Emulsicoat, Inc.
5400 West 86th Street · Indianapolis, Indiana 46268
317-872-6010 · www.hrglab.com

December 21, 2020

Illinois Environmental Protection Agency
Division of Air Pollution Control - Air Permit Section
1021 North Grand Avenue East
PO Box 19506
Springfield, Illinois 62794

RE: ROSS Modification Application
Emulsicoat, Inc.
University Avenue
Urbana, Illinois
ID: 019105ACV

Dear Sir or Madam:

Emulsicoat, Inc. (Emulsicoat) is submitting the enclosed Registration of Smaller Sources (ROSS) modification application for our facility located at 705 East University Avenue in Urbana, Illinois. The purpose of this application is to have the Illinois Environmental Protection Agency (IEPA) transition the facility to a Lifetime Operating permit. Upon review of our emission calculations with IEPA, it came to Emulsicoat's attention that previous emissions had not been evaluated properly. Emulsicoat notified the Air Compliance Section on November 25, 2020 and is subsequently submitting this application for modification. Air permit application forms are provided in Attachment A. Supporting emission calculations are provided in Attachment B.

SUMMARY OF POTENTIAL EMISSIONS

The emissions were calculated by making engineering calculations or performing mass balances. The engineering calculations involved utilizing facility process throughputs with emission factors established by the United States Environmental Protection Agency (USEPA) in the USEPA computer databases entitled, "Factor Information Retrieval Data System, Version 6.25", (FIRE) and "Compilation of Air Pollutant Emission Factors", (AP-42). The mass balance approach calculated the amount of pollutant entering a process and assumed that all the pollutant was emitted. Tank emissions were calculated using the USEPA TANKS Program, version 4.0.9.d. The facility-wide uncontrolled potential to emit after the update is shown in Table 1. The facility-wide uncontrolled actual emissions

after the update are shown in Table 2. Detailed calculations are provided in Attachment B.

TABLE 1
Facility-wide Uncontrolled Potential Emissions (tons/yr)

Emission Units	PM	PM_{10}	$PM_{2.5}$	SO_2	Nox	VOC	CO	Worst Case HAP	Combined HAPs
Natural Gas Combustion	0.25	1.01	1.01	0.08	13.23	0.73	11.11	0.24	0.25
Fuel Oil Combustion	0.67	0.80	0.71	23.81	6.71	0.11	1.68	7.04E-04	2.30E-03
Storage and Mixing Tanks	-	-	-	-	-	0.02	-	negl.	negl.
Loading Racks	-	-	-	-	-	1.17E-05	-	7.04E-04	1.53E-07
Fugitive Emissions from Leaking Equipment	-	-	-	-	-	0.36	-	-	-
Parts Washers	-	-	-	-	-	0.49	-	-	-
Cutting and Grinding	0.00	0.00	0.00	-	-	-	-	-	-
Welding	0.00	0.00	0.00	-	-	-	-	negl.	7.50E-07
Total PTE of Entire Source	**0.94**	**1.81**	**1.72**	**23.89**	**19.93**	**1.71**	**12.79**	**0.24**	**0.25**
Major Source Thresholds	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**10**	**25**

Notes: PM = total particulate matter; PM10 = total particulate matter less than 10 microns in aerodynamic diameter; SOx = sulfur oxides; NOx = nitrogen oxides; VOC = volatile organic compounds; CO = carbon monoxide; and HAP = hazardous air pollutant.

TABLE 2
Facility-wide Uncontrolled Actual Emissions (tons/yr)

Emission Units	PM	PM_{10}	$PM_{2.5}$	SO_2	Nox	VOC	CO	Worst Case HAP	Combined HAPs
Natural Gas Combustion	0.16	0.62	0.62	0.05	8.21	0.45	6.89	0.15	0.15
Fuel Oil Combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storage and Mixing Tanks	-	-	-	-	-	0.02	-	negl.	negl.
Loading Racks	-	-	-	-	-	6.27E-06	-	5.02E-08	8.15E-08
Fugitive Emissions from Leaking Equipment	-	-	-	-	-	0.36	-	-	-
Total Actual Emissions	0.16	0.62	0.62	0.05	8.21	0.83	6.89	**0.15**	**0.15**
Total Criteria Pollutants	**16.14**								

Notes: PM = total particulate matter; PM10 = total particulate matter less than 10 microns in aerodynamic diameter; SOx = sulfur oxides; NOx = nitrogen oxides; VOC = volatile organic compounds; CO = carbon monoxide; and HAP = hazardous air pollutant.

CONCLUSION

As shown in Table 1, the source is well below the major source thresholds. However, as shown in Table 2, the source no longer meets the ROSS requirements and will qualify under its previous Lifetime Operating permit pursuant to 35 IAC 201.

If you need additional information, please don't hesitate to contact me at 317-434-4601 or sclark@asphalt-materials.com.

Sincerely,

Sarah Clark

Sarah Clark
Environmental Compliance Manager

ATTACHMENT A

Permit Application Forms

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Application for a Construction and/or Operating Permit for a Lifetime Source* **(Form APC629)**	**For Illinois EPA use only**	
	Date Received: RECEIVED STATE OF ILLINOIS JAN 04 2021 Environmental Protection Agency BUREAU OF AIR	BOA ID Number: Application. Number: ACES ID Number: Construction Fee Check Amount Rec'd:

*NOTE: This form is intended to be used by all Lifetime Sources (see 35 IAC 201.169(a)) to identify and supply information as required by 35 IAC 201.152, 201.157, 201.159, 201.160, and 201.169 necessary to obtain a Construction Permit, a Joint Construction and Operating Permit, and/or an Operating Permit. Please attach other information, data, and/or completed forms regarding this project as necessary and appropriate.

I. Proposed Project Addressed By Application

1. Working Name of Proposed Project:
   Modification from ROSS to Lifetime Operating Permit
2. Is the Project occurring at a source that already has a permit from the Bureau of Air (BOA)?
   ☐ No ☒ Yes If Yes, provide BOA ID Number: 0 1 9 1 0 5 A C V
3. Does this application request a revision to an existing permit issued by the Bureau of Air (BOA)?
   ☐ No ☒ Yes If Yes, provide Application Number: 7 7 0 4 0 0 4 7
4. Do you request a new or modified Construction Permit? ☐ New ☐ Modified ☒ N/A
5. Do you request a new or modified Joint Construction and Operating Permit?
   ☐ New ☐ Modified ☒ N/A
6. Do you request a new or modified Operating Permit? ☐ New ☒ Modified ☐ N/A
7. If the application is for a construction permit, is the emission unit/air pollution control equipment covered by this application already constructed? ☐ Yes ☐ No ☒ N/A
   If "yes", the date construction was completed must be provided: Date:_____
8. If this application incorporates by reference a previously granted permit(s), has form APC-210, "Data and Information-Incorporation by Reference" been submitted? ☒ Yes ☐ No ☐ N/A

II. Source Information

1. Source name:* Emulsicoat, Inc.
2. Source street address:* 705 East University Avenue

3. City:* Urbana	4. County:* Champaign	5. Zip code:* 61802

* Is information different than previous information? ☐ Yes ☒ No
If yes, then explain what is different and why/when changed.

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

II. Source Information (continued)

ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN EXISTING ID NUMBER OR IF INFORMATION HAS CHANGED.

6. Is the source located within city limits? ☒ Yes ☐ No
   If No, provide Township name:

7. Description of source and product(s) produced:
Emulsicoat, Inc. is an asphalt cement and asphalt emulsion manufacturing facility.

8. Primary Classification Code of source: SIC: 2 9 5 1 or NAICS: _ _ _ _ _ _

9. Latitude (DD:MM:SS.SSSS): 40:06:53.77 N

10. Longitude (DD:MM:SS.SSSS): 88:12:02.01 W

III. Applicant Information

1. Who is the applicant? ☒ Owner ☐ Operator	2. All correspondence to: (check only one) ☒ Owner ☐ Operator ☐ Source
3. Applicant's FEIN: 35-1658552	4. Attention name and/or title for written correspondence: Sarah Clark, Environmental Compliance Manager

IV. Owner Information*

1. Name: Emulsicoat, Inc.

2. Address: 5400 West 86th Street

3. City: Indianapolis	4. State: Indiana	5. Zip code: 46268

* If this information different than previous information, then include a Request for Ownership Change.

V. Operator Information (If Different from Owner)*

1. Name: Same as above

2. Address:

3. City:	4. State:	5. Zip code:

* If this information different than previous information, then include a Request for Operator Change.

VI. Technical Contacts for Application

1. Preferred technical contact: (check only one) ☒ Applicant's contact ☐ Consultant

2. Applicant's technical contact person for application: Sarah Clark, Environmental Compliance Manager

3. Contact person's telephone number: 317-434-4601	4. Contact person's email address: sclark@asphalt-materials.com

5. Applicant's consultant for application: ☒ N/A

6. Consultant's telephone number: ☒ N/A	7. Consultant's email address: ☒ N/A

VII. Other Addresses/Contacts for the Permit Applicant

ONLY COMPLETE FOLLOWING FOR A SOURCE WITHOUT AN EXISTING ID NUMBER OR IF INFORMATION HAS CHANGED.

1. Address for billing Site Fees for the source: ☐ Source ☒ Other (provide below):

Address: 5400 West 86th Street		
City: Indianapolis	State: Indiana	Zip Code: 46268
2. Contact person for Site Fees: Sarah Clark	3. Contact person's telephone number: 317-434-4601	

4. Address for Annual Emission Report for the source: ☐ Source ☒ Other (provide below):

Address: Same as above		
City:	State:	Zip Code:
5. Contact person for Annual Emission Report: Same as above	6. Contact person's telephone number:	

VIII. Summary/Review Of Contents of the Application

NOTE: ANSWERING "NO" TO THESE ITEMS MAY RESULT IN THE APPLICATION BEING DEEMED INCOMPLETE (SEE 35 IAC 201.158)

1. Does the application include a detailed narrative description of the proposed project, and if for an existing source, does the application describe how the new/modified emission units/equipment in the project relate to the existing emission units/equipment at the existing source?	☒ Yes ☐ No
2. Does the application contain a list and detailed description of all the emission units and air pollution control equipment that are part of the project, and if the application includes a request for a revised operating permit, a list and description of all the emission units/equipment that the revised operating permit will need to address?	☒ Yes ☐ No
3. Does the application include a process flow diagram(s) for the project showing new/modified emission units/equipment, and if for an existing source, how it relates to existing emission units/equipment at the existing source?	☐ Yes ☒ No
4. If the project is at a source that has not previously received a permit from the BOA, does the application include a source description, plot plan and site map?	☐ Yes ☐ No ☒ N/A
5. Does the application identify and address all applicable or potentially applicable performance and emissions standards, including: a. State emission standards (35 IAC Chapter I, Subtitle B); b. Federal New Source Performance Standards (40 CFR Part 60); c. Federal standards for Hazardous Air Pollutants (HAPs) (40 CFR Parts 61 and 63)?	☐ Yes ☐ No ☒ N/A ☐ Yes ☐ No ☒ N/A ☐ Yes ☐ No ☒ N/A
6. Does the application include a listing and summary of the requested permitted annual emissions (tons/year) of the proposed project for the new and/or modified emission units for the pollutants to be emitted (CO, NOx, PM/PM10, SO2, VOM, and/or individual and combined HAPs), and if for an existing permitted source, how the new emissions correlate to the total proposed emissions for the entire source?	☐ Yes ☐ No ☒ N/A* * Project does not involve an increase in emissions from new or modified emission units.

VIII. Summary/Review Of Contents of the Application (continued)

7. Does the application include a listing and summary of the requested permitted production, throughput, fuel, or raw material usage limits that correspond to the annual emissions limits of the proposed project in 6 above, and if for an existing permitted source, how they correlate to the proposed usage limits for the entire source?	☒ Yes ☐ No ☐ N/A* * Project does not involve an increase in emissions from new or modified emission units.
8. Does the application include the calculations and methodology (emission factors, test results, etc.) used to develop the emission estimations and the requested permitted annual emission limits in 6 above based on the requested usage limits in 7 above?	☒ Yes ☐ No ☐ N/A* * Project does not involve an increase in emissions from new or modified emission units.
9. Does the application identify and list the emission units and activities at the source that are claimed to be exempt from permitting per 35 IAC 201.146 including a reference to the specific exemption in 35 IAC 201.146 along with justification for the claimed exemption(s)?	☒ Yes ☐ No ☐ N/A* * No exemptions claimed.
10. Does the application include the calculations and methodology (emission factors, regulatory-based emission/material throughput limitations, physical emission/material throughput limitations, maximum allowable pollutant content of materials to be processed, etc.) used to calculate the potential to emit (PTE) for the proposed project and for the entire source for the pollutants to be emitted (CO, NOx, PM/PM10, SO2, VOM, and/or individual and combined HAPs) to demonstrate that the source is eligible for a lifetime operating permit pursuant to 35 IAC 201.169(a)? Potential to emit (PTE), as defined at 35 IAC 211.4970, means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restriction on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation is federally enforceable. Please note that emissions from emission units/activities claimed as exempt per 35 IAC 201.146 in 9 above need to be included in the PTE emission calculations and totals for the source. If it can not be demonstrated that the source is eligible for a lifetime operating permit pursuant to 35 Ill. Adm. Code 201.169(a), (e.g., PTE calculations result in potential emissions of criteria pollutants and/or HAPs exceeding major source threshold levels (i.e., 100 tons/year for criteria pollutants, 10 tons/year for a single HAP and 25 tons/year for total HAPs)), the Permittee should apply for a Clean Air Act Permit Program (CAAPP) permit. To avoid the CAAPP permitting requirements, if applicable, the Permittee may want to consider applying for a Federally Enforceable State Operating Permit (FESOP). A FESOP is an operating permit that contains federally enforceable limits in the form of permit conditions, which effectively restrict the potential emissions of a source to below major source threshold, thereby excluding the source from the CAAPP.	☒ Yes ☐ No
11. If the application contains information that is considered a TRADE SECRET, has such information been properly marked and claimed and other requirements to perfect such a claim been satisfied in accordance with 35 IAC Part 130? Note: "Claimed information will not be legally protected from disclosure to the public if it is not properly claimed or does not qualify as trade secret information.	☐ Yes ☐ No ☒ N/A* * No information in the application is claimed to be a TRADE SECRET

VIII. Summary/Review Of Contents of the Application (continued)

12a.	If the source is located in a county other than Cook County, have two separate complete copies of this application been submitted?	☒ Yes	☐ No ☐ N/A
b.	If the source is located in Cook County, have three separate complete copies of this application been submitted?	☐ Yes	☐ No ☒ N/A
13.	Does the application include a completed "FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION," Form 197-FEE, for the emission units and control equipment for which a permit for construction or modification is being sought?	☐ Yes	☐ No ☒ N/A
14.	Does the application include a check in the proper amount for payment of the Construction permit application fee as identified in the Form 197-FEE?	☐ Yes	☐ No ☒ N/A

IX. Signature Block

Pursuant to 35 IAC 201.159, all applications and supplements thereto shall be signed by the owner and operator of the source, or their authorized agent, and shall be accompanied by evidence of authority to sign the application. Applications without a signed certification will be deemed incomplete.

Authorized Agent Listing

The Owner, Operator, or Source certifies that the listing below shall be considered as evidence for our authorized agents for this project; which shall have the authority to sign the application and supplements.

Consulting Company Name:		☒ N/A
Legal Firm Name:		☒ N/A
Testing Company Name:		☒ N/A
Other:		☒ N/A

Owner, Operator, or Source Signature

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete. In addition, the technical contact person identified above is authorized to submit (by hard copy and/or by electronic copy) any supplemental information related to this application that may be requested by the Illinois EPA.

BY: Chris McGee

AUTHORIZED SIGNATURE

Vice President of Operations

TITLE OF SIGNATORY

Chris McGee

TYPED OR PRINTED NAME OF SIGNATORY

12-20-20

DATE

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL
1021 NORTH GRAND AVENUE, EAST
SPRINGFIELD, ILLINOIS 62702

DATA AND INFORMATION INCORPORATION BY REFERENCE	

THIS FORM IS TO BE USED TO INCORPORATE OR TRANSFER INFORMATION FROM ONE PERMIT APPLICATION TO ANOTHER, INCLUDING THE TRANSFER OF INFORMATION FROM A CONSTRUCTION PERMIT APPLICATION INTO AN OPERATING PERMIT APPLICATION. THIS FORM SHOULD ACCOMPANY THE APPLICATION INTO WHICH INFORMATION IS TO BE TRANSFERRED.

1. NAME OF OWNER: Emulsicoat, Inc.	2. NAME OF CORPORATE DIVISION OR PLANT (IF DIFFERENT FROM OWNER): Urbana 1	
3. STREET ADDRESS OF EMISSION SOURCE: 705 East University Avenue	4. CITY OF EMISSION SOURCE: Urbana	5. IDENTIFICATION NUMBER: 019105ACV

6. APPLICATION NUMBER: 77040047	7. ☐ CONSTRUCTION ☒ OPERATION OF: ROSS

8. SHOULD ALL INFORMATION IN THIS APPLICATION BE INCORPORATED BY REFERENCE OR TRANSFERRED?
☒ YES ☐ NO
IF "NO", LIST ITEMS TO BE INCORPORATED

9a. ITEM TO BE INCORPORATED:	b. PAGE:	c. FLOW DIAGRAM DESIGNATION (IF APPLICABLE):

10. DOES THE DATA & INFORMATION DESCRIBING THESE ITEMS REMAIN TRUE, CORRECT, CURRENT, AND COMPLETE?
☒ YES ☐ NO
IF "NO", SUBMIT THE APPLICATION FORMS AND CLEARLY STATE THE DATA AND INFORMATION WHICH IS NO LONGER TRUE, CORRECT, CURRENT, AND COMPLETE.

11. APPLICATION NUMBER:	12. ☐ CONSTRUCTION ☐ OPERATION OF:

13. SHOULD ALL INFORMATION IN THIS APPLICATION BE INCORPORATED BY REFERENCE OR TRANSFERRED?
☐ YES ☐ NO
IF "NO", LIST ITEMS TO BE INCORPORATED

14a. ITEM TO BE INCORPORATED:	b. PAGE:	c. FLOW DIAGRAM DESIGNATION (IF APPLICABLE):

15. DOES THE DATA & INFORMATION DESCRIBING THESE ITEMS REMAIN TRUE, CORRECT, CURRENT, AND COMPLETE?
☐ YES ☐ NO
IF "NO", SUBMIT THE APPLICATION FORMS AND CLEARLY STATE THE DATA AND INFORMATION WHICH IS NO LONGER TRUE, CORRECT, CURRENT, AND COMPLETE.

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

ATTACHMENT B

Detailed Calculations

Emission Unit	Status	Contents	Comments
Tank 008	Active	Emulsion	
Tank 009	Active	Emulsion	
Tank 010	Active	Emulsion	
Tank 011	Active	Fuel Oil	
Tank 013	Active	Fuel Oil	
Tank 014	Active	Emulsion	
Tank 015	Active	Asphalt	
Tank 017	Active	Asphalt	
Tank 021	Active	Fuel Oil	
Tank 022	Active	Fuel Oil	
Tank 023	Active	Emulsion	
Tank 024	Active	Emulsion	
Tank 025	Active	Emulsion	
Tank 026	Active	Emulsion	
Tank 027	Active	Fuel Oil	
Tank 028	Active	Emulsion	
Tank 030	Active	Emulsion	
Tank 041	Active	Asphalt	
Tank 042	Active	Asphalt	
Tank 043	Active	Asphalt	
Tank 044	Active	Fuel Oil	
Tank 045	Active	Fuel Oil	
Tank 101	Active	Asphalt	
Tank 102	Active	Asphalt	
Tank 103	Active	Asphalt	
Tank 104	Active	Asphalt	
Tank 105	Active	Asphalt	
Tank 106	Active	Asphalt	
Tank 201	Active	Asphalt	
Tank 202	Active	Asphalt	
Tank 203	Active	Asphalt	
Tank 204	Active	Asphalt	
Tank 205	Active	Asphalt	
Tank 300	Active	Emulsifier	
Tank 301	Active	Asphalt	
Tank 302	Active	Asphalt	
Tank 303	Active	Antistrip	
Tank 304	Active	Tall Oil	
Tank 305	Active	Fuel Oil	
Tank 306	Active	Fuel Oil	
Tank 307	Active	UPM	
Tank 401	Active	Emulsifier	
Tank 402	Active	Emulsifier	
Tank 403	Active	Emulsifier	
Tank 404	Active	HCl	
Tank 405	Active	Emulsifier	
Tank 901	Active	Asphalt	
Tank 902	Active	Asphalt	
Tank 903	Active	Asphalt	
Tank 904	Active	Asphalt	
Tank 905	Active	Asphalt	
Tank 906	Active	Asphalt	
Tank 907	Active	Asphalt	
Tank 908	Active	Asphalt	
Tank 909	Active	Asphalt	
Tank 910	Active	Asphalt	
Mist Eliminator	Active		Connected to Tanks 101-105, 201-205, 901-907, LR
Loading Racks	Active		
Boiler	Active		
Hot Oil Heater	Active		
Building Heating	Exempt		Section 201.146 (c)
Grinding and Welding	Exempt		Maintenance Activities, Section 201.146 (y) and (aa)
Parts Washer	Exempt		Section 201.146 (v)

Appendix A: Emission Calculations
Summary of Emissions

Company Name: Emulsicoat, Inc.
Source Address: 705 University Ave, Urbana, Illinois

	Actual Emissions (tons/yr)									
Emission Unit ID	**PM**	**PM10**	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**Total HAPs**	**Worst Single HAP**	
Natural Gas Combustion	0.25	1.01	1.01	0.08	13.23	0.73	11.11	0.25	0.24	Hexane
Fuel Oil Combustion	0.67	0.80	0.71	23.81	6.71	0.11	1.68	2.30E-03	7.04E-04	Selenium
Storage Tanks and Mixing Tanks*	-	-	-	-	-	0.02	-	negl.	negl.	-
Loading Racks	-	-	-	-	-	1.17E-05	-	1.53E-07	9.39E-08	Polycyclic Organic Matter (POM)
Fugitive Connections	-	-	-	-	-	0.36	-	-	-	-
Parts Washer	-	-	-	-	-	0.49	-	-	-	-
Cutting and Grinding	1.31E-02	1.64E-03	1.64E-03	-	-	-	-	-	-	-
Welding	6.88E-06	6.88E-06	6.88E-06	-	-	-	-	7.50E-07	negl.	-
Total PTE of Entire Source	**0.94**	**1.81**	**1.72**	**23.89**	**19.93**	**1.71**	**12.79**	**0.25**	**0.24**	**Hexane**

	Actual Emissions (tons/mo)									
Emission Unit ID	**PM**	**PM10**	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**Total HAPs**	**Worst Single HAP**	
Natural Gas Combustion	0.16	0.62	0.62	0.05	8.21	0.45	6.89	0.15	0.15	Hexane
Fuel Oil Combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	Selenium
Storage Tanks and Mixing Tanks*	-	-	-	-	-	0.00	-	negl.	negl.	-
Loading Racks	-	-	-	-	-	6.27E-06	-	8.15E-08	5.02E-08	Polycyclic Organic Matter (POM)
Fugitive Connections	-	-	-	-	-	0.36	-	-	-	-
Total PTE of Entire Source	**0.16**	**0.62**	**0.62**	**0.05**	**8.21**	**0.81**	**6.89**	**0.15**	**0.15**	**Hexane**
Total Criteria	**16.12**									

Notes:
*The Potential Emissions from the storage tanks and mixing tanks have been evaluated using the US EPA TANKS Program (version 4.09) and determined negligible (negl.).

Appendix A: Actual Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Emulsicoat, Inc.
Source Address: 705 University Ave, Urbana, Illinois

Unit ID	Maximum Capacity (Each) MMBtu/hr
Boiler	20.09
Hot Oil Heater	10.72
	30.80

Total Heat Input Capacity MMBtu/hr	HHV (mmBtu/ mmscf)	Actual Throughput MMCF/yr	Max Actual Throughput MMCF/mo
20.09	1020	172.5	90.3
10.72	1020	92.1	73.9
		264.6	164.2

1. Potential to Emit Emissions

	Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	direct PM2.5* 7.6	SO2 0.6	NOx 100 **see below	VOC 5.5	CO 84
Potential Emission in tons/yr	0.25	1.01	1.01	0.08	13.23	0.73	11.11

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Boiler Actual Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Hot Oil Heater Actual Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	2.8E-04	1.6E-04	9.9E-03	2.4E-01	4.5E-04	0.25

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	6.6E-05	1.5E-04	1.9E-04	5.0E-05	2.8E-04	7.2E-04
					Total HAPs	0.25
					Worst HAP	0.24

Methodology is the same as above.
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

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2. Actual Emissions

	Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	direct PM2.5* 7.6	SO2 0.6	NOx 100 **see below	VOC 5.5	CO 84
Potential Emission in tons/yr	0.16	0.62	0.62	0.05	8.21	0.45	6.89

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Boiler Actual Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 4584 hrs/mo x 1 MMCF/1,020 MMBtu
Hot Oil Heater Actual Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 7032 hrs/mo x 1 MMCF/1,020 MMBtu
Emission (tons/mo) = Throughput (MMCF/mo) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.7E-04	9.8E-05	6.2E-03	1.5E-01	2.8E-04	0.15

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	4.1E-05	9.0E-05	1.1E-04	3.1E-05	1.7E-04	4.6E-04
					Total HAPs	0.15
					Worst HAP	0.15

Methodology is the same as above.
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Emission (tons/mo) = Throughput (MMCF/mo) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)
#1 and #2 Fuel Oil

Company Name: Emulsicoat, Inc.
Source Address: 705 University Ave, Urbana, Illinois

Unit ID	Maximum Capacity (Each) MMBtu/hr
HO-02	10.72

Maximum Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
10.72	670.7	0.5

	Pollutant						
	PM*	PM10**	direct PM2.5***	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.0	2.38	2.13	71 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	0.67	0.80	0.71	23.81	6.71	0.11	1.68

Methodology
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu
Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)
*PM emission factor is filterable PM only.
**PM10 emission factor is filterable PM10 of 1.08 lb/kgal + condensable PM emission factor of 1.3 lb/kgal.
***Direct PM2.5 emission factor is filterable PM2.5 of 0.83 lb/kgal + condensable PM emission factor of 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	1.9E-04	1.4E-04	1.4E-04	1.4E-04	4.2E-04

	HAPs - Metals (continued)				
	Mercury	Manganese	Nickel	Selenium	
Emission Factor in lb/mmBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05	
Potential Emission in tons/yr	1.4E-04	2.8E-04	1.4E-04	7.0E-04	
				Total HAPs	**0.00**
				Worst HAP	**7.04E-04**

Methodology
No data was available in AP-42 for organic HAPs.
Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton

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Actual MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
0.00	0.0	0.5

	Pollutant						
	PM*	PM10**	direct PM2.5***	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.0	2.38	2.13	71 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Methodology
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu
Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)
*PM emission factor is filterable PM only.
**PM10 emission factor is filterable PM10 of 1.08 lb/kgal + condensable PM emission factor of 1.3 lb/kgal.
***Direct PM2.5 emission factor is filterable PM2.5 of 0.83 lb/kgal + condensable PM emission factor of 1.3 lb/kgal.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

	HAPs - Metals (continued)				
	Mercury	Manganese	Nickel	Selenium	
Emission Factor in lb/mmBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05	
Potential Emission in tons/yr	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
				Total HAPs	**0.00**
				Worst HAP	**0.00E+00**

Methodology
No data was available in AP-42 for organic HAPs.
Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton

Appendix A: Emission Calculations
Emissions from Asphalt Loading Racks

Company Name: Emulsicoat, Inc.
Source Address: 705 University Ave, Urbana, Illinois

1. Determine AP 42 Emission Factors

Emission Unit ID	Maximum Loading Rate (gal/min)	
LR-1	405	Anionic
LR-2	350	Anionic
LR-3	653	Anionic
LR-4	300	Cationic
LR-5	292	Cationic
LR-6	520	Hot Asphalt
LR-7	310	Hot Asphalt
LR-8	260	SC
Total	3090	

The loading racks will be used to splash load dedicated service asphalt cargo tank trucks.
According to AP 42, Chapter 5.2 - Transportation and Marketing of Petroleum Liquids (01/95), the VOC emission factors for the truck and rail loading racks can be estimated from the following equation:

$$L = 12.46 \times (SPM)/T$$

where:
L = loading loss (lb/kgal)
S = a saturation factor (see AP 42, Table 5.2-1)
P = true vapor pressure of the liquid loaded (psia)
M = molecular weight of vapors
T = temperature of the bulk liquid loaded (degree R)

Previous Stored Liquid	S	P (psia)	M (lb/mole lb)	T (degree R)	L (lb/kgal)
Asphalt (normal)	1.45	1.900E-09	320	760	1.446E-08
		(Petro. Asphalt)	(Petro. Asphalt)	(F^0+460)	

2. Potential to Emit (PTE) VOC Before Control

Loading rate for trucks: 185 kgal/hr
VOC PTE before Control for Trucks (ton/yr) = Loading rate for trucks (kgal/hr) x 8,760 hr/yr x L (lb/kgal) x 1 ton/2,000 lb = **1.17E-06** ton/yr

3. Potential to Emit HAPs

Material / HAP	CAS #	HAP Fraction (worst case)**	PTE of HAP before Control (ton/yr)
Hydrogen Sulfide (H_2S)	7783-06-4	0.50%	5.87E-08
Paraffinic Distillate Solvent / Polycyclic Organic Matter (POM)*	64742-04-7	0.80%	9.39E-08
		Total HAPs:	1.53E-07

Methodology
**Paraffinic Distillate Solvent (64742-04-7) is a a complex combination of hydrocarbons obtained from the refinery streams produced by the processing of crude oil; consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C20 through C50. This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons. For these calcuations, the HAP type is assumed to be Polycyclic Organic Matter (POM).

**HAP content (Fraction) is based on the worst case PG Asphalt Binder Material Safety Data Sheet (MSDS) of 05/30/2008
PTE of HAP Before Control (ton/yr) = PTE of VOC Before Control for Trucks (ton/yr) x HAP Fraction

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4. Actual VOC Before Control
VOC PTE before Control for Trucks (ton/mo) = Loading rate for trucks (kgal/hr) x 4,680 hr/mo x L (lb/kgal) x 1 ton/2,000 lb = **6.27E-06** ton/mo

5. Actual HAPs

Material / HAP	CAS #	HAP Fraction (worst case)**	PTE of HAP before Control (ton/yr)
Hydrogen Sulfide (H_2S)	7783-06-4	0.50%	3.14E-08
Paraffinic Distillate Solvent / Polycyclic Organic Matter (POM)*	64742-04-7	0.80%	5.02E-08
		Total HAPs:	8.15E-08

Methodology
**Paraffinic Distillate Solvent (64742-04-7) is a a complex combination of hydrocarbons obtained from the refinery streams produced by the processing of crude oil; consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C20 through C50. This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons. For these calcuations, the HAP type is assumed to be Polycyclic Organic Matter (POM).

**HAP content (Fraction) is based on the worst case PG Asphalt Binder Material Safety Data Sheet (MSDS) of 05/30/2008
PTE of HAP Before Control (ton/mo) = PTE of VOC Before Control for Trucks (ton/mo) x HAP Fraction

Appendix A: Emission Calculations
Emissions from Fugitive Connection Emissions

Company Name: Emulsicoat, Inc.
Source Address: 705 University Ave, Urbana, Illinois

1. Potential to Emit Emissions

	Emission Factor (lb. / hr. / source)	Asphalt Factor	No. of Sources	Hours	VOC Emissions (tons)
Valves	0.000507	0.5	20	8,760.00	0.022
Pump Seals	0.029767	0.5	5	8,760.00	0.326
Flanges and Connections	0.000132	0.5	50	8,760.00	0.014
				Total (tons)	**0.363**

Assumptions Used
200 Valves but only 20 in use at any one time.
25 pumps but only 5 in use at any one time.
500 flanges, most under insulation, only 50 with product flowing at any

Emission Factors from US EPA Protocol For Equipment Leak Emission Estimates, Table 2-6, EPA-453/R-95-017, November 1995. Factors for heavy oil reduced 50% for asphalt.

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2. Actual Emissions

	Emission Factor (lb. / hr. / source)	Asphalt Factor	No. of Sources	Hours	VOC Emissions (tons)
Valves	0.000507	0.5	20	8,760.00	0.022
Pump Seals	0.029767	0.5	5	8,760.00	0.326
Flanges and Connections	0.000132	0.5	50	8,760.00	0.014
				Total (tons)	**0.363**

Assumptions Used
200 Valves but only 20 in use at any one time.
25 pumps but only 5 in use at any one time.
500 flanges, most under insulation, only 50 with product flowing at any

Emission Factors from US EPA Protocol For Equipment Leak Emission Estimates, Table 2-6, EPA-

Appendix A: Emission Calculations
Cold Cleaning and Coolant Usage

Company Name: Emulsicoat, Inc.
Source Address: 1001 Saline Ct, Urbana, Illinois

Material	Usage (gal/day)	Density (lbs/gal)	Volume % VOC	Weight % VOC	VOC Emissions (tons/yr)
Cold Cleaner Degreaser					
Crystal Clean 142 Mineral Spirits	0.397	6.70	100%	100%	0.486

Methodology
VOC emissions (tons/yr) = Usage (gal/day) x Density (lbs/gal) x Weight % VOC x 365 days/yr / 2,000 lbs/ton
There are no HAPs in these materials.

Appendix A: Emission Calculations
Cutting and Grinding

Company Name: Emulsicoat, Inc.
Source Address: 1001 Saline Ct, Urbana, Illinois

Unit ID	Quantity	Maximum Capacity (lbs/hr)	Emission Factors* (lbs/ton)		Particulates			
					PM		PM10/2.5**	
			PM	PM10	(lbs/hr)	(tons/yr)	(lbs/hr)	(tons/yr)
Maintenance Activities								
Pipe Threaders	2	0.5	2.4	0.3	0.00	0.01	0.00	0.00
Pipe Cutter	1	0.5	2.4	0.3	0.00	0.00	0.00	0.00
Grinder	1	0.5	2.4	0.3	0.00	0.00	0.00	0.00
Saw	1	0.5	2.4	0.3	0.00	0.00	0.00	0.00
Totals						**0.01**		**0.00**

Notes:

*The emission factors for PM and PM10 are from AP 42-11.24-2 Metallic Minerals Processing-Dry Grinding (Table 11.24-2, SCC#30302410). In the absence of valid AP 42 emission factors, PM2.5 emissions are assumed equal to PM10 emissions.

**Under the Part 70 Permit Program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a regulated air pollutant. US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Methodology:

Emission Rate for PM and PM10 before controls (lbs/hr) = Maximum Capacity (lbs/hr) * Emission Factor (lbs/ton) * (1 ton/2000 lbs)

Emission Rate for PM and PM10 before controls (tons/yr) = Emission Rate (lbs/hr) * (8760 hrs/yr) * (1 ton/2000 lbs)

Appendix A: Emission Calculations
Cutting and Grinding

Company Name: Emulsicoat, Inc.
Source Address: 1001 Saline Ct, Urbana, Illinois

Process	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPs (lbs/hr)
WELDING			$PM=PM_{10}=PM_{2.5}$	Mn	Ni	Cr	$PM=PM_{10}=PM_{2.5}$	Mn	Ni	Cr	
Metal Inert Gas (MIG)	2	0.5	0.0055	0.0005	0.0001		0.000	0.000	0.000	0.000	0.000
Shielded Metal Arc	3	0.5	0.0055	0.0005	0.0001		0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS											
Potential Emissions lbs/hr							0.000	0.000	0.000	0.000	0.000
Potential Emissions lbs/dy							0.000	0.000	0.000	0.000	0.000
Potential Emissions tons/yr							0.000	0.000	0.000	0.000	0.000

Notes:
*Emissions Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

Methodology:
Welding emissions (lb/hr) = # of stations * max lbs (electrode used/hr/station) * emission factor (lb pollutant/lb of electrode)
Emissions (lb/day) = emissions (lb/hr) * 8 (hrs/day)
Emissions (ton/yr) = emissions (lb/hr) * 2,000 (hrs/yr) / 2,000 (lbs/ton)