

PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT (CSP) NO. 0475-01-CT
Application for Renewal No. 0475-03

Applicant: CTS Earthmoving, Inc.

Facility: 357 TPH crushing and screening plant

Location: Various Temporary Sites, State of Hawaii

Mailing Address: P.O. Box 470
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Equipment: The 357 TPH crushing and screening plant consists of the following:

- a. Aggregate Machinery, Inc. vibrating grizzly feeder, model no. 4218-G4-VGF-C2729, serial no. 10163;
- b. 178-357 TPH Kolberg-Pioneer primary jaw crusher, model no. 3042JVDH-D2853, serial no. 404793 (30" x 42" jaw size);
- c. 400 TPH Cedarapids Canica VSI crusher, model no. 2100, serial no. 28D0186;
- d. 270-380 TPH ElJay/Cedarapids secondary cone crusher, model no. 54 ElJay standard, serial no. 863 (54" cone head);
- e. ElJay/Cedarapids three-deck screen, model no. FSG 6163-32, serial no. 34C0689;
- f. Balzer Pacific Equipment Company, JCI three-deck screen, model no. JCI6203-32LP, serial no. 02LP12E32, plant identification no. J-14018;
- g. Various conveyors, including an Aggregate Machinery, Inc. portable conveyor, model no. 3650CL15-C2216, serial no. 10115-3;
- h. Water spray system;
- i. 362 hp Caterpillar diesel engine, model no. 3306, serial no. 64Z28992 servicing the primary jaw crusher, feeder, and associated conveyors;
- j. 692 hp Caterpillar diesel engine, model no. C-16, serial no. BFM00625, servicing the 400 TPH VSI crusher; and
- k. 519 hp Caterpillar diesel engine generator, model no. 3406, serial no. 4JK00051; and
- l. 174 bhp Caterpillar diesel engine generator, model no. 3304, serial no. 9HK00332.

Responsible

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1. Background

- 1.1 CTS Earthmoving, Inc. has applied for a renewal to its temporary covered source permit for operating a 357 TPH crushing and processing plant. The plant is currently located inside McClean Quarry which is next to Honokohau Quarry. McClean Quarry is closer to Kona than Honokohau Quarry when traveling south on Highway 19. The crushing and screening plant is restricted to 2,080 hours per year. Operation of the plant is limited by the amount of hours the diesel engines operate. There are no changes in equipment or operating procedures and the facility will continue to limit its operation to a maximum 2,080 hours per year. The standard industrial classification code (SICC) for this facility is 1429 (Crushed and Broken Stone, Not Elsewhere Classified). Although no changes were proposed, this application review accounts for and corrects the following equipment discrepancies:
- a. During a July 2006 site inspection, a 174 hp diesel engine generator, not included in the list of permitted equipment, was found to have been operating at the facility.
 - b. Manufacturer's equipment name plate indicated that one of the permitted diesel engine generators, previously rated at 500 hp, actually has a capacity of 692 hp.
 - c. Actual stack heights for some of the equipment were lower than that reported in the previous permit applications for air modeling assessments.
- 1.2 CTS Earthmoving, Inc. correspondence dated August 23, 2004 indicated that the model number 3042JVDH-D2853 primary crusher was replaced with another jaw crusher because the central shaft on the existing jaw broke. The new serial number for the primary crusher is 404793.
- 1.3 A site visit of the facility on July 20, 2006 disclosed the following [see Enclosure(1)]:
- a. McClean Quarry is located at the end of the road that intersects with Highway 19. The road is adjacent to the first Chevron gas station along Highway 19 when traveling from the airport to Kona. For information, the most current location change approval for plant equipment as of July 9, 2004 is for Na Hale O Keauhou, in the vicinity of Keauhou Shopping Center.
 - b. The water spray system for plant equipment was effective in controlling fugitive dust. There were some fugitive emissions from the primary crusher.
 - c. The Balzer Pacific Equipment Company JCI three-deck screen was model no. JCI6203-32LP instead of JCI16203-32LP.
 - d. There were no visible emissions from the 519 hp and 362 hp diesel engines during operation to power the cone and jaw crushing plants, respectively. There was no stack for the 519 hp diesel engine generator. The manufacturer's plate for the diesel engine generator designated with 500 hp showed the unit to be a 519 hp engine with model number 3406 and serial number 4JK00051. Previous modeling for the 519 hp diesel engine generator was based on a source with 5 meter stack height. Consultant for CTS Earthmoving, Inc. was contacted to have a stack for the engine installed with minimum 5 meter (16.5 foot) height.

- e. A 174 bhp Caterpillar diesel engine generator was observed at the site that is used to power an air conditioning system for the plant's control tower. This equipment was not listed in the permit. The serial number for the unit was 9HK00332. Its model number was 3304 and there was no stack for the engine. Consultant for CTS Earthmoving, Inc. was contacted to have a stack for the engine installed with minimum 5 meter (16.5 foot) height.
 - f. The Caterpillar diesel engine model number C-16 with serial number BFM00625 servicing the vertical shaft impact (VSI) crusher was rated at 692 hp instead of 500 hp based on information from the manufacturer's name plate. The engine was previously modeled assuming a stack height of 18 feet. However, the stack looked as if it were about 10 feet high.
 - g. CTS Earthmoving, Inc. indicated that McClean Quarry is anticipated to provide rock for another six years. They have been crushing in the quarry for about three years.
- 1.4 Hawthorne Power Systems was contacted to determine why the manufacturer's name plate horse power rating for the 692 hp diesel engine and 174 bhp diesel engine generator were different than that indicated by the manufacturer's specifications. Specifications indicated the 692 hp engine to be 500 hp and the 174 bhp engine to be 196 hp. Hawthorne Power Systems personnel could not provide an explanation. As such, the worst-case rating was used to determine emissions.
- 1.5 Permit review under file number 0505-01 for Grace Pacific Rocky Mountain Prestress, LLC indicated the following information for a model number 3304 Caterpillar diesel engine generator:
- a. Exhaust flow rate is 980 cfm;
 - b. Exhaust temperature is 1,053 °F; and
 - c. Stack inside diameter is 3.5 inches.
- 1.6 Specifications for trailers that house the 519 hp and 174 bhp diesel engine generators indicate the dimensions of the XQ350 trailer to be 21' x 8' x 12' and the XQ125 trailer to be 18' x 6' x 9'.
- 1.7 Measurements by CTS Earthmoving personnel disclosed the following stack heights:
- a. 14'-2" for stack of 692 hp diesel engine servicing VSI crusher.
 - b. 21'-8" for stack of 362 hp diesel engine servicing primary jaw crusher.
 - c. 10' for trailer stacks servicing the 519 hp and 174 hp diesel engine generators.
- 1.8 As indicated by the applicant's consultant, a 2,080 hr/yr operating limit for the 174 bhp diesel engine generator is acceptable.

2. Applicable Requirements

- 2.1 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
- Subchapter 8 - Standards of Performance for Stationary Sources
 - 11-60.1-161(27) Standards of Performance for Non-metallic Mineral Processing Plants
- Subchapter 10 – Field Citations

- 2.2 40 Code of Federal Regulations (CFR) Part 60 – New Source Performance Standards (NSPS), Subpart OOO, Standards of Performance Standards of Performance for Non-metallic Mineral Processing Plants is not applicable to the cone crusher with serial number 863 and three-deck screen with serial number 34C0689 because this equipment was manufactured prior to 1983. Manufacturing date for the cone crushing plant is 1976. Subpart OOO only applies to the crushers, conveyors, and screens manufactured after 1983.
- 2.3 The facility is not a major source for hazardous air pollutants (HAPs) and is not subject to National Emissions Standards for Hazardous Air Pollutants (NESHAPS) or Maximum Achievable Control Technology (MACT) requirements under 40 CFR, Parts 61 and 63.
- 2.4 The purpose of Compliance Assurance Monitoring (CAM) is to provide reasonable assurance that compliance is being achieved with large emission 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 greater than the major source level; and (5) not otherwise be exempt from CAM. CAM is not applicable because this facility is not a major source.
- 2.5 Prevention of Significant Deterioration (PSD) review applies to new major stationary sources and major modifications to these types of sources. The facility is not a major source for any single air pollutant. As such, PSD review is not required.
- 2.6 Annual emissions reporting will be required because this plant is a covered source.
- 2.7 The consolidate emissions reporting rule (CERR) is not applicable because emissions from the facility do not exceed reporting levels pursuant to 40 CFR 51, Subpart A (see table below).

CERR APPLICABILITY			
Pollutant	Facility Emissions (2,080 hr/yr with water sprays and water truck)	CERR Triggering Levels (TPY)	
		3 year cycle (type A sources)	1 year cycle (type B sources)
PM ₁₀	14.0	≥ 100	≥ 250
SO ₂	6.4	≥ 100	≥ 2,500
NO _x	47.6	≥ 100	≥ 2,500
VOC	2.4	≥ 100	≥ 250
CO	6.5	≥ 1,000	≥ 2,500

2.8 A best available control technology (BACT) analysis is required for new sources or modifications to existing sources that would result in a net significant emissions increase as defined in HAR, Section 11.60.1-1. There were no modifications proposed for this permit renewal specifically. Although, during the renewal inspection of this facility found that the diesel engine servicing the VSI crushing plant was 692 hp instead of 500 hp. Also, the applicant was operating a smaller 174 bhp diesel engine for servicing the control tower's air conditioning system. These changes do not exceed 40 TPY NO_x worst-case. As such, a BACT analysis is not applicable.

2.9 The facility is a synthetic minor source because operational limits and controls for the plant restrict air pollutants below major source thresholds for NO_x.

3. Insignificant Activities

3.1 Insignificant activities identified by the application are listed as follows:

- a. 250 gallon fuel storage tank servicing the 362 hp diesel engine is an insignificant activity in accordance with HAR §11-60.1-82(f)(1).
- b. 200 gallon fuel storage tank servicing the 519 hp diesel engine generator is an insignificant activity in accordance with HAR §11-60.1-82(f)(1).
- c. An approximate 200 gallon fuel storage tank servicing the 692 hp diesel engine is an insignificant activity in accordance with HAR §11-60.1-82(f)(1).
- d. 140 gallon fuel storage tank servicing the 174 bhp diesel engine generator is an insignificant activity in accordance with HAR §11-60.1-82(f)(1).
- e. A 3.5 hp Briggs & Stratton gas engine is an insignificant activity pursuant to HAR§11-60.1-82(f)(2).

4. Alternate Operating Scenarios

4.1 The permit allows replacement of the primary diesel engine with another unit of same size or smaller than the primary unit with equal or lower emissions.

5. Air Pollution Controls

5.1 The plant is equipped with a water spray system with water spray bars at:

- a. Primary jaw crusher;
- b. Conveyor-to-conveyor transfer point between primary crusher and three-deck screen;
- c. Conveyor transfer below cone crusher;
- d. VSI crusher;
- e. Each three-deck screen; and
- f. Discharge end of each stacking conveyor for transfer to stockpile.

5.2 A water spray truck will be used to control fugitive dust at each work site for the crushing and screening plant.

6. Project Emissions

6.1 Emissions of NO_x, CO, VOC, PM, PM₁₀, PM_{2.5}, and HAPs from diesel engines less than 600 hp were based on emission factors from AP-42, Section 3.3 (10/96), Gasoline and Diesel Industrial Engines. A mass balance calculation was used to determine SO₂ emissions based on the maximum allowable fuel sulfur content of 0.5% by weight and maximum fuel consumption at 100% load. It was assumed that 96% of the total particulate was PM₁₀ and 90% of the total particulate was PM_{2.5} based on AP-42, Appendix B.2, Table B.2-2 for gasoline and diesel fired internal combustion engines. An operation limit of 2,080 hours per year was assumed for the diesel engines. Emission estimates are shown in Enclosure (2) and summarized below.

DIESEL ENGINES							
Pollutant	Engine Emission Rate lb/hr (g/s)			Engine Emissions (TPY)			
	Engine			2,080 hours			8,760 hours
	362 hp	519 hp	174 hp	362 hp	519 hp	174 hp	All Engines
SO ₂	0.979 (0.124)	1.724 (0.218)	0.709 (0.090)	1.0	1.8	0.7	14.7
NO _x	8.339 (1.053)	14.681 (1.854)	6.042 (0.763)	8.7	15.3	6.3	127.6
CO	1.796 (0.227)	3.163 (0.399)	1.302 (0.164)	1.9	3.3	1.3	27.4
VOC	-----	-----	-----	0.7	1.2	0.5	10.1
PM	-----	-----	-----	0.6	1.1	0.5	9.2
PM ₁₀	0.586 (0.074)	1.032 (0.130)	0.425 (0.054)	0.6	1.1	0.4	8.8
PM _{2.5}	-----	-----	-----	0.6	1.0	0.4	8.4
HAPs	-----	-----	-----	0.013	0.007	0.009	0.164

6.2 Emissions from the 692 hp diesel engine, serial number BFM00625, powering the VSI crushing plant were based on emission factors from AP-42, Section 3.4 (10/96), Large Stationary Diesel and All Stationary Dual-fuel Engines. The horse power rating from the manufacturer's name plate was used to determine emissions because specifications for the engine, based on the unit's serial number, indicated a lower 500 hp rating. It was assumed that 96% of the total particulate was PM₁₀ and that 90% of the total particulate was PM_{2.5} based on AP-42, Appendix B.2, Table B.2-2 for gasoline and diesel fired internal combustion engines. An operation limit of 2,080 hours per year was assumed

for the engine. Emission estimates are shown in Enclosure (2) and summarized below.

DIESEL ENGINE				
Pollutant	Engine Emission Rate lb/hr (g/s)		Engine Emissions (TPY)	
	Engine		2,080 hours	
	692 hp		692 hp	
SO ₂	2.799 (0.353)		2.9	12.2
NO _x	16.608 (2.097)		17.3	72.9
CO	3.806 (0.481)		4.0	16.8
VOC	-----		0.5	2.1
PM	-----		0.5	2.1
PM ₁₀	0.465 (0.059)		0.5	2.1
PM _{2.5}	-----		0.5	2.1
HAPs	-----		0.008	0.032

6.3 Particulate emissions from the crushing and screening plant were based on emission factors from AP-42, Section 11.19.1 (8/04), Crushed Stone Processing and Pulverized Mineral Processing. The controlled emission factors were used for crushing, screening, and conveyor transfer points. It was assumed that 51% PM was PM₁₀ and 15% PM was PM_{2.5} based on information from AP-42, Appendix B.2.2. Uncontrolled emission factors were used for truck loading and unloading operations. A 70% control efficiency for water sprays was applied to determine emissions using the uncontrolled emission factors. A 2,080 hr/yr operation limit was also applied to determine emissions. The rated capacity of the equipment was used to determine maximum potential emissions. Emissions from the crushing and screening plant are shown in Enclosure (2) and summarized below.

357 TPH CRUSHING AND SCREENING PLANT		
Pollutant	Emissions (TPY)	Total Plant Emissions (TPY)
	2,080 hr/yr with water sprays	8,760 hr/yr with water sprays
PM	3.9	16.4
PM ₁₀	1.3	5.5
PM _{2.5}	0.2	0.8

6.4 Particulate emissions from stockpiles were determined by using emission factors from AP-42, Section 13.2.4 (1/95), Aggregate Handling and Storage Piles. Emissions were based on the 357 TPH plant capacity and 2,080 hr/yr operation. Emissions were also based on a 10.9 mph average wind speed (data from Hilo, Honolulu, Kahului, and Lihue), K value for PM₁₀ of 0.35, K value for PM of 0.74, K value for PM_{2.5} of 0.11, and a mean 0.7% moisture content for stone quarrying and processing. A 70% control efficiency was applied to account for use of a water truck to control fugitive dust. Emissions are shown in Enclosure (3) and summarized in the table below.

STORAGE PILES			
Pollutant	Emission Factor (lb/ton)	Emission Rate (TPY)	
		2,080 hr/yr with water truck	8,760 hr/yr with water truck
PM	0.028	3.2	13.5
PM ₁₀	0.013	1.5	6.3
PM _{2.5}	0.004	0.4	1.7

PROPOSED

- 6.5 Emissions from vehicle travel on unpaved roads were calculated using the emission factor equation for vehicles traveling on unpaved surfaces at industrial sites. The equation was obtained from AP-42, Section 13.2.2 (12/03) Unpaved Roads. Equation (1a) emission factor was extrapolated to annual average uncontrolled conditions using Equation (2). Emission rates were based on the following assumptions:
- A distance of 8,840 vehicle miles traveled per year for the 357 TPH plant based on 2,080 hr/yr operation, an average truck capacity of 21 tons, and a 0.25 mile two way travel distance for the trucks;
 - A k value for PM, PM₁₀, and PM_{2.5} of 4.9, 1.5, and 0.23, respectively based on data for industrial roads;
 - An a value for PM, PM₁₀, and PM_{2.5} of 0.7, 0.9, and 0.9, respectively based on data for industrial roads;
 - A b value for PM, PM₁₀, and PM_{2.5} of 0.45 based on data for industrial roads;
 - An s (silt content of road) value of 3.9% based on information from AP-42, Section 13.2.2 – Unpaved Roads Related Information
www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html;
 - A W (mean vehicle weight) value of 26.5 tons;
 - A p (# of days with 0.01" of rain/year) value of 171 based on available data between years 1956 and 2004 from the Opihihale2 station recording climate parameters;
 - A 70% control efficiency was applied to account for use of a water truck;
 - Vehicle travel emissions are listed as follows:

VEHICLE TRAVEL			
Pollutant	Emission Factor (lb/VMT)	Emissions (TPY)	
		2,080 hr/yr with water truck	8,760 hr/yr with water truck
PM	3.158	4.2	17.7
PM ₁₀	0.885	1.2	5.1
PM _{2.5}	0.107	0.3	1.3

- 6.6 Total yearly emissions from operating the crushing and screening plant are listed below as follows:

TOTAL EMISSIONS		
Pollutant	Potential Emissions (TPY) (2,080 hr/yr with water sprays and water truck)	Potential Emissions (TPY) (8,760 hr/yr with water sprays and water truck)
SO ₂	6.4	26.9
NO _x	47.6	200.5
CO	6.5	44.2
VOC	2.4	12.2
PM	14.0	58.9
PM ₁₀	6.6	27.8
PM _{2.5}	3.4	14.3
Total HAPS	0.047	0.196

7. Air Quality Assessment

- 7.1 An ambient air quality impact analysis (AAQIA) was performed for the 174 bhp and 692 hp diesel engines because the 174 bhp engine was not permitted and emissions increased for the 692 hp engine because the unit was previously rated at 500 hp. The remaining diesel engines were assumed to be part of background concentrations for the Kona area. Assumptions for the model included:
- Flat terrain;
 - No simple elevated terrain because sources are inside quarry with approximate 50 foot rock walls along its perimeter and stack heights are lower than the quarry walls;
 - Complex terrain;
 - Rural dispersion parameters;
 - Wake affects from the jaw crushing plant (13' x 20' x 8');
 - Default meteorology;
 - EPA scaling factors of 0.9, 0.7, and 0.4 for the 3-hour, 8-hour, and 24-hour concentrations, respectively; and
 - State of Hawaii scaling factor of 0.2 for the annual concentrations.
- 7.2 An AAQIA of the diesel engines without stacks using modeling guidance for volume sources estimated excessively high pollutant impacts in vicinities outside the quarry. Suggested procedures for estimating impacts for volume sources calculate a lateral dimension for the source by dividing the length by 4.3. A vertical dimension for the source is determined by dividing the height by 2.15.
- 7.3 The quarry is approximately 200 meters in diameter and is restricted from public access. Flat terrain receptors were initially located at 200 meters. Flat terrain receptors were then extended to 50,000 meters using Screen3 default settings. Complex terrain receptors were located at the following height and distances from each source (200 meter distance/15.24 meter height, 260 meter distance/21.34 meter height, 320 meter distance/27.43 meter height, and 420 meter distance/34.53 meter height). It was assumed that the rock walls of the quarry were about 50 feet (15.24 meters) high and each source was located at the center of the quarry.
- 7.4 The following background concentrations were used for the assessment:
- PM₁₀ – collected in 2004 from the Hilo air quality monitoring station (air monitoring station that is closest to Kona with PM₁₀ data).
 - NO_x - collected in 2004 from the Kapolei air quality monitoring station (air monitoring station with NO_x data that is most conservative of current data from another island).
 - CO – collected in 2004 from the University air quality monitoring station (air monitoring station that is most conservative of current data from another island).
 - SO₂ – collected in 2004 from the Kona air quality monitoring station.
- 7.5 The table below lists the emission rates and stack parameters used in the analysis. Stack temperature and flow rate for the 692 hp diesel engine were based on those specified for this unit rated at 500 hp which may be more conservative.

SOURCE	STACK	EMISSION RATES (g/s)				STACK PARAMETERS			
		NO _x	SO ₂	CO	PM ₁₀	Height (ft)	Temp. °K (°F)	Dia. (in)	Flow Rate (ft ³ /min)
174 bhp Engine	1	0.763	0.090	0.164	0.054	10	840 (1,053)	3.5	980
519 hp Engine	2	1.854	0.218	0.399	0.130	10	817 (1,011)	5	2,553
692 hp Engine	3	2.097	0.353	0.481	0.059	14.2	719 (835)	5	3,101

7.6 The table below shows the normalized modeling results and conversion factors. The bold entries are the model outputs.

Simple Terrain					Complex Terrain Valley				Complex Terrain Simple			
Averaging Period	Factor	Normalized Output (ug/m ³ per g/s)			Factor	Normalized Output (ug/m ³ per g/s)			Factor	Normalized Output (ug/m ³ per g/s)		
		174 bhp	519 hp	692 hp		174 bhp	519 hp	692 hp		174 bhp	519 hp	692 hp
1-hour	N/A	614.8	309.0	206.8	0.25	193.2	193.2	187.2	0.4	600.0	293.5	255.5
3-hour	0.9	553.3	278.1	186.1	0.9	173.9	173.9	168.5	0.9	540.0	264.2	230.0
8-hour	0.7	430.4	216.3	144.8	0.7	135.2	135.2	131.0	0.7	420.0	205.5	178.9
24-hour	0.4	246.0	123.6	82.7	N/A	48.3	46.3	46.8	N/A	240.0	117.4	102.2
Annual	0.2	123.0	61.8	41.4	0.2	38.6	38.6	37.4	0.2	120.0	58.7	51.1

7.7 Results from the AAQIA of the 174 bhp, 519 hp, and 692 hp diesel engines, shown in the table below, indicate compliance with the ambient air quality standards.

PREDICTED AMBIENT AIR QUALITY IMPACTS								
AIR POLLUTANT	AVERAGING TIME	IMPACT (ug/m ³)			BACKGROUND (ug/m ³)	TOTAL IMPACT (ug/m ³)	AIR STANDARD	PERCENT STANDARD
		174 bhp	519 hp	692 hp				
SO ₂	3 – Hour	50	61	81	55	247	1,300	19
	24 – Hour	22	27	36	21	106	365	29
	Annual ^a	3	15	4	8	27	80	34
NO ₂	Annual ^{a,b}	17	20	19	9	65	70	93
CO	1 – Hour	101	123	122	3,762	4,108	10,000	41
	8 – Hour	71	86	86	2,323	2,566	5,000	51
PM ₁₀	24 – Hour	13	16	6	29	64	150	42
	Annual ^a	2	2	1	26	31	50	62

a: Annual concentration reduced by a factor of 2,080/8,760 to account for diesel engine hour limitation.

b: Total impact reduced by 25% to account for partial conversion of NO_x to NO₂. Impact = impact (0.75)

8. Significant Permit Conditions

8.1 Plant operating hours shall not exceed 2,080 hours in any rolling twelve (12) month period.

Reason for 8.1: The applicant has proposed a maximum 2,080 hours per year operation for the plant. The mobile crushing and screening plant's operating hours are controlled by operating hours of the diesel engines. The diesel engines will be equipped with an hour meter for monitoring the operating hours.

8.2 Incorporate minimum stack height requirements for the diesel engines and diesel engine generators.

Reason for 8.2: The AAQIA was based on stack heights reported by applicant.

8.3: 40 CFR, Part 60, Subpart OOO provisions are applicable to the jaw crusher and conveyors built after 1983.

Reason for 8.2: Incorporated into the permit based on applicability to federal standards as indicated in Paragraph 2.2.

9. Conclusion and Recommendation

Actual emissions from this facility should be lower than estimated. Maximum potential emissions were based on worst-case conditions assuming maximum rated capacity of the diesel engines and stone processing plant equipment. Actual crushing capacity will vary depending on product size and the type of material, but will likely be much lower than the maximum rated capacity. Calculations were also based on 2,080 hours per year operation. The permit requires the use of a water spray system for compliance with state and federal fugitive emission regulations. The permit also requires the use of a water truck to control fugitive dust at sites where the plant is located. Site investigation disclosed the water spray system to work effectively in controlling fugitive dust. Recommend issuance of the temporary covered source permit renewal subject to the significant permit conditions, 30-day public comment period, and 45-day review by EPA.

September 18, 2006
Mike Madsen