

PROPOSED

PERMIT APPLICATION REVIEW TEMPORARY COVERED SOURCE PERMIT NO. 0750-02-CT Application for Initial Permit No. 0750-02

Company: Grace Pacific Corporation

Mailing Address: P.O. Box 78
Honolulu, Hawaii 96810

Facility: 331 TPH Reclaimed Asphalt Pavement (RAP) Recycling Plant

Location: Various Temporary Sites, State of Hawaii

Initial Location: 1000 Halewili Road, Hanapepe, Kauai

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

Responsible Official: Mr. Darrell Goo
Senior Vice President, Construction
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Contact: Mr. Joseph Shacat
Manager of Environmental Compliance
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Equipment:

331 TPH Reclaimed Asphalt Pavement (RAP) Recycling Plant with:

1. 100 TPH Telsmith mobile impact crusher, model no. HSI 3036, serial no. 232 M337;
2. 331 TPH Astec 3-deck mobile screen, model no. Duo-Vibe 3612, serial no. 113385;
3. 270 kW Cummins diesel engine generator, model no. C300D6R, serial no. K110273616, with 426 bhp Cummins diesel engine, model no. QSM11-G4 NR3, serial no. 35279792; and
4. Various conveyors.

BACKGROUND

Grace Pacific Corporation has submitted an application for an initial temporary covered source permit to operate a 331 TPH reclaimed asphalt pavement (RAP) recycling plant. The facility will sort and crush unprocessed cold-plane RAP material. The total operating hours of the proposed facility will be limited to 2,500 hours in any rolling twelve-month (12-month) period. The crusher and screen are powered by a 270 kW diesel engine generator fired on fuel oil no. 2 or biodiesel with a maximum sulfur content of 0.0015% by weight.

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This plant is currently permitted under temporary noncovered source permit no 0750-01-NT. It is being issued as a covered source permit because the plant may be operated as a support facility to a covered source. Under NSP 0750-01-NT, no more than 50% of the RAP production may go to the asphalt plant.

The RAP recycling plant will be initially located and operated on the same property as the 186 TPH Asphalt Plant (SIC code 2951), covered source permit no. 0036-01-CT, also operated by Grace Pacific. The RAP recycling plant and asphalt plant should be considered a single stationary source if the following three criteria are met:

1. Under the control of the same person (or persons under common control);
2. Located on one or more contiguous or adjacent properties; and
3. Belong to the same industrial grouping (same first two digit SIC code).

In addition, a support facility is considered to be part of the same industrial grouping as that of the primary facility it supports even if the support facility has a different two digit SIC code. A support facility relationship is presumed to exist where more than 50% of the output or services provided by one facility is dedicated to another facility that it supports.

Process

Incoming unprocessed cold-plane material from offset is stockpiled and then dumped into the feed bin for the 3-deck screen. Coarse and fine product are sorted and stockpiled. Oversized material is sent to the impact crusher and conveyed back to be screened and sorted again. The final product is recycled into hot-mix asphalt for road construction projects or sold as a recycled aggregate product.

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

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

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Standard of Performance for New Stationary Sources (NSPS), 40 CFR Part 60

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is not applicable to the facility because the maximum capacity of the crusher is less than 150 tons/hour.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is applicable to the 270 kW diesel engine generator (engine manufactured December 2010) because the engine commenced construction after July 11, 2005, and was manufactured after April 1, 2006. For purposes of Subpart IIII, the date that construction commences is the date the engine is ordered.

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61

This source is not subject to NESHAPs because there are no standards in 40 CFR Part 61 applicable to this facility.

NESHAPs for Source Categories (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 applicable to the 270 kW diesel engine generator because the engine is a new stationary RICE. A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary rice on or after June 12, 2006. A new stationary RICE located at an area source must meet the requirements of this part by meeting the requirements of 40 CFR Part 60, Subpart IIII. No further requirements apply for such engines under this part.

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 thresholds.

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.

Best Available Control Technology (BACT)

This source is not subject to BACT analysis because potential emissions are below significant levels. 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.

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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 not a synthetic minor source because potential emissions do not exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

Greenhouse Gas Tailoring Rule

Title V permitting for greenhouse gas (GHG) emissions is not applicable because the potential to emit of CO₂ equivalent (CO₂e) emissions are less than 100,000 tons per year. Total GHG emissions on a CO₂e basis using the global warming potential (GWP) of the GHG are shown in the table below.

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO ₂ e Based Emissions (TPY)
Carbon Dioxide (CO ₂)	1	594.1	594.1
Total Emissions:			594.1

INSIGNIFICANT ACTIVITIES / EXEMPTIONS

There are no exemptions proposed.

ALTERNATIVE OPERATING SCENARIOS

Diesel Engine Generator

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

AIR POLLUTION CONTROLS

Pre wetting of material and water sprays will be used as necessary 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

Operating hours for the RAP recycling plant will be limited to 2,500 hours in any rolling twelve-month (12-month) period. Water will be used as necessary to control fugitive dust emissions

331 TPH RAP Recycling Plant

The maximum capacity of the plant was used to calculate emissions. Water sprays will be used to control PM emissions. Emissions were based on emission factors from AP-42 Section 11.19.2 (8/04) – Crushed Stone Processing and Pulverized Mineral Processing.

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331 TPH RAP Recycling Plant		
Pollutant	Emissions (TPY) [2,500 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	4.5	15.9
PM-10	1.6	5.7
PM-2.5	0.7	2.4

Storage Piles

The maximum throughput of the facility of 231.2 TPH was used to calculate emissions. A 70% control efficiency was assumed for water suppression to control fugitive dust. Emissions were based on emission factors from AP-42 Section 13.2.4 (11/06) – Aggregate Handling and Storage Piles.

Storage Piles		
Pollutant	Emissions (TPY) [2,500 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	2.5	8.6
PM-10	1.2	4.1
PM-2.5	0.2	0.6

Vehicle Travel on Unpaved Roads

The maximum throughput of the facility of 231.2 TPH was used to calculate emissions. A 70% control efficiency was assumed for water suppression to control fugitive dust. Emissions were based on emission factors from AP-42 Section 13.2.2 (11/06) – Unpaved Roads.

Vehicle Travel on Unpaved Roads		
Pollutant	Emissions (TPY) [2,500 hr/yr]	Emissions (TPY) [8,760 hr/yr]
PM	3.1	10.9
PM-10	0.8	2.7
PM-2.5	0.1	0.3

270 kW Cummins Diesel Engine Generator

The 270 kW diesel engine generator is fired on fuel oil no. 2 or biodiesel with a maximum sulfur content of 0.0015% by weight. CO, NO_x, and PM emissions were based on manufacturer's data. NO_x emissions from biodiesel was increased by 10% over fuel oil no. 2 based on EPA's report, *A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions, October 2002*. The mass balance method was used to determine SO₂ emissions. VOC and HAP emissions were based on emission factors from AP-42 Section 3.3 (10/96) – Gasoline and Diesel Industrial Engines.

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270 kW Cummins Diesel Engine Generator			
Pollutant	Emissions (lb/hr)	Emissions (TPY) [2,500 hr/yr]	Emissions (TPY) [8,760 hr/yr]
CO	2.44	3.1	10.7
NO _x	3.10	3.9	13.6
SO ₂	0.00	0.01	0.02
PM	0.14	0.2	0.6
PM-10	0.14	0.2	0.6
PM-2.5	0.14	0.2	0.6
VOC	1.04	1.3	4.6
HAPs	0.011	0.014	0.049

Total Emissions

Total facility emissions are summarized in the table below.

Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Emissions (With Limits)	Emissions (No Limits)	BACT Significant Level	CERR Threshold	DOH Level
CO	3.1	10.7	100	1000	250
NO _x	3.9	13.6	40	100	25
SO ₂	0.01	0.02	40	100	25
PM	10.3	36.1	25	-	25
PM-10	3.7	13.0	15	100	25
PM-2.5	1.1	3.9	-	100	-
VOC	1.3	4.6	40	100	25
HAPs	0.01	0.05	-	-	5

AIR QUALITY ASSESSMENT

An ambient air quality impact analysis (AAQIA) is generally required for new or modified sources to demonstrate compliance with State and National ambient air quality standards. An AAQIA was previously conducted on the 270 kW diesel engine generator at the same proposed location (noncovered source permit no. 0750-01-NT), and there are no changes being proposed. Therefore, an AAQIA is not required for this initial permit.

SIGNIFICANT PERMIT CONDITIONS

1. Operating Hour Limits

The total operating hours of the RAP recycling plant, as represented by the total operating hours of the diesel engine generator, shall not exceed 2,500 hours in any rolling twelve-month (12-month) period.

Reason: The previous air quality assessment was based on this annual limit.

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2. Fuel Limits

The diesel engine generator shall be fired only on fuel oil no. 2 or biodiesel with the following specifications:

- a. Maximum sulfur content not to exceed 0.0015% by weight; and
- b. Minimum cetane index of forty (40) or maximum aromatic content of thirty-five (35) volume percent.

Reason: 40 CFR 60, Subpart IIII, fuel requirements for the diesel engine generator.

CONCLUSION

Grace Pacific Corporation has submitted an application for an initial temporary covered source permit to operate a RAP recycling plant. The plant is currently permitted under noncovered source permit no. 0750-01-NT. Water sprays will be used to control fugitive emissions. Potential emissions were based on the maximum rated capacities of the equipment. 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.

Mark Saewong
May 9, 2013