table 5				
Estimated Controlled Emissions of Criteria Air Pollutants for the Newly Added 179 tph Powerscreen Powergrid				
Equipment Description	Screen Fugitive Dust			
	3120 hours/yr		8760 hr / yr	
	PM (ton/yr)	PM₁₀ (ton/yr)	PM (ton/yr)	PM₁₀ (ton/yr)
Screening	0.61	0.21	1.72	0.58
Conveyor Transfer	0.27	0.01	0.77	0.04
Truck Unload	0.01	0.01	0.02	0.02
Storage Piles	2.38	1.12	6.67	3.15
Totals	3.27	1.35	9.18	3.79

Table 6				
For the Newly Added 58 hp Duetz Diesel Engine Emissions				
Pollutant	Emission Factor (lb/MMBtu)	Emission Rate (lb/hr) / (g/s)	Emission Rate (3,120 hr/yr) (tpy)	Emission Rate (8,760 hr/yr) (tpy)
NO _x	4.41	2.05 / 0.26	3.2	9.0
SO ₂	Mass balance	0.24 / 0.03	0.37	1.05
CO	0.95	0.44 / 0.06	0.69	1.94
PM	0.31	0.14 / 0.02	0.23	0.63
PM ₁₀	0.31	0.14 / 0.02	0.23	0.63
PM _{2.5}	0.31	0.14 / 0.02	0.23	0.63
TOC	0.36	-	0.26	0.73
HAPs	Various total 0.01	-	0.01	0.01

For the existing 340 tph mobile Extec crusher, fugitive PM emissions from crushing, travel on unpaved roads, and aggregate handling were based on at 8760 hours, and account for use of water sprays to control fugitive emissions, were not changed and transferred from the initial review and shown on Table 7 below .

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The existing mobile crusher is powered by the 310 hp Caterpillar diesel engine which is on the same crusher platform. Emissions are criteria pollutants coming from a point source of the diesel engine's stack. The initial calculated emissions were based on the manufacturer's data and AP-42, Section 3.3 (10/96), and also transferred to this review.

Table 7 Existing 340 tph Extec Mobile Crusher With 310 hp Caterpillar Diesel Engine (tpy)					
Pollutant	Crushing	Conveyor and Storage Pile Transfer	Unpaved Roads	Diesel Engine	Totals
NO _x				20.54	20.54
SO ₂				4.97	4.97
CO				25.45	25.45
PM	5.12	3.46	9.80	1.21	19.59
PM ₁₀	2.06	1.64	2.9	1.19	7.79
PM _{2.5}	0.77	0.51	0.40	1.19	2.87
TOC				2.90	2.90
HAPs				0.06	0.06

The entire Mobile Crushing Plant's emissions are summarized in Table 8 below.

Table 8 The Mobile Crushing Plant's Total Emissions (tpy)		
Pollutant	Potential Permit Emissions 2500 hr/yr for the DE & DEG and 3120 hr/yr for the Powerscreen	Maximum Potential Emissions 8760 hr/yr
NO _x	32.9	134
SO ₂	3.77	18
CO	5.29	50
PM	32.6	133
PM ₁₀	12.4	52
PM _{2.5}	12.4	52
TOC	2.1	12
HAPs	0.1	0.3

Air Quality Assessment

Ambient air means the general outdoor atmosphere to which the public has access. The numerical ambient air standards limit the time-average concentration of specified

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pollutants disbursed or suspended in the ambient air of the State. These standards do not in any manner authorize the significant deterioration of existing air quality in any portion of the State.

An Ambient Air Quality Impact Assessment was performed on the added 275 hp diesel engine and the 360 kW diesel engine generator point sources operating simultaneously in January 2005 on the Keauhou Kona CSP no. 0549-01-CT review. The modeling analysis was performed based on the following assumptions:

1. Rural dispersion parameters.
2. Simple and complex terrain effects.
3. Terrain elevation data using the Kiholo topographic quadrant zone 5 from file 0030.DEM for terrain data in NAD27 format.
4. Terrain special grid with 25 meter spacing.
5. Sources located at approximate center of a 1,000 x 1,000 square meter grid.
6. Meteorology data from file K10.ASC.
7. Equipment and source location arbitrarily selected in vicinity of location proposed for source.
8. EPA building profile input program applied to evaluate the effects for potential downwash from the 380 tph crusher, the cone crusher, and the screen, structures.
9. Most recent available background concentrations were selected for the air quality assessment from the "2006 Annual Summary Hawaii Air Quality Data".

The diesel engine and diesel engine generator's stack parameters and emission rates are as follows:

Equipment	Height (m)	Diameter (m)	Velocity (m/s)	Flow Rate (m³/s)	Exhaust Temperature (°K)
275 hp	6	0.127	69.2	0.88	937
360 kW	6	0.12	120	1.36	685

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Table 10				
Stack Emission Rates (g/sec)				
	NOx	SO₂	CO	PM₁₀
275 hp	1.152	0.135	0.248	0.081
360 kW	1.847	0.217	0.398	0.130

The results of the Ambient Air Quality Impact Assessment are shown below in Table 11.

Table 11						
COMPLIANCE WITH AMBIENT AIR QUALITY STANDARDS						
275 hp Diesel Engine and 310 kW Diesel Engine Generator						
Air Pollutant	Averaging Time	Predicted Air Quality Impacts (micrograms/ m³)			Hawaii Air Standard ^a (micrograms/ m³)	Percent Of Standard
		DE and DEG	Background ^b	Total		
Nitrogen Dioxide NO ₂	Annual ^d	50	9	59	70	84
Sulfur Dioxide SO ₂	3-hour	805	405	1210	1,300	93
	24-hour	222	96	318	365	87
	Annual	6	9	15	80	19
Carbon Monoxide CO	1-hour	2,019	1938	3957	10,000	40
	8-hour	852	1211	2063	5,000	41
Particulate Matter PM ₁₀	24-hour ^c	126	23	149	150	99
	Annual	3	13	16	50	32

^a In accordance with HAR, Chapter 11-59, §11-59-4, " concentrations specified for a calendar year or a calendar quarter shall not be exceeded. Limiting concentrations specified for one-hour, three-hour, eight-hour and twenty-four-hour periods shall not be exceeded more than once in a calendar quarter.

^b NO₂ background data taken from Kapolei, Oahu. NO₂ = NO_x
 SO₂ background data for 3-hr, 24-hour, and annual, taken from Hilo, Hawaii
 CO background annual taken from Honolulu, Oahu
 PM₁₀ background data for 24-hour and annual, taken from Honolulu, Oahu

^c Twenty-four hour concentration is reduced by a factor of 22/24 to account for a 22 hour per day operating limit for the new diesel engine and the new diesel engine generator.

^d Annual concentration is reduced by a factor of (2,500 / 8760) to account for a 2,500 hour per year operating limit for the new diesel engine and new diesel engine generator

Significant Permit Conditions

1. The added jaw and cone crushers are subject to Title 40 Code of Federal Regulations (CFR) part 60 – Standards of Performance for New Stationary Sources (also known as New Source Performance Standards NSPS), Subparts A and OOO.

Purpose: This federal standard applies to portable crushed stone plants with capacities greater than 150 tph which commence construction, reconstruction, or modification after August 31, 1983.

2. A non-resetting hour meter shall be installed on the 275 hp diesel engine and the 360 kW diesel engine generator for recording the 2,500 limiting hours of operation.

Purpose: The limiting hours of operation on the de and deg represent the hours of operation on the jaw and cone crushers which will limit PM and PM₁₀, and PM_{2.5} emissions.

3. The engine shall only be fired on fuel oil no. 2 with a maximum sulfur content of 0.5% by weight.

Purpose: 0.5 percent sulfur content will limit sulfur emissions. Emission calculations and the air quality assessment are based on use fuel oil no. 2.

4. Reasonable efforts shall be taken to control fugitive emissions from the stone processing plant. This includes the use of water sprays at all crushers, transfer points, loading operations, unpaved roads, and aggregate stockpiles.

Purpose: Control PM and PM₁₀, and PM_{2.5} emissions.

Conclusion

Based on the information submitted by the applicant, it is the determination of the Hawaii Department of Health, that the proposed project will be in compliance with 40 CFR Part 60, Subpart A and Subpart OOO, and the HAR Chapter 11-60.1, and will not cause or contribute to a violation of any Hawaii State or National ambient air quality standards.

Conservatism was applied to the estimated emissions from this stone crushing plant. The actual emissions from the crushing of Hawaii's basalt will be less than the EPA's AP-42 emission factors for crushing limestone.

Emission calculations are used from the previous owner's stone processing plant review. Willocks primary business is construction, so the Mobile Crushing Plant will not be operating in all of Willocks job projects.

PROPOSED

The Hawaii DOH intends to issue this CSP, subject to permit conditions, public comments and EPA review.

glenn nagamine
June 2008