

Temporary Covered Source Review Summary (Renewal)

Application No: 0040-15
Permit No.: 0040-01-CT
Applicant: Maui Paving, LLC
Facility Title: 186 tph Hot Mix Asphalt Concrete Plant
Location: Camp 10, Ameron Quarry, Puunene, Maui
Responsible Official: Darrell Goo
Senior Vice President of Operations
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Plant Manager: Norman Shinno
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(808) 674-8383
Mailing Address: Maui Paving, LLC
P.O. Box 78
Honolulu, Hawaii 96810
Application Date: November 28, 2011

Proposed Project:

SICC: 2951(Asphalt Paving Mixtures and Blocks)

The asphalt plant produces hot mix asphalt from virgin aggregate, reclaimed asphalt pavement (RAP), and liquid asphalt cement. Virgin aggregate is transferred from storage piles to cold feed storage bins by front-end loaders. From the storage bins, the aggregate falls onto conveyors, which transport the aggregate to a vibrating screen and then to the drum mixer. Front-end loaders also transfer RAP from storage piles to a separate feed bin. The RAP is transported to the lump breaker and then to the drum mixer by conveyors. Liquid asphalt is added to the aggregate and RAP blends in the drum mixer. The final product is transported from the drum mixer to the storage silos by a drag conveyor.

In this renewal application, the applicant proposes to add the previously permitted (pre-2008) 725 kW Cummins/Onan DEG as an emergency DEG with a maximum operation of 500 hours per any rolling twelve-month (12-month) period. The existing maximum operation limit of 2,000 hours will also apply to the sum of the main and emergency DEGs. The applicant also proposes to amend the permit to include the Astec lump breaker, which was inadvertently removed from the permit issued on December 6, 2002, under Application No. 0040-07. No other changes have been made in the design or operation of the hot mix asphalt plant as proposed in the initial and subsequent applications.

PROPOSED

A check for \$500.00 was processed for a renewal of a non-toxic temporary covered source permit. This permit renewal will supersede CSP No. 0040-01-CT dated May 30, 2007 and amended on February 7, 2008 in its entirety.

Equipment Description:

This permit encompasses the following equipment and associated appurtenances for the 186 tph portable drum mix asphalt concrete plant:

- a. 186 tph Astec Industries parallel flow drum mixer/dryer (model no. PDM-630-C, serial no. 87-135);
- b. Astec Industries baghouse (model no. PBH-30, serial no. 87-135, with 18 oz Nomex bags);
- c. 725 kW Cummins diesel engine generator [DEG] (model no. QST30-G5 NR2, serial no. H060957555);
- d. 1.25 MMBtu/hr HEATEC hot oil heater (model no. HCS-100, serial no. C97-110);
- e. Astec Industries lump breaker (model no. 137-1824, serial no. 86-137);
- f. Astec Industries four (4) compartment cold feed system with integrated Specmaker scalping screens (model no. PCF-1012-4SS, serial no. 87-135, 15 ton capacity);
- g. Astec Industries drag conveyor (model no. DC 3695, serial no. 03-001-4204);
- h. Astec Industries coater (serial no. 83-134, 5' L x 2' W x 3' H);
- i. Two (2) asphalt concrete storage silos (200 ton capacity);
- j. 30 ton reclaimed asphalt pavement (RAP) bin;
- k. Various conveyors; and
- l. 725 kW Cummins/Onan emergency diesel engine generator (model no. KTA38-G2, serial no. E950577135).

Air Pollution Controls:

1. The 725 kW Cummins diesel engine generator burns no. 2 diesel fuel with a maximum sulfur content of 0.0015% by weight for controlling SO₂ emissions.
2. The 725 kW Cummins/Onan emergency diesel engine generator burns no. 2 diesel fuel with a maximum sulfur content of 0.5% by weight for controlling SO₂ emissions.
3. Baghouse for asphalt concrete plant to control PM emissions.
4. Drum mixer dryer burns no. 2 diesel fuel with a maximum sulfur content of 0.5% by weight for controlling SO₂ emissions.
5. Hot oil heater burns no. 2 diesel fuel with a maximum sulfur content of 0.5% by weight for controlling SO₂ 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
- 11-60.1.37 Process Industries
- 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

Subchapter 9 – Hazardous Air Pollutant Sources

Subchapter 10 - Field Citations

Code of Federal Requirements (CFR)

40 CFR Part 60 - Standards of Performance for New Stationary Sources (NSPS)

Subpart A - General Provisions

Subpart I – Standards of Performance for Hot Mix Asphalt Facilities

This facility is subject to Subpart I since it was constructed after June 11, 1973.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The 725 kW Cummins diesel engine generator was manufactured after 2007 and is a non-emergency stationary compression ignition internal combustion engine with a displacement of less than 30 liters per cylinder and therefore is subject to Subpart IIII. The subpart states that the DEG must comply with the manufacturer's emission standards described in 40 CFR §60.4201. The Tier 2 DEG is certified to meet these standards.

The 725 kW Cummins/Onan emergency diesel engine generator was manufactured before 2007 and is an existing stationary compression ignition internal combustion engine with a displacement of less than 30 liters per cylinder. This DEG is exempt from Subpart IIII.

40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories (Maximum Achievable Control Technologies (MACT) Standards)

Subpart A - General Provisions

Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. (RICE NESHAP)

The 725 kW Cummins diesel engine generator was manufactured after June 12, 2006 and is a non-emergency stationary compression ignition RICE, and

is located at an area source of HAPs. The Tier 2 DEG is subject to Subpart ZZZZ.

The 725 kW Cummins/Onan emergency diesel engine generator was manufactured before June 12, 2006, is greater than 500 hp, is an emergency stationary compression ignition RICE, and is located at an area source of HAPs. This includes installing and operating a non-resettable hour meter, performing and documenting regular maintenance and inspections according to Table 2d of Subpart ZZZZ, and following the provisions for emergency stationary RICE per 40 CFR §63.6640(f).

Non-Applicable Requirements:

40 CFR Part 61 - National Emission Standard for Hazardous Air Pollutants (NESHAPS) is not applicable because there is no standard for AC plants.

Prevention of Significant Deterioration (PSD):

Prevention of Significant Deterioration (PSD) is not applicable since this is not a major stationary source.

Best Available Control Technology (BACT):

A Best Available Control Technology (BACT) analysis is required for new covered sources or significant modifications to covered sources that have the potential to emit or increase emissions above significant levels as defined in HAR §11-60.1-1. The proposed modification with the existing 725 kW diesel engine generator (1500 hrs/yr) operating with the 725 kW emergency diesel engine generator (500 hrs/yr) compared with the existing 725 kW diesel engine generator operating alone (2000 hrs/yr) results in a net emissions increase that is not significant. Therefore BACT does not apply.

Pollutant	Proposed Potential Emissions ¹ (tpy)	Existing Potential Emissions ² (tpy)	Net Emissions Change (tpy)	Significant Level (tpy)	Significant?
NO _x	13.8	9.23	4.57	40	no
SO ₂	2.85E-05	2.85E-05	0	40	no
CO	1.45	1.06	0.39	100	no
PM	0.28	0.28	0	25	no
PM ₁₀	0.23	0.23	0	15	no
VOC	0.21	0.21	0	40	no

¹ Based on emissions of 725 kW Cummins Main DEG (1500 hrs/yr) + 725 kW Cummins/Onan Emergency DEG (500 hrs/yr)

² Based on emissions of 725 kW Cummins Main DEG (2000 hrs/yr)

Compliance Assurance Monitoring (CAM) Applicability:

Compliance Assurance Monitoring (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 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 precontrol

emissions that are greater than the major source level [>100 tpy]; and (5) not otherwise be exempt from CAM. CAM is not applicable to the plant since item 1 does not apply.

Air Emissions Reporting Requirements (AERR):

40 CFR Part 51, Subpart A – Air Emissions Reporting Requirements, is based on the emissions of criteria air pollutants from Type A and B point sources (as defined in 40 CFR Part 51, Subpart A), that emit at the AERR triggering levels as shown in the table below. This facility does not emit at the AERR triggering levels. Therefore, AERR is not applicable. The Clean Air Branch also requests annual emissions reporting for all covered sources and from those facilities that have facility-wide emissions of a single air pollutant exceeding in-house triggering levels. Annual emissions reporting is required for this facility because it is a covered source.

Pollutant	Total Facility Emissions ¹ (tpy)	AERR Triggering Levels ¹ (tpy)		In-House Total Facility Triggering Levels ¹ (tpy)
		1-yr Reporting Cycle (Type A Sources)	3-yr Reporting Cycle (Type B Sources)	
VOC	11.44	≥ 250	≥ 100	≥ 25
PM	16.68	n/a	n/a	≥ 25
PM ₁₀ /PM _{2.5}	3.38/0.44	≥ 250	≥ 100	≥ 25
NO _x	24.02	$\geq 2,500$	≥ 100	≥ 25
SO _x	2.05	$\geq 2,500$	≥ 100	≥ 25
CO	26.10	$\geq 2,500$	$\geq 1,000$	≥ 250
HAPs (total)	1.68	n/a	n/a	≥ 5

¹ Based on potential emissions

Insignificant Activities:

1. One (1) 60 kW (standby)/55 kW (prime) Cummins diesel engine generator; insignificant per HAR §11-60.1-82(f)(2)
2. One (1) 500 gallon diesel fuel tank; insignificant per HAR §11-60.1-82(f)(1)
3. One (1) 2,000 gallon diesel fuel tank; insignificant per HAR §11-60.1-82(f)(1)
4. One (1) 9,000 gallon diesel fuel tank; insignificant per HAR §11-60.1-82(f)(1)
5. Two (2) 25,000 gallon asphalt storage tanks; insignificant per HAR §11-60.1-82(f)(1)

Alternative Operating Scenarios:

Temporary replacement of 725 kW Cummins main diesel engine generator with a diesel engine generator similar in size with equal or lesser emissions with operations not to exceed twelve (12) consecutive months.

Major Source Applicability:

A major source as defined in HAR §11-60.1-1 has the potential to emit any HAP of 10 TPY or more, or 25 TPY or more of any combination of HAPs, or 100 TPY or more of any air pollutant. Since calculated emissions do not meet these limits, this facility is not classified as a major source.

Synthetic Minor Applicability:

A synthetic minor source is a facility that is potentially major (as defined in HAR §11-60.1-1), but is made nonmajor through federally enforceable permit conditions (e.g., limiting the facility's hours of operation and limiting the facility's production rate). This facility is a synthetic minor based on potential emissions (CO) of greater than "major" levels (> 100 TPY) when the facility is operated at 8,760 hr/yr.

Project Emissions:

Facility Potential Emissions (tpy)

Source	PM	PM ₁₀	PM _{2.5}	CO	NO _x	SO _x	VOC	HAPs
Drum Mixer/Dryer w/ Baghouse	6.14	n/a	n/a	24.2	10.23	2.05	8.18	1.62
Silo Filling Operations	0.11	n/a	n/a	0.22	n/a	n/a	2.27	0.034
Truck Loadout Activities	0.10	n/a	n/a	0.25	n/a	n/a	0.77	0.016
Scalping Screens	1.64	0.55	n/a	n/a	n/a	n/a	n/a	n/a
Conveyor Transfer Activities	0.34	0.11	n/a	n/a	n/a	n/a	n/a	n/a
Material Transfer Activities	1.68	0.79	n/a	n/a	n/a	n/a	n/a	n/a
Wind Erosion on Storage Pile	0.35	0.18	n/a	n/a	n/a	n/a	n/a	n/a
725 kW Cummins Main DEG (2000 hrs)	0.28	0.23	0.22	1.06	9.23	2.85E-05	0.21	0.01
725 kW Cummins Main DEG (1500 hrs)	0.21	0.17	0.16	0.79	6.92	2.14E-05	0.16	0.008
725 kW Cummins/Onan Emergency DEG (500 hrs)	0.07	0.06	0.06	0.66	6.88	7.26E-06	0.06	0.003
Truck Traveling on Unpaved Roads	5.82	1.42	0.22	n/a	n/a	n/a	n/a	n/a
1.25 MMBtu/hr Hot Oil Heater	0.08	0.04	n/a	0.20	0.80	2.88	0.01	0.002
Lump Breaker	0.22	0.10	n/a	n/a	n/a	n/a	n/a	n/a
Total (Existing) ¹	16.54	3.32	0.44	25.93	20.26	4.93	11.44	1.68
Total (Proposed) ²	16.76	3.42	0.44	26.32	24.83	4.93	11.44	1.68
Change (Proposed)	0.22	0.10	0.00	0.39	4.57	0.00	0.00	0.00

¹ Total assumes operation of main DEG for 2000 hours. Total excludes lump breaker.

² Total assumes operation of main DEG for 1500 hours and emergency DEG for 500 hours. Total includes lump breaker.

Greenhouse Gas Emissions (GHG):

Mass Greenhouse Gas (GHG) Emissions

Unit No.	Fuel Type	Annual Operating Hours	Heat Input Capacity (MMBtu/hr)	CO ₂ Emission Factor ¹ (lb/MMBtu)	CO ₂ Annual Emissions (ton/yr)	N ₂ O Emission Factor ¹ (lb/MMBtu)	N ₂ O Annual Emissions (tons/yr)	CH ₄ Emission Factor ¹ (lb/MMBtu)	CH ₄ Annual Emissions (tons/yr)
725 kW DEG	No. 2 Fuel Oil	2000	7.14	163.1	1164.5	1.32E-03	0.01	6.62E-03	0.05
Total Annual Greenhouse Gas Emissions					1164.5		0.01		0.05

¹ 40 CFR Part 98 Subpart C, Table C-1 and Table C-2

CO₂ Equivalent (CO₂e) Emissions

CO ₂ e (tpy) ¹			
Unit No.	CO ₂	N ₂ O	CH ₄
725 kW DEG	1164.5	3.1	1.05
Total Annual CO₂e(tpy) = 1168.65			

¹ CO₂e calculated using global warming potential (GWP) from 40 CFR Part 98 Subpart A, Table A-1.
GWP: CO₂ = 1, N₂O = 310, CH₄ = 21

Mass Greenhouse Gas (GHG) Emissions

Unit No.	Fuel Type	Annual Operating Hours	Heat Input Capacity (MMBtu/hr)	CO ₂ Emission Factor ¹ (lb/MMBtu)	CO ₂ Annual Emissions (ton/yr)	N ₂ O Emission Factor ¹ (lb/MMBtu)	N ₂ O Annual Emissions (tons/yr)	CH ₄ Emission Factor ¹ (lb/MMBtu)	CH ₄ Annual Emissions (tons/yr)
Hot Oil Heater	No. 2 Fuel Oil	2000	1.25	163.1	203.9	1.32E-03	1.65E-03	6.62E-03	8.27E-03
Total Annual Greenhouse Gas Emissions					203.9		1.65E-03		8.27E-03

¹ 40 CFR Part 98 Subpart C, Table C-1 and Table C-2

CO₂ Equivalent (CO₂e) Emissions

CO ₂ e (tpy) ¹			
Unit No.	CO ₂	N ₂ O	CH ₄
Hot Oil Heater	203.9	0.51	0.17
Total Annual CO₂e(tpy) = 204.58			

¹ CO₂e calculated using global warming potential (GWP) from 40 CFR Part 98 Subpart A, Table A-1.
GWP: CO₂ = 1, N₂O = 310, CH₄ = 21

Mass Greenhouse Gas (GHG) Emissions

Unit No.	Fuel Type	Annual Operating Hours	Capacity (tons/hr)	CO ₂ Emission Factor ¹ (lb/ton)	CO ₂ Annual Emissions (ton/yr)	CH ₄ Emission Factor ¹ (lb/ton)	CH ₄ Annual Emissions (tons/yr)
Drum Mixer/Dryer	No. 2 Fuel Oil	2000	186	33	6138.0	0.012	2.23
Total Annual Greenhouse Gas Emissions					6138.0		2.23

¹ AP-42, Tables 11.1-7 and 11.1-8 (3/04)

CO₂ Equivalent (CO₂e) Emissions

CO ₂ e (tpy) ¹			
Unit No.	CO ₂	N ₂ O	CH ₄
Drum Mixer/Dryer	6138.0	0	46.8
Total Annual CO₂e(tpy) = 6184.8			

¹ CO₂e calculated using global warming potential (GWP) from 40 CFR Part 98 Subpart A, Table A-1.
GWP: CO₂ = 1, N₂O = 310, CH₄ = 21

Total CO₂e (tpy) = 1168.65 + 204.58 + 6184.8 = 7558.03

Ambient Air Quality Assessment:

An ambient air quality assessment is required for a renewal application if there are changes proposed to the facility that are significant new sources or modified sources. In this renewal application, the 725 kW emergency diesel engine generator may temporarily replace the main 725 kW diesel engine generator and is limited to 500 hour/year. This is considered insignificant and an ambient air quality assessment is not required. Also, the addition of the lump breaker results in fugitive emissions. Fugitive sources and/or intermittent sources generally do not require an ambient air quality assessment.

Significant Permit Conditions:

1. Incorporated restrictions on the hours of operation (500 hours) for the 725 kW emergency diesel engine generator, and on the combined hours of operation (2000 hours) for the 725 kW diesel engine generator and 725 kW emergency diesel engine generator.
2. Incorporated requirements per 40 CFR Part 63, Subpart ZZZZ, for the 725 kW emergency diesel engine generator including installation and operation of a non-resetting hour meter, maintenance requirements for the engine, and meeting the definition of an emergency stationary RICE with the following exceptions:
 - i. The total hours of operation (emergency operation, maintenance checks and readiness testing) of the 725 kW emergency diesel engine generator shall not exceed 500 hours in any rolling 12-month period. The total combined hours of operation of the 725 kW diesel engine generator and the 725 kW emergency diesel engine generator shall not exceed 2,000 hours in any rolling twelve-month (12-month) period;
 - ii. The 725 kW emergency diesel engine generator may be operated for up to 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.
3. Added a total AC plant production rate limit of 372,000 tons of asphalt concrete in any rolling twelve-month (12-month) period.
4. Changed the fuel limit to a total AC plant production rate limit when firing cooking oil and/or biodiesel, from 360,000 gallons to 199,950 tons of asphalt concrete in any rolling twelve-month (12-month) period.

Conclusion and Recommendation:

Recommend issuance of the renewal of Temporary Covered Source Permit (CSP) No. 0040-01-CT, subject to the incorporation of the significant permit conditions noted above, a 30-day public comment period and a 45-day EPA review period.

Darin Lum
2/2014