

PROPOSED

Covered Source Permit (CSP) No. 0258-01-C Review

Renewal Application No. 0258-06; Modification Application No. 0258-07

APPLICANT: Grace Pacific Corp.

RESPONSIBLE OFFICIAL: Mr. Darrell Goo
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LOCATION Honokohau Quarry
74-4925D Queen Kaahumanu Highway
Kailua-Kona, HI 96740
UTM (Zone 4): 813,326 m East; 2,179,328 m North

**PLANT SITE MANAGER/
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SIC 2951 – Asphalt Paving Mixtures

Project Description:

Application 0258-06 was submitted June 18, 2010 for the renewal of Covered Source Permit (CSP) No. 0258-01-C. The renewal application did not propose any changes from the existing permit.

Application 0258-07 was initially submitted on February 25, 2011, and resubmitted September 7, 2011 in response to comments from the Department of Health. The minor modification application seeks to permit equipment that will be used to increase the production of asphalt using reclaimed asphalt pavement (RAP).

Equipment:

The equipment to be added pursuant to this modification is:

- Astec RAP collar (installed on existing 325 tph Stansteel parallel flow drum mixer)
- Astec Model SS-408-1 4' by 8' scalping screen
- Two-bin (30 ton each) RAP cold feed system.
- Conveyors (2)

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Equipment to be removed pursuant to modification:

- 30 ton RAP bin.

The updated equipment list for the 325 TPH Hot Mix Asphalt (HMA) Plant encompasses the following equipment and associated appurtenances:

- 325 TPH Stansteel parallel flow drum mixer, model no. DM732, serial no. 732, with 12.9 MMBTU/hr burner, Stansteel cyclone, and Astec RAP collar;
- Astec baghouse, model no. RBH-43-SP, serial no. 93-154-437;
- 1,065 hp Cummins diesel engine generator, model no. QST30-G5 NR2, serial no. 10909;
- 1.25 MMBtu/hr Heatec hot oil heater, model no. HCS-120, serial no. 94268;
- Vibrating scalper screen, Type P, Design D, serial no. P-18G311NYS;
- Astec Model SS-408-1 4' by 8' scalping screen
- Four (4) compartment cold feed system;
- Two (2) 200 ton asphalt concrete storage silos;
- Two-bin (30 ton each) RAP cold feed system; and
- Various conveyors.

Insignificant Activities

Insignificant activities at the facility consist of the following:

Description	HAR Reference
50 kW Onan DEG and Asphalt tank burner rated at less than 1.0 MMBtu/hr.	11-60.1-82(f)(2) Other than smoke house generators and gasoline fired industrial equipment, fuel burning equipment with a heat input capacity less than one million BTUH, or a combination of fuel burning equipment operated simultaneously as a single unit having a total combined heat input capacity of less than one million MMBtu/hr.
3 fuel oil tanks with capacities of 500, 2000, & 9000 gallons, and 2-25,000 gallon asphalt storage tanks	11-60.1-82(f)(1) Any storage tank, reservoir, or other container of capacity equal to or less than 40,000 gallons storing volatile organic compounds, except those storage tanks, reservoirs, or other containers subject to any standard or other requirement pursuant to Sections 111 and 112 of the Act.

APPLICABLE REQUIREMENTS:

Hawaii Administrative Rules (HAR)

Chapter 11-59, Ambient Air Quality Standards

Chapter 11-60.1, 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, & Agricultural Burning

11-60.1-111 Definitions

11-60.1-112 General fee provisions for covered sources

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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 10, Field Citations

NEW SOURCE PERFORMANCE STANDARDS (NSPS):

The existing facility is currently subject to the following Federal regulations:

- 40 CFR Part 60 Standards of Performance for New Stationary Sources, Subpart A, *General Provisions*; and
- 40 CFR Part 60 Subpart I; *Standards of Performance for Hot Mix Asphalt Plants*

The existing facility is currently subject to Federal NSPS for Hot Mix Asphalt Plants. The diesel engine generator located at the facility is also subject to the following Federal regulations:

- 40 CFR Part 60 Standards of Performance for New Stationary Sources, Subpart A, *General Provisions*;
- 40 CFR Part 60 Standards of Performance for New Stationary Sources, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*;
- 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A - *General Provisions*; and
- 40 CFR Part 63 - National Emission Standards For Hazardous Air Pollutants For Source Categories, Subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

40 CFR 63 Subpart ZZZZ is an applicable requirement for the diesel engine generator because it is a new or reconstructed stationary reciprocating internal combustion engine (RICE) located at an area source of HAPs. However, pursuant to §63.6590(c)(1), a new or reconstructed stationary RICE located at an area source will satisfy the requirements of this subpart by meeting the requirements of 40 CFR subpart IIII for compression ignition engines. No further requirements for such engines are required by 40 CFR 63 Subpart ZZZZ.

Since 40 CFR 60 Subpart IIII is an applicable requirement for the black-start diesel engine generator pursuant to 40 CFR 63 Subpart ZZZZ, §63.6590, the applicable requirements are as follows:

Pursuant to §60.4204(a), "Owners and operators of pre-2007 model year non-emergency stationary compression-ignition internal combustion engine (CI ICE) with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 of this subpart. The portion of table 1 that applies to the subject DEG is:

TABLE 1 TO SUBPART IIII OF PART 60.—EMISSION STANDARDS FOR STATIONARY PRE-2007 MODEL YEAR ENGINES WITH A DISPLACEMENT OF <10 LITERS PER CYLINDER

[As stated in §§ 60.4204(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder in g/kW-hr (g/hp-hr)				
	NMHC + NOX	HC	NOX	CO	PM
KW>560 (HP>750)	N/A	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

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Pursuant to §60.4207(b), beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.5(b) for nonroad diesel fuel.

(§ 80.510 What are the standards and marker requirements for NRLM [nonroad locomotive or marine] diesel fuel?

(b) Beginning June 1, 2010. Except as otherwise specifically provided in CFR 80 Subpart I, all NR and LM diesel fuel is subject to the following per-gallon standards:

- (1) Sulfur content.
 - (i) 15 ppm maximum for NR diesel fuel.*
 - (ii) 500 ppm maximum for LM diesel fuel.**
- (2) Cetane index or aromatic content, as follows:
 - (i) A minimum cetane index of 40; or*
 - (ii) A maximum aromatic content of 35 volume percent.)**

Due to the new fuel standards, a permit condition will be added requiring the DEG to use fuel with a maximum sulfur content of 15 parts per million (ppm) and either a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

Pursuant to §60.4209, if you are an owner or operator of a stationary CI internal combustion engine, you must meet the monitoring requirements of this section and also meet the monitoring requirements specified in §60.4211.

The monitoring requirements specified in §60.4211 are:

Sec. 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

- (a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.
- (b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in Sec. Sec. 60.4204(a), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.
 - (1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.
 - (2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.
 - (3) Keeping records of engine manufacturer data indicating compliance with the standards.

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- (4) Keeping records of control device vendor data indicating compliance with the standards.
- (5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in Sec. 60.4212, as applicable.

To demonstrate compliance, engine manufacturer data was provided by applicant. The data provided demonstrates compliance with the applicable standards.

Sec. 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

- (a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.
 - (1) Submit an initial notification as required in Sec. 60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.
 - (i) Name and address of the owner or operator;
 - (ii) The address of the affected source;
 - (iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
 - (iv) Emission control equipment; and
 - (v) Fuel used.
 - (2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.
 - (i) All notifications submitted to comply with this subpart and all documentation supporting any notification.
 - (ii) Maintenance conducted on the engine.
 - (iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.
 - (iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

The requirements of §60.4214 will be incorporated into the permit in Section D, Monitoring and Recordkeeping Requirements.

NONAPPLICABLE REQUIREMENTS:

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS):

The DEG located at the facility is currently to NESHAPS. However, the only requirement for the DEG is to comply with 40 CFR 60 Subpart IIII. The remaining equipment is not subject to NESHAPS regulation.

MAXIMUM ACHIEVABLE CONTROL STANDARDS (MACT):

MACT is currently not required because the facility is not a major source of hazardous air pollutants subject to standards under 40 CFR 63. The modification will not increase emissions, so the facility will continue to be exempt from MACT requirements.

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PREVENTION OF SIGNIFICANT DETERIORATION (PSD):

PSD requirements currently do not apply to the facility because annual emissions total less than 100 tons per year of each regulated air pollutant with the exception of carbon dioxide (CO₂). CO₂ emissions exceed 100 tons per year, but less than the 100,000 tons of equivalent carbon dioxide emissions that would trigger PSD regulation.

ANNUAL EMISSIONS REPORTING:

Annual emissions reporting requirements are unchanged due to the modification. The facility is required to report plant production and fuel usage for each fuel type of fuel used.

SYNTHETIC MINOR APPLICABILITY:

The facility is currently classified as a synthetic minor source. The modification will not affect this classification.

COMPLIANCE ASSURANCE MONITORING (CAM) APPLICABILITY:

CAM applies only to major sources. The facility is not a major source, and therefore CAM is not an applicable requirement.

BACT (Best Available Control Technology) APPLICABILITY

A BACT review is not required for this modification since the calculated increase in emissions (zero) does not exceed the significance level for any pollutant.

Greenhouse Gas Tailoring Rule (GGTR):

Due to the fact the greenhouse gas emissions is now classified as a regulated pollutant, the GGTR was promulgated. The GGTR “tailors” the applicability threshold for PSD and Title V permit programs to

- ≥ 100,000 short tons/yr of potential CO₂e emissions for the PSD/Title V Major Source level, and
- ≥ 75,000 short tons/yr of potential CO₂e emissions for the PSD/Title V significance level.

The CO₂e emissions from the facility were determined to be:

Equipment	Amount (gal/yr)	CO2 emissions (MTPY)	CH4 emissions (MTPY)	N2O emissions (MTPY)	CO2e (CH4) (MTPY)	CO2e (N2O) (MTPY)	Total CO2e (MTPY)
DEG	191,700	1956.6	0.08	1.59E-02	1.67	4.92	1,963
Hot Oil Heater	60,000	612.4	2.48E-02	4.97E-03	0.52	1.54	614
Drum Mixer	n/a	4,363.6	1.42	0.00	29.72	0.00	4,393
Total	251,700	6,932.5	1.52	0.02	31.91	6.46	6,971

Since the proposed plant configurations do not exceed applicability thresholds, the facility is not subject to any additional regulation due to greenhouse gas emissions.

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Emission Calculations

The addition of the equipment to increase the amount of RAP used in the production of asphalt will not increase facility emissions. There is no increase due to the fact that the facility is still limited to producing 260,000 tons of asphalt per rolling 12-month period. The emissions from the facility are as follows:

Pollutant	Point Source Emissions				Fugitive Emissions				Total
	Drum Mixer	DEG	Oil heater	Silo Fill & Stor.	Load-Out	Agg. Handling	Unpaved Rds	Screening	Emissions
	Limit	Limit	Unltd.	Limit	Limit	Limit	Limit	Limit	Limit
	800	3000	8760	800	800	800	800	800	(various
	hr/yr	hr/yr	hr/yr	hr/yr	hr/yr	hr/yr	hr/yr	hr/yr	hr/yr)
CO	16.9	1.59	0.2	0.15	0.18				19.02
NOx	7.15	13.84	0.8						21.79
PM	4.29	0.42	0.08	0.08	0.07	0.27	2.8	0.88	8.89
PM-10	2.99	0.42	0.04	0.08	0.07	0.13	0.8	0.31	4.84
PM-2.5	0.38	0.42	0.03	0.08	0.07	0.04	0.1	0.31	1.43
SO2	1.43	0.35	2.83						4.61
VOC	4.16	0.32	0.02	1.58	0.54				6.62
Pb	0.002								0.002
HAPs	1.17	0.05	1.08	0.02	0.01				2.33

Ambient Air Quality Assessment:

Ambient air quality assessments (AAQA) are required for new sources or modified sources with any significant increase in emissions. Since this modification will not increase emissions, a new ambient air quality assessment was not required for this facility.

Conclusion and Recommendations:

Recommend issuance of permit renewal and minor modification of existing permit upon completion of 30 day public comment period and EPA 45-day review.

Kevin Kihara
October 7, 2011