LAKESIDE INDUSTRIES

LETTER OF TRANSMITTAL

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CONTRACTOR REGISTRATION # LAKESI*274JD

DATE: February 27, 2024
ATTENTION: Lauren Whybrew
CONTRACT NO:
RE: 24NOC1632 Data Request #1

Olympic Region Clean Air Agency
Attn: Lauren Whybrew
2940 Limited Lane NW
Olympia, WA 98502

Received
MAR 01 2024
ORCAA

Dear Lauren:

WE ARE SENDING YOU ☒ Enclosed

COPIES	DESCRIPTION
1	**Technical Memorandum from Landau Associates addressing 24NOC1632 Data Request #1**

REMARKS:

Please find enclosed the Technical Memorandum from Landau Associates addressing 24NOC1632 Data Request #1.

Please contact me if you have any questions or need additional information.

Thank you,

Amanda Neice, PE
Environmental Engineer
(425) 313-2630
amanda.neice@lakesideindustries.com

If enclosures are not as noted, kindly notify us at once.

LANDAU ASSOCIATES

Received
MAR 0 1 2024
ORCAA

TECHNICAL MEMORANDUM

TO: Lauren Whybrew, Olympic Region Clean Air Agency

FROM: Eric Albright

DATE: February 22, 2024

RE: Response to Incompleteness
Lakeside Industries – Durgin Road
Olympia, Washington
Project No. 1220006.020

INTRODUCTION

Landau Associates (Landau) has prepared this technical memorandum on behalf of Lakeside Industries, Inc. (Lakeside) in response to a letter from the Olympic Region Clean Air Agency (ORCAA) dated January 25, 2024, which indicates that a Notice of Construction (NOC) application that was submitted by Lakeside to make changes to the existing hot-mix asphalt (HMA) facility located at 11125 Durgin Road SE in Olympia, Washington (facility) has been deemed incomplete. The NOC application, which ORCAA has designated NOC Application No. 24NOC1632, is a request for ORCAA to issue an Order of Approval to allow Lakeside to use up to 40 percent reclaimed asphalt pavement (RAP) as raw material when producing asphalt at the facility.

INFORMATION REQUEST RESPONSES

The following addresses the information requests attached to the January 25 letter and should be considered an addendum to NOC Application No. 24NOC1632:

1. **Air Pollutant Emissions Assessment:** The planned changes to the facility are to allow for the addition of RAP to the asphalt mixes produced by the facility. These changes include installation and use of a covered structure where RAP will be stored, a RAP feed bin, and a conveyor that will receive RAP from the RAP feed bin and direct it into the existing asphalt drum dryer/mixer. No modifications to the facility's drum dryer/mixer are necessary for it to receive RAP because it was originally designed and constructed to incorporate RAP into the asphalt mixes it produces.

   HMA is a combination of aggregate and liquid asphalt cement (AC) binder that is mixed at an elevated temperature to form a hard, strong pavement construction material. Asphalt pavement that must be replaced is removed and transported to an HMA facility capable of reclaiming and recycling the reusable RAP. For RAP to replace a portion of the aggregate used for HMA production, it must be processed (i.e., crushed and screened) to a size that can be effectively introduced to the drum dryer/mixer. Typically, HMA is 95 percent aggregate and 5 percent AC. Lakeside plans to replace up to a maximum of 40 percent of the aggregate with RAP, but the fraction of RAP in any given batch of HMA produced at the facility could be less than 40 percent depending on the HMA composition specified by the customer.

The crusher that will be used to process RAP at the facility is a portable unit contracted by Lakeside to visit the facility periodically to resize RAP delivered to the facility. The portable crusher operates under a General Rock Crusher Approval Order issued to the equipment owner by ORCAA; therefore, emissions from the RAP-crushing activities are not considered part of the planned changes to the asphalt plant equipment and are not included in the NOC application. Two handling operations will be needed to move RAP from the storage pile to the drum dryer/mixer. A wheeled front-end loader will be used to pick the RAP up from the storage pile in the covered structure and deposit it into the RAP feed bin. The RAP in the bottom of the feed bin will be deposited onto a conveyor that will transport the RAP to a mixing chamber in the drum that is designed specifically to receive RAP. The covered structure in which RAP will be stored, the RAP bin, and the conveyor used to deliver RAP to the drum dryer/mixer are not expected to be sources of fugitive emissions because handling RAP generates negligible amounts of fugitive dust. This is because the AC used to create the HMA that becomes RAP encapsulates any fines present in the aggregate that was used to produce the HMA. These encapsulated fines are not prone to entrainment and, therefore, RAP crushed to the size used for HMA production is not a source of fugitive dust.

Potential to emit (PTE) calculations for the planned changes were completed using a spreadsheet, a printout of which is provided in Attachment A. Although handling of RAP generates much less fugitive dust than handling of aggregate, Equation 1 in the US Environmental Protection Agency's (EPA's) AP-42 (Compilation of Air Emissions Factors from Stationary Sources) Chapter 13.2.4 (Aggregate Handling and Storage Piles) was used to calculate maximum potential emissions from the planned RAP-handling operations, meaning the calculated emissions should be considered conservative estimates. The mean wind speed for the equation (6.7 meters per second) is the average wind speed measured from 1987 through 1991 at the National Weather Service (NWS) meteorological station located at Olympia Airport, which is approximately 8 miles southwest of the facility. The moisture content for the equation (4.0 percent) is based on an estimate of typical RAP moisture content by Lakeside operations personnel. The calculated PTE attributable to the planned changes is summarized in the table below:

Pollutant	PTE (tpy)	Exemption Threshold (tpy)
PM (TSP)	0.16	1.25
PM_{10}	0.074	0.75
$PM_{2.5}$	0.011	0.50

PTE = potential to emit
tpy = tons per year
PM = particulate matter
TSP = total suspended particulates
PM_{10} = particulate matter less than 10 microns
$PM_{2.5}$ = particulate matter less than 2.5 microns

It should be noted that the planned changes are expected to decrease actual emissions attributable to the facility. Because the maximum hourly, daily, and annual asphalt production rates of the facility will not increase as a result of the planned changes, RAP usage will reduce the quantities of both virgin aggregate and virgin AC required to produce HMA. Emissions

generated from RAP-handling operations are understood to be less than those generated by aggregate-handling operations, and the AC contained in the RAP reduces the quantity of AC that must be added to the mixing chamber of the drum to produce HMA.

2. **Toxic Air Pollutant Analysis:** The planned changes to the facility are not expected to increase emissions of any toxic air pollutants (TAPs). Because TAP emissions will not increase, no demonstration of compliance with the regulations in Washington Administrative Code (WAC) 173-460 is required.

3. **Ambient Air Quality Analysis:** As shown in the table above, the total PTE attributable to the planned changes to the facility are less than the new source review (NSR) emission exemption thresholds provided in WAC 173-400-110(5). While we understand that these thresholds have not been adopted by ORCAA, we believe that a project with PTE less than those thresholds can be assumed to be *de minimis*. With this understanding, we believe that an air dispersion modeling analysis to predict increases in ambient pollutant concentrations and to demonstrate that the planned changes do not have the potential to cause or contribute to violation of an ambient air quality standard is not necessary.

4. **Best Available Control Technology:** Each emission unit that will increase emissions of a regulated pollutant must employ Best Available Control Technology (BACT) to minimize the emission increases. The Washington State Department of Ecology (Ecology) has issued a guidance document that includes an outline of the concept of "presumptive BACT." While we understand that ORCAA has not adopted this guidance document nor issued a similar guidance document, the concept of presumptive BACT is a valid approach for the development of a BACT proposal for an emission unit type for which BACT determinations have been made by permitting agencies.

   BACT analyses for HMA facilities in Washington State have typically focused on the drum dryer/mixer, AC storage tanks, asphalt storage silos, drag conveyor, and truck loading. These are the emission units of greatest concern because they generate most of the emissions associated with an HMA facility. Because fugitive dust emissions from RAP storage and handling are, as demonstrated by the PTE calculations summarized in the table above, *de minimis*, they are frequently not addressed by BACT analyses. In fact, the Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC) does not contain any entries for material storage or handling operations at HMA facilities. However, the RBLC contains several BACT determinations for storage and handling of material other than RAP; a summary of the results from an RBLC search that covered the past 10 years is attached (Attachment B).

   In summary, the emission reduction alternatives include the following:

   - Good work practices/follow dust control/minimization plan
   - Wet suppression for virgin aggregate processing operations

   The facility's Operations & Maintenance (O&M) Plan includes operational fugitive dust minimization measures employed at the facility. This plan outlines good work practices that are used to minimize fugitive dust, including how and when they are to be applied to be most effective. The covered RAP storage structure, as well as the RAP feed bin and conveyor, do not feature integrated water spray equipment, but water is applied on an as-needed basis and the encapsulation of the fines by AC minimizes the quantity of dust available in the RAP to become airborne fugitive dust.

Based on the RBLC search results outlined above, Landau proposes presumptive BACT for RAP storage and handling is use of the good work practices, which are outlined in the facility's O&M Plan.

USE OF THIS TECHNICAL MEMORANDUM

This technical memorandum has been prepared for the exclusive use of Lakeside Industries for specific application to the Durgin Road project. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

CLOSING

Please let me know if you have any questions. I can be reached by phones at (206) 631-8691 (office) or (206) 909-0591 (mobile), or via email at ealbright@landauinc.com.

LANDAU ASSOCIATES, INC.

Eric Albright
Principal

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cc: Amanda Neice, Lakeside Industries
Karen Deal, Lakeside Industries

Attachments: A – Emission Calculations
B – RBLC Search Results Summary

APPENDIX A

Emission Calculations

Received
MAR 0 1 2024
ORCAA

Lakeside Industries - Durgin Rd. HMA Plant

- Fugitive Emissions from aggregate storage piles

Max Hourly Production	300 T/hr	95% T/hr is Aggregate & RAP/RAS =	**285 T/hr**	40% T/hr is RAP/RAS =	**120 T/hr**
Max Daily Production	7,200 Tons/day	95% T/day is Aggregate & RAP/RAS =	**6,840 T/day**	40% T/day is RAP/RAS =	**2,880 T/day**
Max Annual Production	300,000 Tons/yr (Proposed Throughput Limit)	95% T/yr is Aggregate & RAP/RAS =	**285,000 T/yr**	40% T/yr is RAP/RAS =	**120,000 T/yr**

- aggregate and RAP/RAS are approximately 95 percent (by weight) of the total HMA, the remaining 5 percent (by weight) is asphalt cement.

Aggregate Front-end Loader Drop Points, AP-42 13.2.4 (11/06)

$E = k\ (0.0032) \times (U/5)^{1.3} / (M/2)^{1.4}$ = 1.31E-03 lb/ton for PM 6.19E-04 lb/ton for PM_{10} 9.38E-05 lb/ton for $PM_{2.5}$

k = particle size multiplier	0.74 for PM	0.35 for PM_{10} 0.053 for $PM_{2.5}$
U = mean wind speed	6.7 mph	Average wind speed at Olympia Airport NWS station (1987 - 1991) - (the range of wind speeds for which the emission factor equation is valid is 0.6 m/s to 6.7 m/s)
M = moisture content	4.0 %	Represtative moisture content of RAP (the range of moisture contents for which the emission factor equation is valid is 0.25% to 4.8%)

Aggregate Front End Loader Drop Points Pick up from storage pile and drop into bin: **120 T/hr** **2** Transfer Points

Pollutant	Emission Factor (lb/ton)	Emissions Per Transfer Point		Total Emissions	
		Emissions (lb/hr)	Emissions (T/yr)	Emissions (lb/hr)	Emissions (T/yr)
PM	1.31E-03	0.16	0.079	0.31	0.16
PM_{10}	6.19E-04	0.074	0.037	0.15	0.074
$PM_{2.5}$	9.38E-05	0.011	0.0056	0.023	0.011

APPENDIX B

RBLC Search Results Summary

RBLC ID	Facility Name	Company	County	State	Permit Issuance Date	Process	Pollutant	BACT	Emission Limit	Basis
IA-0117	Shell Rock Soy Processing	Shell Rock Soy Processing	Grundy	IA	3/17/2021	Fugitive Particulate Sources	PM	None	1.1 tpy PM, 0.051 tpy PM10, 0.007 tpy PM2.5	BACT-PSD
LA-0384	Direct Reduced Iron Facility	Nucor Steel Louisiana, LLC	St. James Parish	LA	6/13/2019	Bulk Material Storage Piles and Handling	PM10, PM2.5	Wet suppression and minimize handling	None	BACT-PSD
SC-0196	Darlington Plant	Nucor Corp.	Darlington	SC	4/29/2019	Raw Material Handling and Maintenance Activities	Filterable PM, Filterable PM10	Good work practices and follow dust minimization plan.	None	BACT-PSD
AK-0084	Donlin Gold Project	Donlin Gold, LLC	Bethel Census Area	AK	6/30/2017	Material Loading and Unloading	PM, PM10, PM2.5	Best Practical Methods/Fugitive Dust Control Plan (includes water spray)	530 tpy	BACT-PSD
AK-0084	Donlin Gold Project	Donlin Gold, LLC	Bethel Census Area	AK	6/30/2017	Fugitive Dust from Wind Erosion	PM, PM10, PM2.5	Best Practical Methods / Fugitive Dust Control Plan (includes applying water)	32 tpy	BACT-PSD