



Crosspoint

25 May 2016

West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Subject: NSR Permit (Synthetic Minor) Application
Cummins Crosspoint, LLC
Cross Lanes, WV



ORIGINAL

Dear Sir/Madam:

Please find enclosed an NSR Permit (Synthetic Minor) Application for the Cummins Crosspoint, LLC (Cummins) facility located at 602 New Goff Mountain Rd. in Cross Lanes, West Virginia.

This facility was recently acquired by Cummins. There are currently no air permits issued for this facility, but it was determined as part of a compliance audit that air permits would be required for certain sources at the facility. This is being disclosed to WVDEP and EPA under the federal and state audit policies.

The potential emissions associated with this facility exceed Title V threshold (100 tpy) for NOx. An annual limit on fuel usage for the Engine Dynamometer (dyno) (Source 1S) of 190,000 gallons per year on a 12-month rolling average is being proposed in order to remain below Title V emission thresholds and avoid Title V requirements. This limit on fuel usage at the Engine Dyno would result in facility-wide maximum potential emissions of 95.88 tpy of NOx (all other regulated pollutants' potential to emit falls below major source thresholds). Cummins proposes monthly recordkeeping for fuel used in the Engine Dyno in order to show compliance with this proposed limit. No other emission units at the facility would require a production limit in order to avoid Title V emission thresholds.

This application package includes the applicable NSR Permit Application forms and attachments. A Table of Contents is provided to list all forms and attachments.

Please contact me at (317) 240-1965 or john.w.peaper@cummins.com should you have any questions.

Sincerely,

John Peaper

Cummins Crosspoint, LLC
2601 Fortune Circle East
Indianapolis, IN 46241



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Division of Air Quality
601 57th Street, SE
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NSR Permit Application Form



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

**APPLICATION FOR NSR PERMIT
AND
TITLE V PERMIT REVISION
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

- CONSTRUCTION MODIFICATION RELOCATION
 CLASS I ADMINISTRATIVE UPDATE TEMPORARY
 CLASS II ADMINISTRATIVE UPDATE AFTER-THE-FACT

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT MINOR MODIFICATION
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant (as registered with the WV Secretary of State's Office): Cummins Crosspoint, LLC		2. Federal Employer ID No. (FEIN): 205012258	
3. Name of facility (if different from above):		4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH	
5A. Applicant's mailing address: 602 New Goff Mountain Rd. Cross Lanes, WV 25313		5B. Facility's present physical address: 602 New Goff Mountain Rd. Cross Lanes, WV 25313	
6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO - If YES, provide a copy of the Certificate of Incorporation/Organization/Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A . - If NO, provide a copy of the Certificate of Authority/Authority of L.L.C./Registration (one page) including any name change amendments or other Business Certificate as Attachment A .			
7. If applicant is a subsidiary corporation, please provide the name of parent corporation:			
8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i> ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO - If YES, please explain: The applicant owns the site. - If NO, you are not eligible for a permit for this source.			
9. Type of plant or facility (stationary source) to be constructed, modified, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Engine Repair and Rebuild Facility		10. North American Industry Classification System (NAICS) code for the facility: 441310	
11A. DAQ Plant ID No. (for existing facilities only): -		11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): N/A	

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP as Attachment B**.

Exit I-64 onto WV-622 S. Continue on WV-622 S for 1 mile, the facility is located on the right.

12.B. New site address (if applicable):	12C. Nearest city or town: Cross Lanes, WV	12D. County: Kanawha
12.E. UTM Northing (KM): 4250.102	12F. UTM Easting (KM): 431.207	12G. UTM Zone: 17
13. Briefly describe the proposed change(s) at the facility: N/A		
14A. Provide the date of anticipated installation or change: / / - If this is an After-The-Fact permit application, provide the date upon which the proposed change did happen: 06/01/2009		14B. Date of anticipated Start-Up if a permit is granted: / /
14C. Provide a Schedule of the planned Installation of/Change to and Start-Up of each of the units proposed in this permit application as Attachment C (if more than one unit is involved).		
15. Provide maximum projected Operating Schedule of activity/activities outlined in this application: Hours Per Day 24 Days Per Week 7 Weeks Per Year 52		
16. Is demolition or physical renovation at an existing facility involved? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
17. Risk Management Plans. If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your Risk Management Plan (RMP) to U. S. EPA Region III.		
18. Regulatory Discussion. List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (<i>if known</i>). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (<i>if known</i>). Provide this information as Attachment D .		

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR22 and 45CSR13).
20. Include a Table of Contents as the first page of your application package.
21. Provide a Plot Plan , e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as Attachment E (Refer to Plot Plan Guidance). - Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).
22. Provide a Detailed Process Flow Diagram(s) showing each proposed or modified emissions unit, emission point and control device as Attachment F .
23. Provide a Process Description as Attachment G . - Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- | | | |
|--|--|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions | <input type="checkbox"/> Quarry |
| <input type="checkbox"/> Chemical Processes | <input type="checkbox"/> Hot Mix Asphalt Plant | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant | <input type="checkbox"/> Incinerator | <input type="checkbox"/> Storage Tanks |
| <input type="checkbox"/> Grey Iron and Steel Foundry | <input type="checkbox"/> Indirect Heat Exchanger | |
- General Emission Unit, specify (7) total

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

- | | | |
|---|---|--|
| <input type="checkbox"/> Absorption Systems | <input type="checkbox"/> Baghouse | <input type="checkbox"/> Flare |
| <input type="checkbox"/> Adsorption Systems | <input type="checkbox"/> Condenser | <input type="checkbox"/> Mechanical Collector |
| <input type="checkbox"/> Afterburner | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |

Other Collectors, specify (2) total

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

➤ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES NO

➤ If **YES**, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice – Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership |
| <input type="checkbox"/> Authority of Governmental Agency | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned **Responsible Official** / **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE _____

John Peaper
(Please use blue ink)

DATE: _____

3/25/2016
(Please use blue ink)

35B. Printed name of signee: John Peaper

35C. Title: HSE Manager

35D. E-mail:
john.w.peaper@cummins.com

36E. Phone: (317) 240-1965

36F. FAX: N/A

36A. Printed name of contact person (if different from above): Same as above

36B. Title:

36C. E-mail:

36D. Phone:

36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate | <input checked="" type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet |
| <input checked="" type="checkbox"/> Attachment B: Map(s) | <input checked="" type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s) |
| <input type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input checked="" type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s) |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan | <input type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s) | <input checked="" type="checkbox"/> Attachment P: Public Notice |
| <input checked="" type="checkbox"/> Attachment G: Process Description | <input type="checkbox"/> Attachment Q: Business Confidential Claims |
| <input checked="" type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input checked="" type="checkbox"/> Attachment R: Authority Forms |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table | <input type="checkbox"/> Attachment S: Title V Permit Revision Information |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee |

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
 - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
 - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
 - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
 - NSR permit writer should notify a Title V permit writer of draft permit,
 - Public notice should reference both 45CSR13 and Title V permits,
 - EPA has 45 day review period of a draft permit.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

Certificate of Authority of L.L.C

**WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE**

ISSUED TO:
**CUMMINS CROSSPOINT LLC
602 NEW GOFF MTN RD
CROSS LANES, WV 25313-1428**

BUSINESS REGISTRATION ACCOUNT NUMBER: **1011-4470**

This certificate is issued on: **06/14/2010**

*This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with W. Va. Code § 11-12.*

*The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.*

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

**TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of
this certificate displayed at every job site within West Virginia.**

Indiana Secretary of State
Packet: 2006060800606
Filing Date: 08/04/2015
Effective Date: 08/03/2015

State of Indiana
Office of the Secretary of State

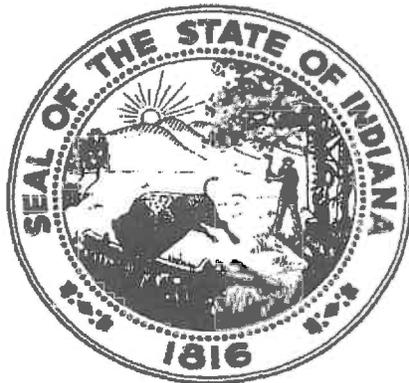
CERTIFICATE OF AMENDMENT
of
CUMMINS CROSSPOINT, LLC

I, CONNIE LAWSON, Secretary of State of Indiana, hereby certify that Articles of Amendment of the above Domestic Limited Liability Company (LLC) have been presented to me at my office, accompanied by the fees prescribed by law and that the documentation presented conforms to law as prescribed by the provisions of the Indiana Business Flexibility Act.

The name following said transaction will be:

CUMMINS CROSSPOINT LLC

NOW, THEREFORE, with this document I certify that said transaction will become effective Monday, August 03, 2015.



In Witness Whereof, I have caused to be affixed my signature and the seal of the State of Indiana, at the City of Indianapolis, August 4, 2015.

Connie Lawson

CONNIE LAWSON,
SECRETARY OF STATE

2006060800606 / 2015080565418

WEST VIRGINIA CONSUMERS SALES AND SERVICE TAX AND USE TAX

EXEMPTION CERTIFICATE

CANNOT BE USED TO PURCHASE GASOLINE OR SPECIAL FUEL



WV/CST-280
(Rev. 905)

All sales of tangible personal property or taxable services are presumed to be subject to tax unless a properly completed Exemption Certificate or a Direct Pay Permit number is provided. Read instructions on reverse side before completing this certificate.

NAME OF VENDOR	DATE	CHECK APPLICABLE BOX:	
		<input type="checkbox"/> SINGLE PURCHASE CERTIFICATE	<input type="checkbox"/> BLANKET CERTIFICATE
STREET ADDRESS	CITY	STATE	ZIP CODE

TO BE COMPLETED BY PURCHASER: I, the undersigned, hereby certify that I am making an exempt purchase and hold a valid Business Registration Certificate:

Enter Tax Identification Number 2002-8213

My principle business activity is sale and service of diesel engines

I claim an exemption for the following reason (Check applicable box or boxes):

PURCHASE FOR RESALE

Purchase of tangible personal property or taxable services for resale or for use in performing taxable services where such property becomes a component part of the property upon which the services are performed and will be actually transferred to the purchaser. WV Code § 11-15-9(a)(9)

PURCHASE BY AN EXEMPT COMMERCIAL AGRICULTURAL PRODUCER

- A. Purchase of tangible personal property or taxable services for use or consumption in the commercial production of an agricultural product. But not purchases for the construction of, or permanent improvement to real property or purchases of gasoline or fuel. WV Code § 11-15-9(a)(8)
- B. Purchase of propane for use in poultry houses for heating purposes. WV Code § 11-15-9(a)(18)

TAX EXEMPT ORGANIZATIONS

- A. **GOVERNMENT** - Purchases by governmental agencies and institutions of (1) the United States; (2) this State (including its local governments); and (3) any other State (and its local governments) which provides this same exemption to this State. Such purchases by government employees are not exempt unless they are on government business and are billed to and paid for directly by the government. Private persons doing business with government may not claim this exemption. WV Code § 11-15-9(a)(3)
- B. **CERTAIN NONPROFIT ORGANIZATIONS** - Purchases by a corporation or organization which has a current registration certificate and which is exempt from federal income taxes under section § 501(c)(3) or (c)(4) of the Internal Revenue Code. These organizations must meet all of the requirements set forth in WV Code § 11-15-9(a)(8). For information concerning these requirements refer to publication TSD-320. WV Code § 11-15-9(a)(8)
- C. **SCHOOLS** - Purchases by a school with its principal campus in this State which is approved by the State of West Virginia to award degrees and which is exempt from federal and state income taxes under section § 501(c)(3) of the Internal Revenue Code. WV Code § 11-15-9(a)(15)
- D. **CHURCHES** - Purchases of services, equipment, supplies, food for meals and materials directly used or consumed by churches which make no charge whatsoever for the services they render. The purchase must be paid for directly out of the church treasury. WV Code § 11-15-9(a)(5)

PURCHASES OF CERTAIN SPECIFIC SERVICES AND TANGIBLE PERSONAL PROPERTY

- A. Purchases of electronic data processing services and related software but not data processing equipment, materials and supplies. WV Code § 11-15-9(a)(21)
- B. Purchases of services by one corporation, partnership or limited liability company from another corporation, partnership or limited liability company but only when the entities are members of the same controlled group or related taxpayers as defined in Section 267 of the Internal Revenue Code. WV Code § 11-15-9(a)(23)
- C. Purchases of computer hardware and software directly incorporated into manufactured products; certain leases; electronic data processing service; computer hardware and software directly used in communication; educational software; internet advertising; high technology business services directly used in fulfillment of a government contract. WV Code § 11-15-9h
- D. Purchases of motion picture films, coin-operated video arcade machines and other video arcade games for any use upon which there will be a charge subject to sales tax. WV Code § 11-15-9(a)(32)
- E. Purchases by a licensed carrier of persons or property, or by a government entity, of aircraft repair, remodeling and maintenance services for an aircraft, engine or other component part of an aircraft, or purchases of tangible personal property that is permanently affixed as a component part of an aircraft as part of the repair, remodeling or maintenance of aircraft, aircraft engines or aircraft component parts, and purchases by a licensed carrier of persons or property, or by a government entity, of machinery, tools or equipment, directly used or consumed exclusively in the repair, remodeling or maintenance of aircraft, aircraft engines or aircraft component parts. WV Code § 11-15-9(a)(33)

REVERSE SIDE OF EXEMPTION CERTIFICATE MUST BE COMPLETED TO BE CONSIDERED VALID

I understand that this certificate may not be used to make tax free purchases of items or services which are not for an exempt purpose and that I will pay the Consumers Sales or Use Tax on tangible personal property or services purchased pursuant to this certificate and subsequently used or consumed in a taxable manner. In addition, I understand that I will be liable for the tax due, plus substantial penalties and interest, for any erroneous or false use of this certificate.

NAME OF PURCHASER Cummins Crosspoint LLC	STREET ADDRESS 2601 Fortune Circle East, Ste 300c	
SIGNATURE OF OWNER, PARTNER, OFFICER OF CORPORATION, ETC. C. R. P. H.	CITY Indianapolis	
TITLE Controller	STATE Indiana	ZIP CODE 46241

GENERAL INSTRUCTIONS

An Exemption Certificate may be used only to claim exemption from tax upon a purchase of tangible personal property or services which will be used for an exempt purpose as stated on the front of this form.

A purchaser may file a blanket Exemption Certificate with the vendor to cover additional purchases of the same general type of property or service. However, each subsequent sales slip or purchase invoice evidencing a transaction covered by a blanket Exemption Certificate must show the purchaser's name, address and Business Registration Certificate Number for purposes of certification.

INSTRUCTIONS FOR PURCHASER

To purchase tangible personal property or services tax exempt, you must possess a valid Business Registration Certificate and you must properly complete this Exemption Certificate and present it to your supplier. To be properly completed, all entries on this Exemption Certificate must be filled in.

Your Business Registration Certificate (and any duplicates) may be suspended or revoked if you or someone acting on your behalf willfully issues this certificate for the purpose of making a tax exempt purchase of tangible personal property and/or services that is not used in a tax exempt manner (as stated on the front of this form).

When property or services are purchased tax exempt with an Exemption Certificate, but later used or consumed in a non exempt manner, the purchaser must pay Sales or Use Tax on the purchase price.

The willful issuance of a false or fraudulent Exemption Certificate with the intent to evade Sales or Use Tax is a misdemeanor.

Your misuse of this Certificate with intent to evade the Sales or Use Tax shall also result in your being subject to:

A penalty of fifty percent of the tax that would have been due had there not been a misuse of such certificate.

This is in addition to any other penalty imposed by the Law.

In the event you make false or fraudulent use of this Certificate with intent to evade the tax, you may be assessed for the tax at any time subsequent to such use.

INSTRUCTIONS FOR VENDOR

At the time the property is sold or the service is rendered, you must obtain from your customer this Certificate, properly completed, (or a Direct Pay Permit number issued by the West Virginia Department of Tax and Revenue), or the sale will be deemed a taxable sale, unless the property or service sold is exempt per se from Sales Tax. Your failure to collect tax on such taxable sale will make you personally liable for the tax, plus penalties and interest.

Additional information may be required to substantiate that the sale was for exempt purposes. In order for this Certificate to be properly completed, it must be issued by a purchaser who has a valid Business Registration Certificate and must have all entries completed by the purchaser.

A timely received certificate which contains a material deficiency will be considered satisfactory if such deficiency is subsequently corrected.

You must keep this certificate for at least three years after the due date of the last return to which it relates, or the date when such return was filed, if later.

You must maintain a reasonable method of associating a particular exempt sale to a customer with the Exemption Certificate you have on file for such customer.

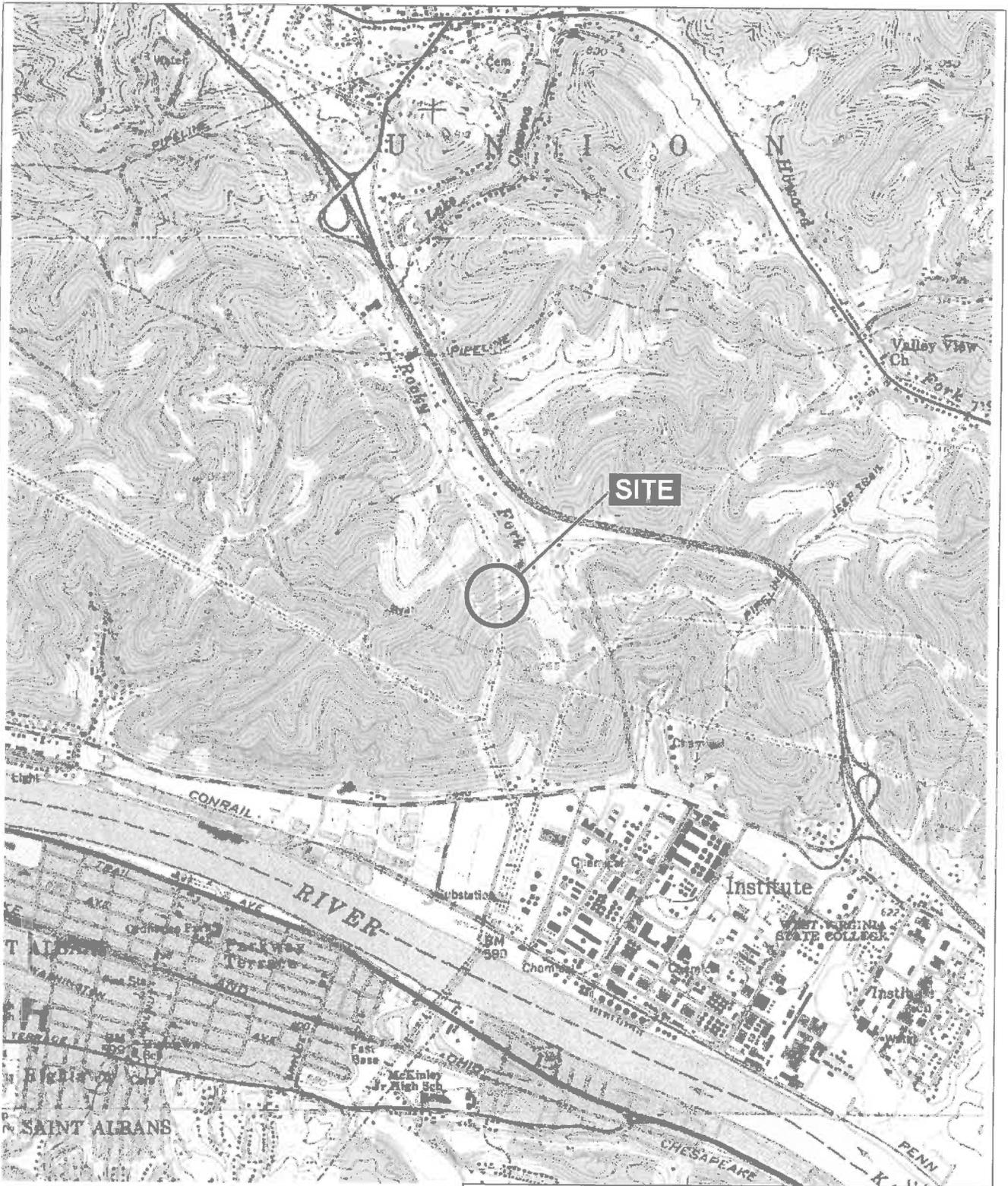
INSTRUCTIONS FOR VENDOR AND PURCHASER

If you, as vendor or as a purchaser, engage in any business activity in West Virginia without possessing a valid Business Registration Certificate (and you do not clearly qualify for an exemption), you shall be subject to a penalty in an amount not exceeding \$100 for the first day on which such sales or purchases are made, plus an amount not exceeding \$100 for each subsequent day on which such sales or purchases are made.

Please begin using this Certificate immediately.

ATTACHMENT B

Map



MAP SOURCE: USGS

SITE COORDINATES: 38°23'47"N, 81°47'16"W

**HALEY
ALDRICH**

CUMMINS CROSSPOINT, LLC
602 NEW GOFF MOUNTAIN RD
CROSS LANES, WEST VIRGINIA

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
APRIL 2016

FIGURE 1

Regulatory Discussion

FEDERAL REGULATIONS

Wet spray painting occurs in a paint booth (source 3S) at this facility, but it is not subject to 40 CFR Subpart 63 HHHHHH as there are no target HAP metals in the coatings.

This facility operates an emergency generator (source 6S) as needed. It is a 47 kW (63 hp) diesel engine installed in May of 2009. As such, the unit is subject to 40 CFR 63 Subpart ZZZZ (RICE). The unit is subject to all applicable requirements for new compression ignition emergency generators at an area source of HAPs.

The potential emissions associated with this facility exceed the Title V threshold for NO_x (100 tpy). An annual limit on fuel usage for the Engine Dynamometer (dyno) (Source 1S) of 190,000 gallons per year on a 12-month rolling average is being proposed in order to remain below Title V emission thresholds and avoid Title V requirements. This limit on fuel usage at the Engine Dyno would result in facility-wide maximum emissions of 95.88 tpy of NO_x (all other regulated pollutants' potential to emit falls below major source thresholds). Cummins proposes monthly recordkeeping for fuel used in the Engine Dyno in order to show compliance with this proposed limit. No other emission units at the facility would require a production limit in order to avoid exceeding Title V emission thresholds.

There are no other federal standards that are applicable for this project. No National Emission Standard for Hazardous Air Pollutant (NESHAP) standard has been promulgated at 40 CFR 61 that would be applicable to the proposed project.

STATE REGULATIONS

West Virginia Rule 45CSR21 regulates prevention and control of air pollution from the emission of volatile organic compounds. 45-21-19 regulates the coating of miscellaneous metal parts. The facility is exempt from the emission limits of this section per 45-21-19.1.d as actual emissions prior to control devices do not exceed 15 pounds of VOC per day. However, the facility must comply with the certification, recordkeeping, and reporting requirements of section 45-21-19-7.

West Virginia Rule 45CSR13 provides the requirements for permits for construction, modification, and operation of stationary sources of air pollutants, notification requirements, administrative updates, temporary permits, general permits, permission to commence construction, and procedures for evaluation. This facility is defined as a Stationary Source per part 45-13-2.24 of this rule as the uncontrolled potential emissions exceed six (6) pounds per hour, and therefore is subject to this rule.

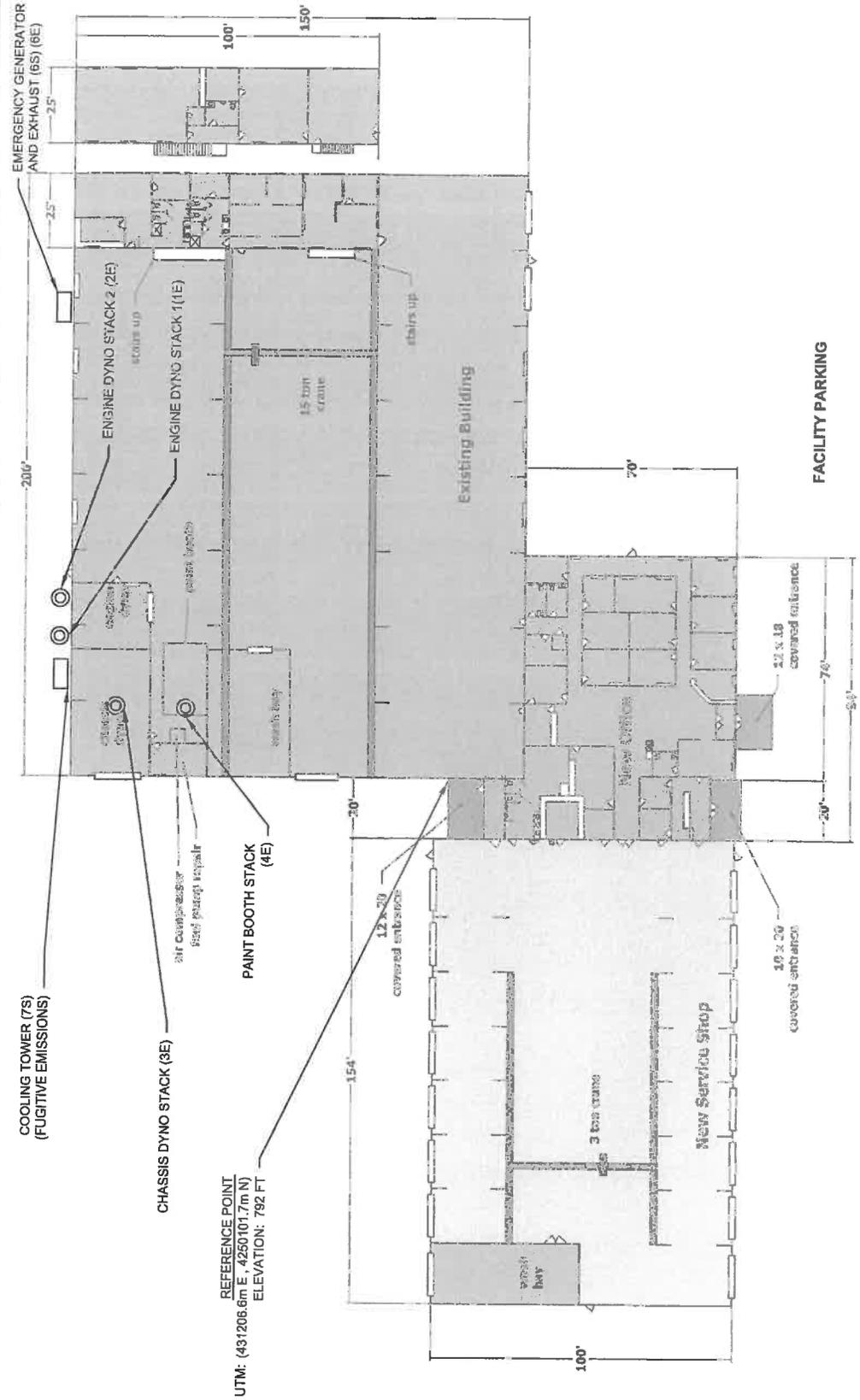
This facility is not subject to West Virginia Rule 45CSR30 "Requirements for Operating Permits" as the facility is not classified as a Major Source defined in 45-30-2.26 due to the proposed production limitations which will limit all regulated pollutants below Major Source thresholds.

West Virginia Rule 45CSR29 provides requirements for submission of emission statements for VOC and NO_x. This rule may apply to this facility as it is located in Kanawha County and potential VOC and NO_x

emissions are greater than 25 tons per year. However, if actual emissions of VOC and NOx are below 25 tons per year the facility is exempt per 45-29-3.1.

ATTACHMENT E

Plot Plans



LEGEND



EXHAUST STACK

NOTES

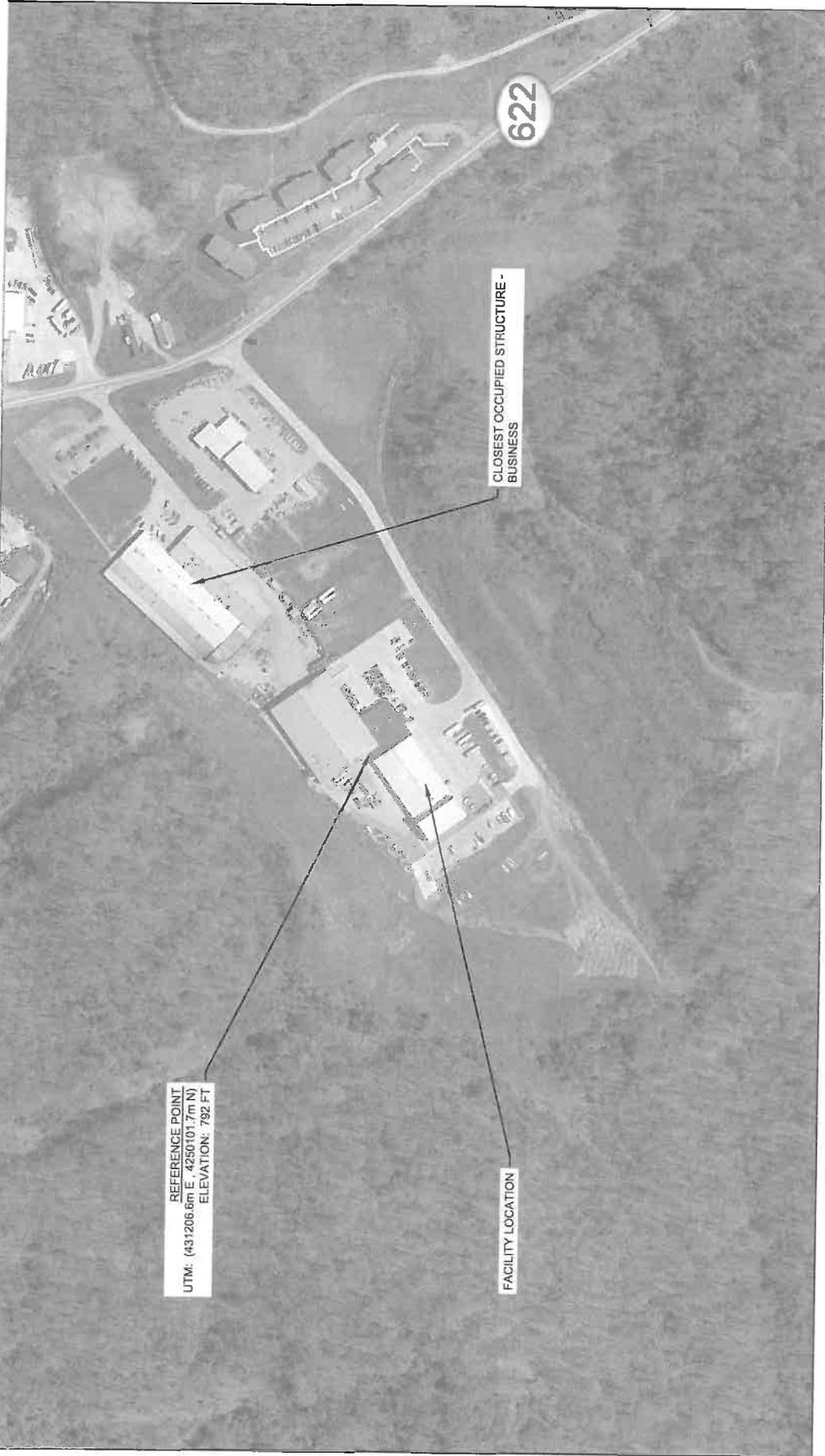
1. FIGURE PROVIDED BY CUMMINS.



WALBY ALBACH
 CUMMINS CROSSPOINT, LLC
 602 NEW GOFF MOUNTAIN RD.
 CROSS LANES, WV

ATTACHMENT E - PLOT PLAN

SCALE: AS SHOWN
 APRIL 2016



NOTES

1. IMAGE FROM GOOGLE EARTH PRO.

HALBACH

CUMMINS CROSSPOINT, LLC
602 NEW GOFF MOUNTAIN RD.
CROSS LANES, WV

ATTACHMENT E - PLOT PLAN

SCALE: AS SHOWN
APRIL 2016

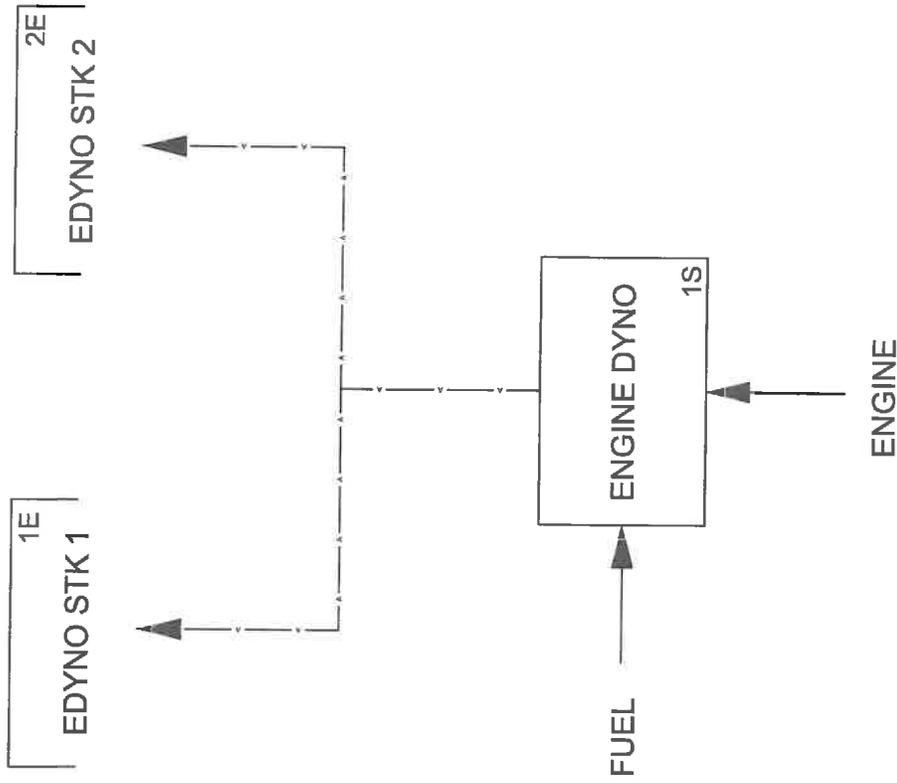
FIGURE 2



0 300
APPROX. SCALE IN FEET

ATTACHMENT F

Process Flow Diagrams



LEGEND

- PROCESS MATERIAL FLOW
- EMISSIONS FLOW
- EMISSIONS UNIT
- EMISSIONS UNIT ID
- CONTROL EQUIPMENT
- EMISSIONS POINT

NOTES

1. THIS FIGURE REPRESENTS ONE EMISSION UNIT EXHAUSTING OUT TWO EMISSION POINTS.

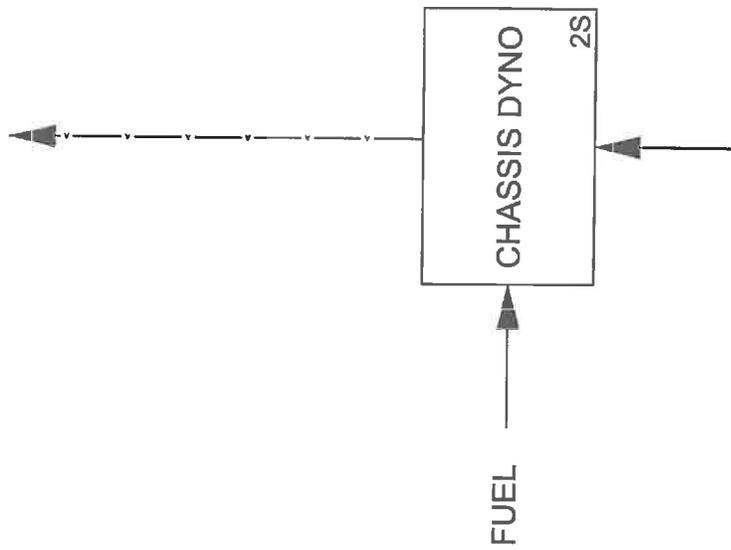


CUMMINS CROSSPOINT, LLC
 602 NEW GOFF MOUNTAIN RD.
 CROSS LANES, WV

ATTACHMENT F
 PROCESS FLOW DIAGRAM
 ENGINE DYNO (1S)

SCALE: NONE
 APRIL 2016

3E
 CHASSIS DYNO
 STACK



ASSEMBLED VEHICLE

LEGEND

- ↑ PROCESS MATERIAL FLOW
- EMISSIONS FLOW
- EU EMISSIONS UNIT
- EU/D EMISSIONS UNIT ID
- CE CONTROL EQUIPMENT
- EP EMISSIONS POINT

NOTES

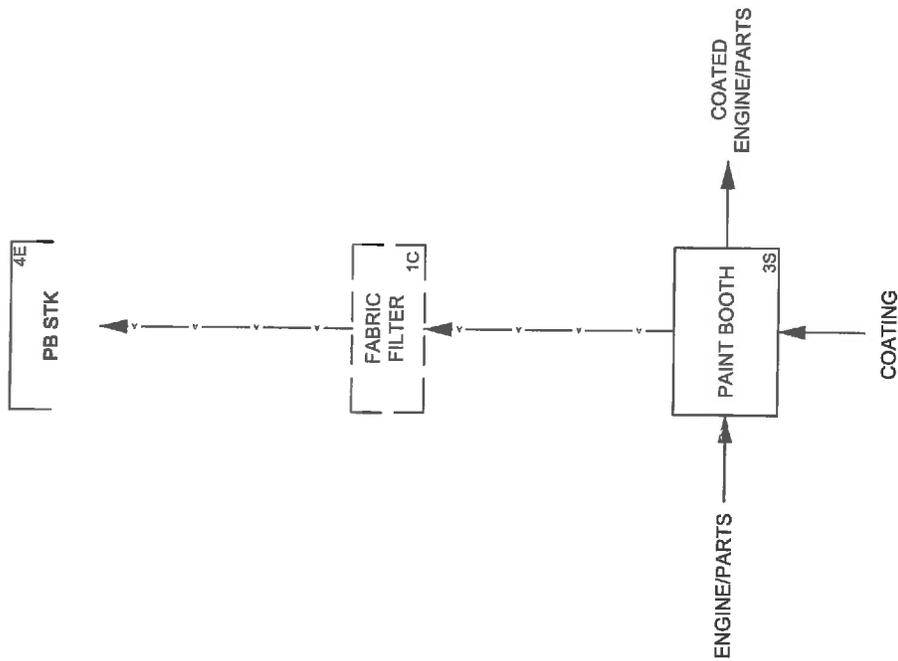
1. THIS FIGURE REPRESENTS ONE EMISSION UNIT EXHAUSTING OUT ONE EMISSION POINT.



CUMMINS CROSSPOINT, LLC
 802 NEW GOFF MOUNTAIN RD.
 CROSS LANES, WV

ATTACHMENT F
 PROCESS FLOW DIAGRAM
 CHASSIS DYNO (2S)

SCALE: NONE
 APRIL 2016



LEGEND

↑ PROCESS MATERIAL FLOW

→ EMISSIONS FLOW

EU ID

CE

EP

EMISSIONS UNIT

EMISSIONS UNIT ID

CONTROL EQUIPMENT

EMISSIONS POINT

NOTES

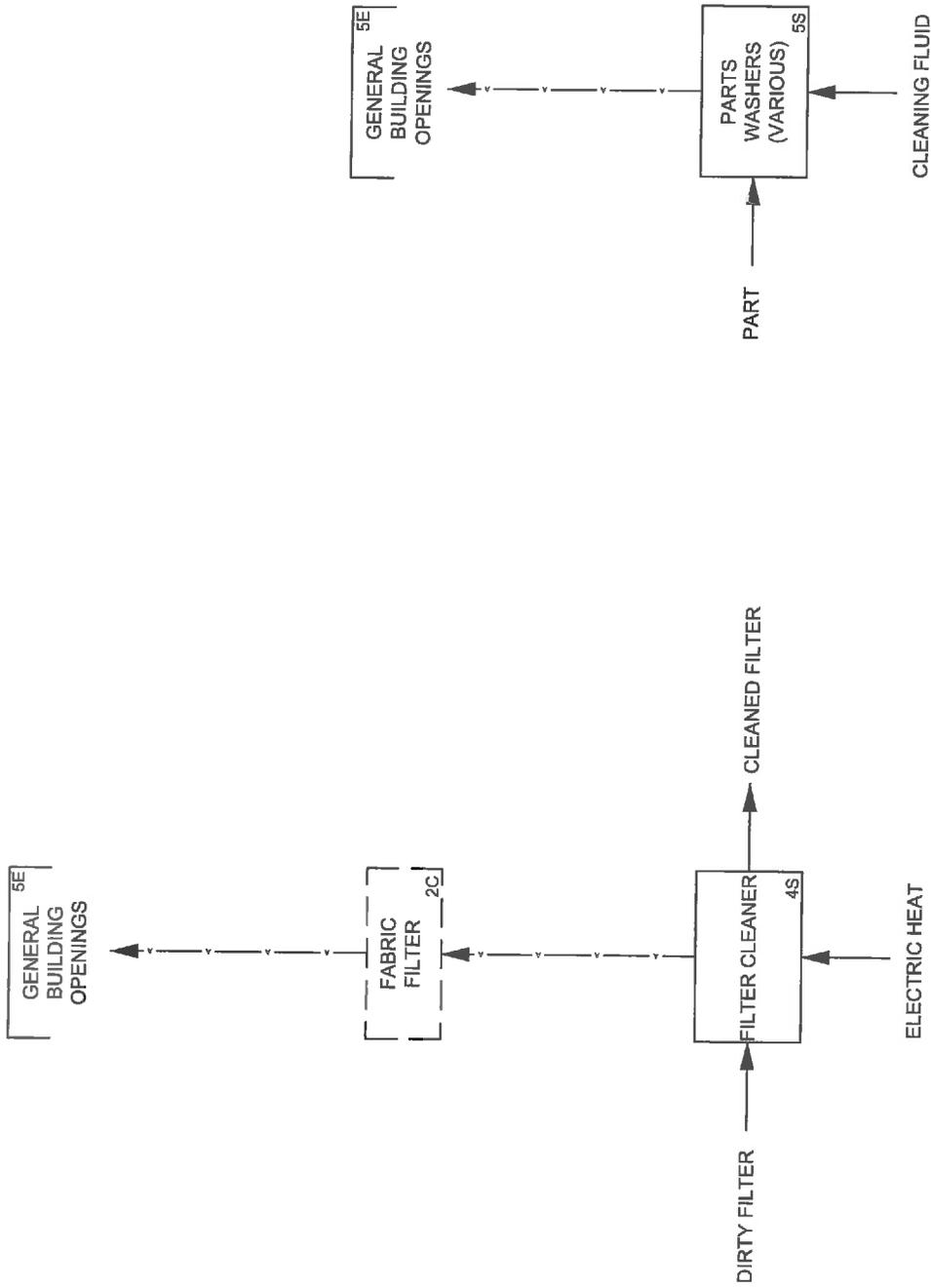
1. THIS FIGURE REPRESENTS ONE EMISSION UNIT EXHAUSTING OUT ONE EMISSION POINT.



CUMMINS CROSSPOINT, LLC
 602 NEW GOFF MOUNTAIN RD.
 CROSS LANES, WV

**ATTACHMENT F
 PROCESS FLOW DIAGRAM
 PAINT BOOTH (3S)**

SCALE: NONE
 APRIL 2016



LEGEND

- PROCESS MATERIAL FLOW
- EMISSIONS FLOW
- EU EMISSIONS UNIT
- CE EMISSIONS UNIT ID
- CONTROL EQUIPMENT
- EP EMISSIONS POINT

NOTES

1. THIS FIGURE REPRESENTS 2 (TWO) SEPARATE EMISSION SOURCES ALL UNCAPTURED AND EXHAUSTING VIA GENERAL BUILDING VENTS, DOORS AND WINDOWS, (FUGITIVE EMISSIONS) (5E).



CUMMINS CROSSPOINT, LLC
 602 NEW GOFF MOUNTAIN RD.
 CROSS LANES, WV

**ATTACHMENT F
 PROCESS FLOW DIAGRAM
 GEN. BLDG. OPENINGS (5E)**

SCALE: NONE
 APRIL 2016



LEGEND
 —> PROCESS MATERIAL FLOW
 -.-> EMISSIONS FLOW
 [] EMISSIONS UNIT
 [] EMISSIONS UNIT ID
 [] CONTROL EQUIPMENT
 [] EMISSIONS POINT

NOTES

1. THIS FIGURE REPRESENTS THE EMERGENCY GENERATOR LOCATED OUTDOORS EMITTING VIA GENERAL EQUIPMENT EXHAUST AND THE COOLING TOWER EXHAUSTING VIA FUGITIVE EMISSIONS



CUMMINS CROSSPOINT, LLC
 602 NEW GOFF MOUNTAIN RD.
 CROSS LANES, WV

**ATTACHMENT F
 PROCESS FLOW DIAGRAM
 EM. GEN. & COOLING TOWER**

SCALE: NONE
 APRIL 2016

ATTACHMENT G

Process Description

Process Description

The Cummins Crosspoint, LLC facility located at 602 New Goff Mountain Rd. in Cross Lanes, West Virginia is an engine repair and rebuild shop. The facility performs various maintenance and repair on engines and also includes a paint booth and dynamometer test stations.

The Engine Dynamometer (dyno) testing station [1S] is rated to test engines up to 2,500 hp. The only emissions produced are based on fuel combustion and are generated directly from the engine being tested. These emissions exhaust via two stacks outdoors [1E & 2E]. Cummins is proposing a 190,000 gallon (or natural gas equivalent) per year on a 12-month rolling average fuel usage limit. Diesel is the primary fuel combusted, but the facility would prefer to have the option to run cleaner natural gas engines in the future. Emissions are based solely on diesel combustion as a worst-case scenario.

The Chassis Dyno testing station [2S] tests fully assembled vehicles up to 600 hp. The only emissions produced are based on fuel combustion and are generated directly from the vehicle's engine being tested and exhaust via an outdoor stack [3E]. Diesel is the primary fuel combusted, but the facility would prefer to have the option to run cleaner natural gas engines in the future. Emissions are based solely on diesel combustion as a worst-case scenario.

There is also a completely enclosed paint booth [3S]. Coatings are applied to engines via spray guns at a maximum usage rate of 1.5 gallons of coating per hour. The booth air is pulled through fabric filters then exhausts through a stack [4E]. Emissions will vary depending on the coating applied. The emissions calculations included in this application package are based on production using the worst-case scenario as applied coatings (highest solids content for PM/PM10/PM2.5 emissions, highest VOC content for VOC emissions, and highest HAPs content for HAPs emissions).

The Filter Cleaner (DPF Cleaner) [4S] cleans diesel particulate filters. The dirty filter is loaded into the chamber and a nozzle blows pressurized air and generates electric heat as needed to clean the filter. The exhaust is then run through two filters in the piece of equipment before venting inside the facility and out general building openings [5E]. The emissions are very limited but may vary slightly based on the loading of each filter.

The facility also operates Parts Washers [5S] consisting of (2) Repair Shop Crystal Clean Parts Washers, (2) MRC Rotary Parts Washers, and (4) MRC Various Parts Washers. Emissions are based solely on the evaporation of the material stored in the parts washer and will vent inside the building and out general openings [5E]. Actual emissions will vary depending on the material used in the parts washer; however the potential emissions included with this application assume each parts washer is using the worst-case scenario material.

There is a diesel-fueled emergency generator [6S] located onsite rated at 47 kW (63 hp). This emission unit only operates during emergencies and for limited testing and maintenance. The only emissions associated with this unit are from diesel combustion that vents outdoors [6E].

The Cooling Tower [7S] is used to cool non-contact water used for heat-transfer cooling of the Engine Dyno. The emissions are based on naturally occurring solids in the cooling water. When the cooling water evaporates the solids therein can be released as fugitive emissions [Fugitives].

This is the initial permit application for this facility.

ATTACHMENT H

SDSs

CHEM-O-PON™ PRIMER

High Build, High Solids Epoxy Primer



Technical Data

PRODUCT DESCRIPTION

A two-component, 3:1 ratio, high solids, high build epoxy primer for industrial maintenance which dries faster than normal polyamide epoxy primers. Offers excellent resistance to corrosion and exceptional adhesion to ferrous metal substrates. Resists solvents, dilute acids and alkali attack.

FEATURES

- High solids
- Excellent adhesion
- High build
- Fast drying
- Corrosion resistant
- Chromate free

PRODUCT DATA

Description	Results
Vehicle Type	Epoxy Polyamide
Color	33304 Light Gray
Gloss	< 5 on 60° meter
VOC (mixed).....	385 g/L (3.21 lbs/gal)
Weight/Gallon.....	12.3 pounds
Solids by Weight (mixed).....	73.8%
Solids by Volume (mixed).....	54.5%
Viscosity (mixed)	3,000 cps (Brookfield #4 @ 20 rpm)
Flash Point	51°F
Dry Heat Resistance	250°F
Freight Classification	Paint Flammable
Packaging.....	1 Gallon (mixed Unit)

APPLICATION DATA

Description	Results
Application.....	Spray, Brush or Roll
Mix Ratio	3:1 by Volume
Catalyst	99953 Neutral 99957 Red CPN3063 Tan CPN8073 Beige
Recommended Thickness	2 - 3 mils DFT
Dry Time @ 77° F, 50% RH	
Tack Free.....	1 hour
To Handle	6 hours
To Recoat	4 hours
Pot Life	
2X Viscosity	8 hours
Gell Time	16 hours
Coverage.....	437 sf/gal at 2 mils DFT
Thinner	21064 CHEM-O-PON™ Thinner 21092 Medium Spray Reducer
Clean Up	21064 CHEM-O-PON™ Thinner

The above product and application data for this technical data sheet are based on product 33304 Light Gray.

CURED FILM PERFORMANCE

Description	Test Method	Results
Adhesion to Steel	ASTM D4541	> 500 psi
Hardness	ASTM D3363	2H
Impact Resistance	ASTM D2794	160 lbs direct
Corrosion Resistance	ASTM B117	few #6, no undercutting
2,500 Hours Salt Fog		

EQUIPMENT RECOMMENDATIONS

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

SPRAY APPLICATION (General): The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

AIR ATOMIZED SPRAY:

	Model	Air Cap	Fluid Tip	Fluid Delivery	Atomizing Pressure
Pressure	Binks #18	63 pb	66	20 oz/min	45 - 60 psi
Pressure	DeVilbiss MBC-510	704	fx	20 oz/min	45 - 60 psi

AIRLESS SPRAY:

Model	Pump Ratio	Fluid Tip	Fluid Pressure	Filter Mesh
Graco Bulldog	30:1	.011 - .013	1800 - 2200	100
Binks B 80	35:1	.011 - .013	1800 - 2200	100

GENERAL SURFACE PREPARATION

All surfaces must be sound, dry, clean and free of oil, dirt, grease, wax, mildew, loose or flaking paint and other surface contaminants.

Remove loose, peeling, flaking or scaling paint by scraping, sanding or wire brush.

For best results, an SSPC-SP 5 (NACE No. 1) white metal blast is minimum for severe exposure. For moderate exposure (non-immersion), an SSPC-SP 6 (NACE No. 3) commercial blast should be used.

DIRECTIONS FOR USE

TINTING: Do not tint.

THINNING: Thin with 21064 CHEM-O-PON™ Thinner; 10-15% if local VOC regulations allow. Alternate reducer 21092 may be used as universal thinner. Reduce viscosity with approved thinner only.

Note: Always know local VOC restrictions for coatings applications in your area before thinning this product. Thinning recommendations meet Federal VOC restrictions for architectural coatings. This product and other referenced products may not meet VOC restrictions for your application and may not be available in your area. Carefully read and observe warning thinner labels.

APPLICATION: Thoroughly mix 3 parts epoxy resin to 1 part 99953 catalyst. May use alternate catalyst 99957 for red color, CPN3063 for tan color or CPN8073 for beige color. Apply by spray only. **APPLY ONLY** when air and surface temperatures are between 44 - 100°F and the surface temperature is at least 5°F above the dew point.

DRYING TIME: Under normal conditions, dries to touch in 1 hour and to recoat in 4 hours. Low temperature, high humidity, poor ventilation and thick films will retard drying. **CHEM-O-PON™ Accelerator 99026** can be added at the rate of 1 oz per mixed gallon to facilitate faster cure in colder temperature.

CLEAN UP: Clean up skin, clothing, paint tools or spills immediately with recommended thinner, carefully observing cautions on paint and thinner labels. Dried paint may be removed by scraping. See Technical Data for **ACRYLITHANE™** for recommended Engineered Systems.

HEALTH AND SAFETY

Read the Material Safety Data Sheet (MSDS) and container labels for detailed health and safety information. This product is intended for industrial use by properly trained professional applicators only.

Manufacturer warrants that the standards and qualities of the product described herein will not vary by more than 10% from the tested results set forth above. **MANUFACTURER HEREBY EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.** Buyer must make its own determination of the suitability of any product for its use, whether such product is used alone or in combination with other materials. **To the extent this or any of Manufacturer's products is proven to be defective, Buyer's sole remedy shall be limited to the replacement of such defective product, exclusive of any costs of labor. MANUFACTURER SHALL NOT BE LIABLE OR OBLIGATED FOR ANY LOSS OR CONSEQUENTIAL OR OTHER DAMAGE INCURRED DIRECTLY OR INDIRECTLY BY BUYER OR ANY OTHER PERSON OR ENTITY THAT ARISES IN ANY WAY IN RELATION TO THIS OR ANY OF MANUFACTURER'S OTHER PRODUCTS.** Nothing contained herein shall be construed to constitute inducement or recommendation to practice any invention covered by any patent without authority of the owner of the patent. No Applicator is or should be viewed as an employee or agent of Manufacturer. 11032010/Chem-O-PonPrimerTD.indd

JONES-BLAIR/NEOGARD

2728 Empire Central - Dallas, Texas 75235 - Phone (214) 353-1600 - Fax (214) 357-7532 - www.jones-blair.com - www.neogard.com

Material Safety Data Sheet

Revision Date: 09-21-2012

Product Code: 99931

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ACRYLITHANE HS ALTERNATE CATALYST
Product Code: 99931
Document ID: M99931
Company: JONES-BLAIR® Company
2728 Empire Central
Dallas, TX 75235
1-214-353-1600

Revision Number: 3
Prior Version Date: 08-05-2009
Chemical Family: Urethane Catalyst
Intended use: Urethane Paint Hardener/Catalyst
Emergency Contact: ChemTrec Center
Emergency Phone: 1-800-424-9300
International: 703-527-3887

II. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: **DANGER!**
Flammable liquid and vapor.
Causes skin irritation.
Causes eye irritation.
Overexposure may cause lung damage.
Vapor and spray mist harmful. Causes nose and throat irritation. Overexposure may cause lung damage. May cause allergic skin and respiratory reaction. Effects may be permanent.

Routes of Entry:

- Skin contact
- Inhalation
- Eye contact
- Skin absorption
- Ingestion

Target Organs Potentially Affected by Exposure:

- Skin
- Respiratory Tract
- Central nervous system
- Eyes
- Kidneys
- Liver
- Blood

Medical Conditions Aggravated by Exposure:

- Skin allergies.
- Individuals with lung or breathing problems or prior reaction to isocyanates must not be exposed to vapor or spray mist.
- Skin allergies.
- Respiratory disorders, including but not limited to asthma and bronchitis.
- Eye disorders.
- Liver disease
- Kidney disease
-

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Causes nose and throat irritation.

Inhalation Toxicity: Vapor harmful. May affect the brain or nervous system causing dizziness, headache or nausea.

Material Safety Data Sheet

Revision Date: 09-21-2012

Product Code: 99931

Skin Contact: Can cause moderate skin irritation. Sensitizer. Avoid exposure. If sensitized, repeated exposures will result in irritation, reddening, and rashes even for very low exposures.

Skin Absorption: May be harmful if absorbed through skin.

Eye Contact: Causes eye irritation.

Ingestion Toxicity: Harmful if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Possible cancer hazard. Contains ethylbenzene which may cause cancer based on animal data. (Risk of cancer depends on duration and level of exposure.)

Reproductive and Developmental Toxicity: Xylene may cause adverse reproductive and/or developmental effects. Pregnant women may be at an increased risk from exposure.

Mutagenicity: Xylene has been shown to be positive in mutagenicity assays.

Inhalation: Isocyanate vapors or mist at concentrations above the TLV can irritate the mucous membranes in the respiratory tract causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function. Exposure well above the TLV may lead to generally reversible bronchitis, bronchial spasm and pulmonary edema. Repeated overexposure causes sensitization in some individuals resulting in asthma-like symptoms on subsequent exposures below the TLV.

Persons with preexisting bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as an asthma attack.

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Skin Contact:

Prolonged contact may cause an allergic skin reaction.

Skin Absorption:

Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause minor systemic damage.

III. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%	CAS #
Homopolymer of Hexamethylene Diisocyanate	70 - 90	28182-81-2
n-Butyl acetate	7 - 13	123-86-4
Xylene	7 - 13	1330-20-7
Ethylbenzene	0.5 - 1.5	100-41-4
Hexamethylene diisocyanate	0.5 - 1.5	822-06-0

IV. FIRST-AID MEASURES

Inhalation: Remove individual to fresh air after an airborne exposure if any symptoms develop as a precautionary measure. If breathing difficulty persists or occurs later, consult a physician and have MSDS available.

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: If swallowed, do not induce vomiting. Get medical attention immediately.

V. FIRE FIGHTING MEASURES

Flammability Summary:

Flammable liquid and vapor.

Extinguishing Media:

Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and minimize fire damage.

Fire and/or Explosion Hazards:

Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Material Safety Data Sheet

Revision Date: 09-21-2012

Product Code: 99931

Container may explode in heat of fire. Empty containers that retain product residue (liquid, solid/sludge, or vapor) can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose container to heat, flame, sparks, static electricity, or other sources of ignition. Any of these actions can potentially cause an explosion that may lead to injury or death.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide, Hydrogen cyanide, Isocyanates, Nitrogen containing gases, Sulfur containing gases

Flash Point (°F/°C): 82 / 28
Autoignition Temperature (°F/°C): 797.0 / 425.0
Lower Flammable/Explosive Limit, % In air: 1.0
Upper Flammable/Explosive Limit, % in air: 7.6

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.

Methods for Clean-up: Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Dike with suitable absorbent material. Gather and store in a sealed container pending disposal.

VII. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment. Follow all protective equipment recommendations provided in Section VIII.

Storage Technical Measures and Conditions: Store in a cool dry place. Keep container(s) closed. Keep away from sources of ignition.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Local exhaust ventilation or other engineering controls may be required when handling or using this product to avoid overexposure. Engineering controls must be designed to meet the OSHA chemical specific standard in 29 CFR 1910.

Respiratory Protection: General or local exhaust ventilation is the preferred means of protection. In cases where ventilation is inadequate, respiratory protection may be required to avoid overexposure. Follow respirator manufacturer's directions for respirator use. For poorly ventilated areas or during spray application use NIOSH approved supplied air respirator unless air monitoring demonstrates vapor/mist levels below applicable limits. When monomeric isocyanate concentrations are below 0.05 ppm (10 times the 8 hour TWA exposure limit), an appropriate combination organic vapor and particulate respirator (NIOSH approved) may be appropriate. An end-of-service-life Indicator (ESLI) or a change schedule is mandatory.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product.

Material Safety Data Sheet

Revision Date: 09-21-2012

Product Code: 99931

Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

Skin Protection:

Avoid all skin contact by covering as much of the exposed skin area as possible with appropriate clothing to prevent skin contact. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Clothing suitable to prevent skin contact. Wear chemical resistant gloves.

Control Parameters:

Chemical Name	ACGIH TLV-TWA	ACGIH STEL	OSHA PEL-TWA
Homopolymer of Hexamethylene Diisocyanate	5mg/m ³ TWA	10mg/m ³ (15 Min.)	
n-Butyl acetate	150 ppm TWA; 713 mg/m ³ TWA	200 ppm STEL; 950 mg/m ³ STEL	150 ppm TWA; 710 mg/m ³ TWA
Xylene	100 ppm TWA; 434 mg/m ³ TWA	150 ppm STEL; 651 mg/m ³ STEL	100 ppm TWA; 435 mg/m ³ TWA
Ethylbenzene	100 ppm TWA; 434 mg/m ³ TWA	125 ppm STEL; 543 mg/m ³ STEL	100 ppm TWA; 435 mg/m ³ TWA
Hexamethylene diisocyanate	0.005 ppm TWA; 0.034 mg/m ³ TWA		

IX. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Colorless
Physical State:	Liquid
Boiling Point - Low (°F):	244.0
Boiling Point - High (°F):	415.0
Evaporation Rate:	1
Odor:	Ester-Like
Vapor Density:	4.00
Vapor Pressure:	7.80
VOC (g/l) (Regulatory, Calculated):	265.12
(Actual, Calculated):	265.12
Viscosity:	150 - 300 CPS
Solubility in Water:	Reacts slowly with water.
Octanol/Water Partition Coefficient:	Not Available
Volatiles, % by Volume (Calculated):	30.31
Volatiles, % by weight (Calculated):	25.00
Density:	9 - 9 lbs./Gal.

Physical and Chemical Properties are calculated target or range values for single packaged items and do not represent compliance values for multi-component (mixed) systems.

X. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures. Moisture (potentially will lead to gas formation and warming). Contamination. Elevated temperatures.
Materials to Avoid/Chemical Incompatibility:	Oxidizing agents, Caustics (bases, alkalis), Acids, Amines, Water, Alcohols
Polymerization:	Will not occur.
Hazardous Decomposition Products:	Carbon dioxide, Carbon monoxide, Hydrogen cyanide, Isocyanates, Nitrogen containing gases, Sulfur containing gases

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data:

Chemical Name	CAS Number	LD50/LC50
---------------	------------	-----------

Material Safety Data Sheet

Revision Date: 09-21-2012

Product Code: 99931

n-Butyl acetate	123-86-4	Oral LD50 Rat 14,130 mg/kg Dermal LD50 Guinea pig 8,770 mg/kg
Xylene	1330-20-7	Inhalation LC50 (6h) Rat > 1,800 ppm Oral LD50 Rat 4,300 mg/kg
Ethylbenzene	100-41-4	Dermal LD50 Rat 3,500 mg/kg

Carcinogens:

Chemical Name	CAS Number	IARC	NTP	OSHA
Ethylbenzene	100-41-4	2B		

XII. ECOLOGICAL INFORMATION

Toxicity data, if available, are listed below.

XIII. DISPOSAL CONSIDERATIONS

Disposal Methods: Refer to other sections of this MSDS to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

XIV. TRANSPORTATION INFORMATION

This section provides basic shipping classification information and does not contain all regulatory transportation details. Refer to all applicable regulations for domestic, international, air, vessel and ground transportation requirements and restrictions.

DOT Basic Description: Paint Related Material
Hazard Class: 3
UN Number: UN1263
Packing Group: III
Other: This product qualifies for a limited quantity exception per CFR173.150(b)(3) for inner containers <= 1.3 gallons (5L) and total gross package wt <= 66 lbs (30kg).

XV. REGULATORY INFORMATION

United States Federal Regulations:

TSCA Status All components of this product are either listed on the TSCA Inventory; or, are not subject to the inventory notification requirements.

SARA EHS Chemicals	CAS #	%
Not applicable		
CERCLA		
n-Butyl Acetate	123-86-4	7 - 13
Xylene (mixed isomers)	1330-20-7	7 - 13
Ethyl Benzene	100-41-4	0.5 - 1.5
Hexamethylene-1,6-diisocyanate	822-06-0	0.5 - 1.5

SARA 313

Xylene (mixed isomers)	1330-20-7	7 - 13
Ethylbenzene	100-41-4	0.5 - 1.5
Hexamethylene-1,6-diisocyanate	822-06-0	0.5 - 1.5

SARA 311/312

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Revision Date: 09-21-2012
Product Code: 99931

Health (Acute): Y
Health (chronic): Y
Fire (Flammable): Y
Pressure: N
Reactivity: Y

U. S. State Regulations:

California Prop 65 Chemicals

Cancer	CAS #	%
Ethyl Benzene	100-41-4	0.5 - 1.5
Reproductive		
Not applicable		

Canadian Regulations:

CEPA DSL: The components of this product ARE listed on the Canadian Domestic Substances List.

WHMIS Hazard Class: B2 D2A

XVI. ADDITIONAL INFORMATION

Prepared By: Regulatory Department

Disclaimer: This MSDS has been prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada's Controlled Product Regulations (CPR). To the best of our knowledge the information contained herein is accurate. Determination of safe handling, application and use of this material is the responsibility of the end user. This information is furnished without warranty, expressed or implied.

Print Date: September 26, 2014

Material Safety Data Sheet

Revision Date: 04-19-2012
Product Code: 33304

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: CHEM-O-PON NONCHROME EPOXY PRIMER - 0.75GL
Product Code: 33304
Document ID: M33304
Company: JONES-BLAIR® Company
2728 Empire Central
Dallas, TX 75235
1-214-353-1600

Revision Number: 2
Prior Version Date: 07-23-2009
Chemical Family: Epoxy Coating
Intended use: Industrial Maintenance Primer
Emergency Contact: ChemTrec Center
Emergency Phone: 1-800-424-9300
International: 703-527-3887

II. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING!

Flammable liquid and vapor.
Causes skin irritation.
Causes eye irritation.
Vapor harmful.
Harmful if swallowed.
May be harmful if absorbed through skin.

Routes of Entry:

- Inhalation
- Skin contact
- Eye contact
- Ingestion
- Skin absorption

Target Organs Potentially Affected by Exposure:

- Central nervous system
- Skin
- Respiratory Tract
- Eyes
- Kidneys
- Liver
- Blood

Medical Conditions

Aggravated by Exposure:

- Respiratory disorders, including but not limited to asthma and bronchitis.
- Skin disorders.
- Eye disorders.
- Liver disease
- Kidney disease
- Eye irritation when/if dust or spray mist is generated.
-

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Causes lung irritation. Causes nose and throat irritation. Inhalation of dusts produced during cutting, grinding or sanding of this product may cause irritation of the respiratory tract.

Inhalation Toxicity: Vapor harmful. May affect the brain or nervous system causing dizziness, headache or nausea.

Skin Contact: Can cause moderate skin irritation. May cause allergic skin reaction.

Skin Absorption: May be harmful if absorbed through skin.

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Eye Contact: Causes eye irritation.
Ingestion Toxicity: Harmful if swallowed. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains Titanium Dioxide which is listed by IARC as possibly carcinogenic to humans (Group 2B). This listing is based on inadequate evidence with respect to humans and sufficient evidence in experimental animals.
Cancer hazard: Contains Crystalline Silica, which can cause cancer. Risk of cancer depends on duration and level of exposure to dust generated from sanding surfaces or spray mists.
Possible cancer hazard. Contains ethylbenzene which may cause cancer based on animal data. (Risk of cancer depends on duration and level of exposure.)

Reproductive and Developmental Toxicity: Xylene may cause adverse reproductive and/or developmental effects. Pregnant women may be at an increased risk from exposure. Contains Methyl Ethyl Ketone, which in animal studies has shown to cause harm to the fetus only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain. Contains butoxy ethanol which has been shown to cause harm to the fetus in laboratory animal studies. The relevance of these findings to humans is uncertain.

Mutagenicity: Xylene has been shown to be positive in mutagenicity assays.
Inhalation: NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Overexposure may cause lung damage.

Skin Contact: Prolonged contact may cause an allergic skin reaction.
Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause minor systemic damage.

III. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%	CAS #
Polymer of Epoxy Resin and bisphenol A	10 - 30	25036-25-3
Titanium dioxide	10 - 30	13463-67-7
Calcium Metasilicate (Particles Not Otherwise Classified)	7 - 13	13983-17-0
Xylene	3 - 7	1330-20-7
Barium Sulfate	3 - 7	7727-43-7
Methyl Isobutyl Ketone	3 - 7	108-10-1
Cristobalite (Silica-Crystalline)	3 - 7	14464-46-1
Methyl ethyl ketone	1 - 5	78-93-3
Glycidyl Ether of 3-Alkyl Phenol	1 - 5	171263-25-5
Butoxy Ethanol	1 - 5	111-76-2
Zinc Phosphate (Nuisance Dust)	1 - 5	7779-90-0
n-Butyl alcohol	1 - 5	71-36-3
Talc	1 - 5	14807-96-6
Ethylbenzene	0.5 - 1.5	100-41-4
Quartz (Silica-Crystalline)	0.1 - 1	14808-60-7

IV. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen.
Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists. Thoroughly wash or discard clothing and shoes before reuse.
Ingestion: If swallowed, do not induce vomiting. Get medical attention immediately. Induce vomiting as a

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last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

V. FIRE FIGHTING MEASURES

Flammability Summary:

Flammable liquid and vapor.

Extinguishing Media:

Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and minimize fire damage.

Fire and/or Explosion Hazards:

Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back. Container may explode in heat of fire. Empty containers that retain product residue (liquid, solid/sludge, or vapor) can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose container to heat, flame, sparks, static electricity, or other sources of ignition. Any of these actions can potentially cause an explosion that may lead to injury or death.

Fire Fighting Methods and Protection:

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Will not burn, no special instructions available. Use methods appropriate for surrounding materials.

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment.

Hazardous Combustion Products:

Carbon dioxide, Carbon monoxide, Sulfur containing gases, Toxic gases, Toxic fumes, Hydrocarbons

Flash Point (°F/°C):

51 / 11

Autoignition Temperature (°F/°C):

860.0 / 460.0

Lower Flammable/Explosive Limit, % in air:

1.1

Upper Flammable/Explosive Limit, % in air:

8.0

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.

Methods for Clean-up:

Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Dike with suitable absorbent material. Gather and store in a sealed container pending disposal.

VII. HANDLING AND STORAGE

Handling Technical Measures and Precautions:

Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Follow all protective equipment recommendations provided in Section VIII. Wash thoroughly after handling. Do not get in eyes, on skin and

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clothing. Use non-sparking tools when opening or closing containers. Ground and bond containers when transferring material. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. Remove contaminated clothing and wash before reuse.

Storage Technical Measures and Conditions:

Store in a cool dry place. Keep container(s) closed. Keep away from sources of ignition.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering Measures:** Local exhaust ventilation or other engineering controls may be required when handling or using this product to avoid overexposure. Engineering controls must be designed to meet the OSHA chemical specific standard in 29 CFR 1910. Explosion proof exhaust ventilation should be used.
- Respiratory Protection:** General or local exhaust ventilation is the preferred means of protection. In cases where ventilation is inadequate, respiratory protection may be required to avoid overexposure. Follow respirator manufacturer's directions for respirator use.
- Eye Protection:** Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
- Skin Protection:** Where use can result in skin contact, practice good personal hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Clothing suitable to prevent skin contact. Wear chemical resistant gloves.

Control Parameters:

Chemical Name	ACGIH TLV-TWA	ACGIH STEL	OSHA PEL-TWA
Titanium dioxide	10 mg/m ³ TWA		15 mg/m ³ TWA (total dust)
Calcium Metasilicate (Particles Not Otherwise Classified)			50 mppcf (15mg/m ³) TWA Total Dust; 15 mppcf (5mg/m ³) TWA Respirable fraction
Xylene	100 ppm TWA; 434 mg/m ³ TWA	150 ppm STEL; 651 mg/m ³ STEL	100 ppm TWA; 435 mg/m ³ TWA
Barium Sulfate	10 mg/m ³ TWA (total); 5mg/m ³ (respirable)		15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)
Methyl Isobutyl Ketone	50 ppm TWA; 205 mg/m ³ TWA	75 ppm STEL; 307 mg/m ³ STEL	100 ppm TWA; 410 mg/m ³ TWA
Cristobalite (Silica-Crystalline)	0.05 mg/m ³ TWA (this TLV is for the respirable fraction of dust)		see Table Z-3
Methyl ethyl ketone	200 ppm TWA; 590 mg/m ³ TWA	300 ppm STEL; 885 mg/m ³ STEL	200 ppm TWA; 590 mg/m ³ TWA
Butoxy Ethanol	20 ppm TWA; 97 mg/m ³ TWA		50 ppm TWA; 240 mg/m ³ TWA
Zinc Phosphate (Nuisance Dust)			5 mg/m ³ (Respirable Fraction) 15 mg/m ³ (Total Dust)
n-Butyl alcohol	20 ppm TWA; 61 mg/m ³ TWA		100 ppm TWA; 300 mg/m ³ TWA
Talc	20 mppcf TWA		2mg/m ³ (Respirable Dust)
Ethylbenzene	100 ppm TWA; 434 mg/m ³ TWA	125 ppm STEL; 543 mg/m ³ STEL	100 ppm TWA; 435 mg/m ³ TWA
Quartz (Silica-Crystalline)	0.05 mg/m ³ TWA (respirable fraction)		see Table Z-3

IX. PHYSICAL AND CHEMICAL PROPERTIES

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Color: White
Physical State: Liquid
Boiling Point - Low (°F): 237.0
Boiling Point - High (°F): 286.0
Evaporation Rate: 1.6 (n-Butyl Acetate = 1.0)
Odor: Ketone
Vapor Density: 3.7 (air = 1)
Vapor Pressure: 20.00 mbar
VOC (g/l) (Regulatory, Calculated): 366.7
(Actual, Calculated): 366.7
Viscosity: 20 - 30 Z4
Solubility in Water: Low; 10-39%
Freezing Point (°F): > 50 °F
Octanol/Water Partition Coefficient: Not Available
Volatiles, % by Volume (Calculated): 43.88
Volatiles, % by weight (Calculated): 25.22
Density: 11.94 - 12.34 lbs./Gal.

Physical and Chemical Properties are calculated target or range values for single packaged items and do not represent compliance values for multi-component (mixed) systems.

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.
Conditions to Avoid: Sparks, open flame, other ignition sources, and elevated temperatures. Contamination.
Materials to Avoid/Chemical Incompatibility: Oxidizing agents, Caustics (bases, alkalis), Alkaline earth metals, Acids
Polymerization: Will not occur.
Hazardous Decomposition Products: Carbon dioxide, Carbon monoxide, Sulfur containing gases, Toxic gases, Toxic fumes, Hydrocarbons

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data:

Chemical Name	CAS Number	LD50/LC50
Polymer of Epoxy Resin and bisphenol A	25036-25-3	Oral LD50 > 2000 mg/kg Dermal LD50 Rat > 2000 mg/kg
Titanium dioxide	13463-67-7	Oral LD50 Rat > 25 g/kg Dermal LD50 Rabbit > 10 g/kg Inhalation LC50 (4h) Rat > 6.82 mg/L
Xylene	1330-20-7	Oral LD50 Rat 4300 mg/kg
4-Methyl-2-pentanone	108-10-1	Oral LD50 Rat 1600 - 3200 mg/kg Dermal LD50 Rabbit > 10 ml/kg Inhalation LC50 (4h) 2000 - 4000 ppm
Ethylbenzene	100-41-4	Dermal LD50 Rat 3500 mg/kg
Quartz	14808-60-7	Oral LD50 Rat > 22500 mg/kg

Carcinogens:

Chemical Name	CAS Number	IARC	NTP	OSHA
Titanium dioxide	13463-67-7	2B		

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Cristobalite (Silica-Crystalline)	14464-46-1	1	1
Talc	14807-96-6	2B	
Ethylbenzene	100-41-4	2B	
Quartz	14808-60-7	1	1

XII. ECOLOGICAL INFORMATION

Toxicity data, if available, are listed below.

XIII. DISPOSAL CONSIDERATIONS

Disposal Methods: Refer to other sections of this MSDS to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

XIV. TRANSPORTATION INFORMATION

This section provides basic shipping classification information and does not contain all regulatory transportation details. Refer to all applicable regulations for domestic, international, air, vessel and ground transportation requirements and restrictions.

DOT Basic Description: Paint
Hazard Class: 3
UN Number: UN1263
Packing Group: II
Other: This product qualifies for a limited quantity exception per CFR173.150(b)(2) and 172.102 Special Provision 149 for inner containers <= 1.3 gallons (5L) and total gross package wt <= 66 lbs (30kg).

IATA Air Shipping Name: Paint
IATA Hazard Class: 3
IATA UN Number: UN1263
IATA Packing Group: II

IMO Shipping Name: Paint
IMO Hazard Class: 3
IMO UN Number: UN1263
IMO Packing Group: II

XV. REGULATORY INFORMATION

United States Federal Regulations:

TSCA Status All components of this product are either listed on the TSCA Inventory; or, are not subject to the inventory notification requirements.

SARA EHS Chemicals	CAS #	%
Formaldehyde	50-00-0	0.01 - 0.1

CERCLA

Xylene	1330-20-7	3 - 7
Methyl Isobutyl Ketone	108-10-1	3 - 7
Methyl Ethyl Ketone	78-93-3	1 - 5
n-Butyl alcohol	71-36-3	1 - 5
Ethyl Benzene	100-41-4	0.5 - 1.5

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Xylene (mixed isomers)	1330-20-7	3 - 7
Methyl Isobutyl Ketone	108-10-1	3 - 7

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Ethylene glycol mono-n-butyl ether	111-76-2	1 - 5
Trizinc diphosphate	7779-90-0	1 - 5
n-Butyl alcohol	71-36-3	1 - 5
Ethylbenzene	100-41-4	0.5 - 1.5

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Health (Acute):	Y
Health (chronic):	Y
Fire (Flammable):	Y
Pressure:	N
Reactivity:	N

U. S. State Regulations:

California Prop 65 Chemicals

Cancer	CAS #	%
Titanium dioxide	13463-67-7	10 - 30
Cristobalite (Silica, Crystalline (Respirable Size))	14464-46-1	3 - 7
Ethyl Benzene	100-41-4	0.5 - 1.5
Crystalline Silica	14808-60-7	0.1 - 1
Formaldehyde	50-00-0	0.01 - 0.1
Carbon Black	1333-86-4	0.01 - 0.1
Benzene	71-43-2	0.001 - 0.01
Lead	7439-92-1	< 10 ppm
Reproductive		
Toluene	108-88-3	0.01 - 0.1
Benzene	71-43-2	0.001 - 0.01
Lead	7439-92-1	< 10 ppm

Canadian Regulations:

CEPA DSL: The components of this product ARE listed on the Canadian Domestic Substances List.

WHMIS Hazard Class: B2 D2A

XVI. ADDITIONAL INFORMATION

Prepared By: Regulatory Department

Disclaimer: This MSDS has been prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada's Controlled Product Regulations (CPR). To the best of our knowledge the information contained herein is accurate. Determination of safe handling, application and use of this material is the responsibility of the end user. This information is furnished without warranty, expressed or implied.

Print Date: April 19, 2012

Material Safety Data Sheet

Revision Date: 05-12-2014
Product Code: 21092

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: MEDIUM REDUCER
Product Code: 21092
Document ID: M21092
Company: JONES-BLAIR® Company
2728 Empire Central
Dallas, TX 75235
1-214-353-1600

Revision Number: 5
Prior Version Date: 10-29-2012
Chemical Family: Solvent Mixture/Thinner
Intended use: Solvent, Containing Petroleum Distillates
Emergency Contact: ChemTrec Center
Emergency Phone: 1-800-424-9300
International: 703-527-3887

II. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: **DANGER!**
Harmful or fatal if swallowed.
Flammable liquid and vapor.
Causes skin irritation.
Causes eye irritation.
Vapor harmful.
Causes nose and throat irritation.
Overexposure may cause central nervous system effects.
Harmful or fatal if swallowed.

Routes of Entry:

- Inhalation
- Skin absorption
- Skin contact
- Eye contact
- Ingestion

Target Organs Potentially Affected by Exposure:

- Central nervous system
- Liver
- Kidneys
- Eyes
- Respiratory Tract
- Skin
- Lungs
- Blood
- Spleen

Medical Conditions Aggravated by Exposure:

- Liver disease
- Kidney disease
- Eye disorders.
- Respiratory disorders, including but not limited to asthma and bronchitis.
- Skin disorders.
- Lung disease
- Central Nervous System.
-

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause severe respiratory irritation, dizziness, weakness, fatigue, nausea, headache

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and possible unconsciousness.

Inhalation Toxicity: Vapor harmful. May affect the brain or nervous system causing dizziness, headache or nausea.

Skin Contact: Can cause moderate skin irritation.

Skin Absorption: May cause severe irritation and systemic damage. May be harmful if absorbed through skin.

Eye Contact: Contact with the eyes may cause moderate to severe eye injury. Eye contact may result in tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

Ingestion Toxicity: Harmful or fatal if swallowed. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Possible cancer hazard. Contains ethylbenzene which may cause cancer based on animal data. (Risk of cancer depends on duration and level of exposure.)

Reproductive and Developmental Toxicity: Xylene may cause adverse reproductive and/or developmental effects. Pregnant women may be at an increased risk from exposure.

Mutagenicity: Xylene has been shown to be positive in mutagenicity assays.

Inhalation: NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Skin Contact: Prolonged or repeated contact may produce defatting of the skin leading to irritation and dermatitis.

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage.

III. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%	CAS #
Cyclohexanone	10 - 30	108-94-1
Methyl Isobutyl Ketone	10 - 30	108-10-1
Xylene	10 - 30	1330-20-7
Light aromatic solvent naphtha	7 - 13	64742-95-6
1,2,4-Trimethylbenzene	3 - 7	95-63-6
Ethylbenzene	1 - 5	100-41-4
Cumene	0.1 - 1	98-82-8

IV. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

Eyes: Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: If swallowed, do not induce vomiting. Get medical attention immediately. Induce vomiting as a last measure. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

Notes to Doctor: No additional first aid information available

V. FIRE FIGHTING MEASURES

Flammability Summary: Flammable liquid and vapor.

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if

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Fire and/or Explosion Hazards:	swept across the base of the fire. Water can also be used to absorb heat and minimize fire damage. Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back. Container may explode in heat of fire. The liquid is volatile and gives off invisible vapors. The vapor is heavier than air and will settle in low areas or travel along the ground to an ignition source where they may ignite or explode. Empty containers that retain product residue (liquid, solid/sludge, or vapor) can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose container to heat, flame, sparks, static electricity, or other sources of ignition. Any of these actions can potentially cause an explosion that may lead to injury or death.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.
Hazardous Combustion Products:	Toxic gases, Carbon dioxide, Carbon monoxide, Sulfur containing gases
Flash Point (°F/°C):	78 / 26
Autoignition Temperature (°F/°C):	788.0 / 420.0
Lower Flammable/Explosive Limit, % in air:	1.0
Upper Flammable/Explosive Limit, % in air:	8.0

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.
Methods for Clean-up:	Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Dike with suitable absorbent material. Gather and store in a sealed container pending disposal.

VII. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. Ground and bond containers when transferring material. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Wash thoroughly after handling. Do not get in eyes, on skin and clothing. Use non-sparking tools when opening or closing containers. Remove contaminated clothing and wash before reuse. Follow all protective equipment recommendations provided in Section VIII.
Storage Technical Measures and Conditions:	Store in a cool dry place. Keep container(s) closed. Keep away from sources of ignition.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Revision Date: 05-12-2014

Product Code: 21092

- Engineering Measures:** Local exhaust ventilation or other engineering controls may be required when handling or using this product to avoid overexposure. Engineering controls must be designed to meet the OSHA chemical specific standard in 29 CFR 1910. Explosion proof exhaust ventilation should be used.
- Respiratory Protection:** General or local exhaust ventilation is the preferred means of protection. In cases where ventilation is inadequate, respiratory protection may be required to avoid overexposure. Follow respirator manufacturer's directions for respirator use.
- Eye Protection:** Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
- Skin Protection:** Where use can result in skin contact, practice good personal hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Clothing suitable to prevent skin contact. Wear chemical resistant gloves.

Control Parameters:

Chemical Name	ACGIH TLV-TWA	ACGIH STEL	OSHA PEL-TWA
Cyclohexanone	20 ppm TWA; 50 mg/m ³ TWA		50 ppm TWA; 200 mg/m ³ TWA
Methyl Isobutyl Ketone	50 ppm TWA; 205 mg/m ³ TWA	75 ppm STEL; 307 mg/m ³ STEL	100 ppm TWA; 410 mg/m ³ TWA
Xylene	100 ppm TWA; 434 mg/m ³ TWA	150 ppm STEL; 651 mg/m ³ STEL	100 ppm TWA; 435 mg/m ³ TWA
1,2,4-Trimethylbenzene	25ppm; 123mg/m ³ TWA		
Ethylbenzene	100 ppm TWA; 434 mg/m ³ TWA	125 ppm STEL; 543 mg/m ³ STEL	100 ppm TWA; 435 mg/m ³ TWA
Cumene	50 ppm TWA; 246 mg/m ³ TWA		50 ppm TWA; 245 mg/m ³ TWA

IX. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Colorless
Physical State:	Liquid
Boiling Point - Low (°F):	237.0
Boiling Point - High (°F):	335.0
Evaporation Rate:	1.60 (n-Butyl Acetate = 1.0)
Odor:	Ketone
Vapor Density:	4.15 (air = 1)
Vapor Pressure:	20.00 mbar
VOC (g/l) (Regulatory, Calculated):	864.13
(Actual, Calculated):	864.13
Solubility in Water:	Minimal; 1-9%
Octanol/Water Partition Coefficient:	Not Available
Volatiles, % by Volume (Calculated):	100.00
Volatiles, % by weight (Calculated):	100.00
Density:	7.11 - 7.31 lbs./Gal.

Physical and Chemical Properties are calculated target or range values for single packaged items and do not represent compliance values for multi-component (mixed) systems.

X. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures. Contamination.
Materials to Avoid/Chemical Incompatibility:	Oxidizing agents, Acids
Polymerization:	Will not occur.
Hazardous Decomposition Products:	Toxic gases, Carbon dioxide, Carbon monoxide, Sulfur containing

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gases

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data:

Chemical Name	CAS Number	LD50/LC50
Cyclohexanone	108-94-1	Oral LD50 Rat 1535 mg/kg Dermal LD50 Rabbit 1111 mg/kg Inhalation LC50 (4h) Rat 8000 ppm
4-Methyl-2-pentanone	108-10-1	Oral LD50 Rat 1600 - 3200 mg/kg Dermal LD50 Rabbit > 10 ml/kg Inhalation LC50 (4h) 2000 - 4000 ppm
Xylene	1330-20-7	Oral LD50 Rat 4300 mg/kg Dermal LD50 Rabbit 4350 mg/kg Inhalation LC50 (4h) Rat 5334 mg/L
Light aromatic solvent naphtha	64742-95-6	Oral LD50 Rat 8400 mg/kg Dermal LD50 Rat > 2 g/kg Inhalation LC50 (4h) Rat 6 - 10 mg/L
1,2,4-Trimethylbenzene	95-63-6	Oral LD50 Rat 5 g/kg Inhalation LC50 (18h) Rat 18 G/M3
Ethylbenzene	100-41-4	Oral LD50 Rat 3500 mg/kg Dermal LD50 Rabbit 5510 mg/kg Inhalation LC50 (4h) Rat 17 mg/L
Cumene	98-82-8	Oral LD50 Rat 1400 mg/kg Dermal LD50 Rabbit 3 g/kg Inhalation LC50 (4h) Rat 8000 ppm

Carcinogens:

Chemical Name	CAS Number	IARC	NTP	OSHA
Ethylbenzene	100-41-4	2B		
Cumene	98-82-8	2B		

XII. ECOLOGICAL INFORMATION

Toxicity data, if available, are listed below.

Overview: No data available

Mobility: No data available

XIII. DISPOSAL CONSIDERATIONS

Disposal Methods: Refer to other sections of this MSDS to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

XIV. TRANSPORTATION INFORMATION

This section provides basic shipping classification information and does not contain all regulatory transportation details. Refer to all applicable regulations for domestic, international, air, vessel and ground transportation requirements and restrictions.

DOT Basic Description: Paint Related Material
Hazard Class: 3
UN Number: UN1263
Packing Group: III
Other: This product qualifies for a limited quantity exception per CFR173.150(b)(3) for inner containers <= 1.3 gallons (5L) and total gross package wt <= 66 lbs (30kg).

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Marine Pollutant: No

XV. REGULATORY INFORMATION

United States Federal Regulations:

TSCA Status All components of this product are either listed on the TSCA Inventory; or, are not subject to the inventory notification requirements.

SARA EHS Chemicals	CAS #	%
Not applicable		
CERCLA		
Cyclohexanone	108-94-1	10 - 30
Methyl Isobutyl Ketone	108-10-1	10 - 30
Xylene (mixed isomers)	1330-20-7	10 - 30
Ethyl Benzene	100-41-4	1 - 5
Cumene	98-82-8	0.1 - 1

SARA 313		
Methyl Isobutyl Ketone	108-10-1	10 - 30
Xylene (mixed isomers)	1330-20-7	10 - 30
1,2,4-Trimethylbenzene	95-63-6	3 - 7
Ethylbenzene	100-41-4	1 - 5
Cumene	98-82-8	0.1 - 1

SARA 311/312	
Health (Acute):	Y
Health (chronic):	Y
Fire (Flammable):	Y
Pressure:	N
Reactivity:	N

U. S. State Regulations:

California Prop 65 Chemicals

Cancer	CAS #	%
Ethyl Benzene	100-41-4	1 - 5
Cumene	98-82-8	0.1 - 1
Benzene	71-43-2	0.01 - 0.1
Reproductive		
Methyl Isobutyl Ketone	108-10-1	10 - 30
Toluene	108-88-3	0.1 - 1
Benzene	71-43-2	0.01 - 0.1

Canadian Regulations:

CEPA DSL: The components of this product ARE listed on the Canadian Domestic Substances List.

WHMIS Hazard Class: B2 D2A

XVI. ADDITIONAL INFORMATION

Prepared By: Regulatory Department

Disclaimer: This MSDS has been prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada's Controlled Product Regulations (CPR). To the best of our knowledge the information contained herein is accurate. Determination of safe handling, application and use of this material is the responsibility of the end user. This information is furnished without warranty, expressed or implied.

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Product Code: 21092

Print Date: September 26, 2014



Material Safety Data Sheet

Crystal Clean 106⁺ Mineral Spirits

Revision Date: 10/26/2009

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crystal Clean 106⁺ Mineral Spirits

Supplier: Heritage-Crystal Clean, Inc.
2175 Point Boulevard – Suite 375
Elgin, IL 60123-7873

Technical Contact: Heritage-Crystal Clean, Inc. - EHS Department
Telephone: 877-938-7948 or 847-836-5670
Fax: 847-836-5677
Email: ehs@crystal-clean.com
Website: www.crystal-clean.com

Synonyms: Mineral Spirits, Petroleum Naphtha, Parts Cleaner Solvent, Stoddard Solvent, Petroleum Distillates

EMERGENCY TELEPHONE NUMBERS

Medical:	Local Poison Control Center or Hospital
Technical Questions:	Heritage-Crystal Clean, LLC. 877-938-7948

2. COMPOSITION / INFORMATION OF INGREDIENTS

Component Name	CAS No.	Wt %
Petroleum Hydrocarbon Naphtha	Mixture	95 -100
1,2,4 - Trimethylbenzene	95-63-6	0 - 5

This solvent may be produced from several sources utilizing different refining processes that generate different CAS registry numbers based on the refining process used. Petroleum solvent naphtha, medium aliphatic is a complex stream of predominantly C9 to C12 hydrocarbons.

The Volume of 1,2,4 - Trimethylbenzene listed above is included in the Stoddard solvent mixture. It is listed separately for the purpose of SARA 313 reporting.

3. HAZARDS IDENTIFICATION

Major Routes of Entry: Skin contact. Inhalation

OSHA Physical Hazard Classification: Combustible

Crystal Clean 106⁺ Mineral Spirits

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Potential Health Effects:

Inhalation: Breathing of vapor or mist is possible and may be irritating to the respiratory system. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. In applications where vapors (caused by high temperatures) or mists (caused by mixing) are created, breathing may cause a mild burning sensation in the nose, throat, and lungs.

Eye Contact: This material may cause temporary discomfort or irritation to the eyes. Symptoms may include stinging, tearing, redness, and swelling of the eyes.

Skin: This material can be moderately irritating to the skin causing burning sensations, redness, and/or itching. Though non-toxic, if absorbed through the skin, it may produce central nervous depression effects (See Inhalation hazards).

Ingestion: Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Material may irritate mucous membranes of the mouth, throat, and esophagus. It can be readily absorbed by the stomach and intestinal tract. Symptoms include a burning sensation of the mouth and esophagus, nausea, vomiting, dizziness, staggering gait, drowsiness, loss of consciousness and delirium as well as central nervous system effects (See Inhalation hazards).

Symptoms of Exposure: Signs of central nervous system depression begin with headaches, dizziness, and apparent intoxication, through loss of consciousness.

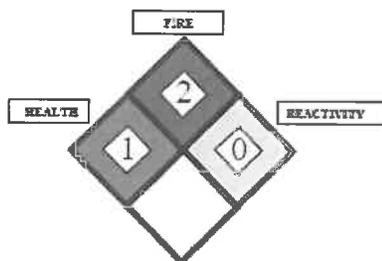
Aggravated Conditions: Skin contact can aggravate existing dermatitis. Preexisting eye and respiratory disorders may also be aggravated by exposure to this product.

NFPA Hazard Rating

- Health: 1 = Slight
- Fire 2 = Moderate
- Reactivity 0 = Negligible

NPCA/HMIS Rating:

- Health 1 = Slight
 - Fire 2 = Moderate
 - Reactivity 0 = Negligible
 - Protective Equipment C, X
- C = Safety goggles or glasses, gloves, synthetic apron
X = Consult supervisor for handling info.



Health	1
Flammability	2
Reactivity	0
Protective Equip C, X	

4. FIRST AID MEASURES

Inhalation: If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention.

Eyes: Flush eyes gently with water for at least 15 minutes while holding eyelids apart. Seek immediate medical attention.

Skin: Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion: DO NOT induce vomiting. Contact a physician, poison control, or a hospital emergency room immediately. Have victim rinse mouth with water to remove taste from mouth. If victim is coughing, choking, has shortness of breath or difficulty in breathing, transport to nearest medical facility for additional treatment.

Note to Physician: Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If coughing or difficult breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Vigorous anti-inflammatory/steroid treatment may be required at first evidence of upper airway or pulmonary edema. Administer 100% humidified oxygen with assisted ventilation, as required.

5. FIRE FIGHTING MEASURES

Flash Point:	>106 °F ; >43 °C TCC
Auto-ignition Point:	440 – 540 °F : 230 – 283 °C
Explosive Limits:	0.5 - 0.8% (lower) - 5 – 6% (upper)
NFPA 30 Classification:	Combustible Liquid Class II (NFPA 30)

Fire and Explosion Hazards: This material releases vapors at or approaching its flash point temperature. When mixed in air in certain proportions and exposed to an ignition source, its vapors can cause a flash fire. Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively

Extinguishing Media: Use water fog, carbon dioxide, dry chemical, or regular foam; Do not use a direct stream of water. Material will float and can be reignited on the surface of the water.

Firing Fighting Instructions: Flammable material. Clear fire area of non-emergency personnel. Do not enter confined fire space without full bunker gear including a positive pressure NIOSH – approved self-containing breathing apparatus. Stringer containers exposed to fire should be kept cool with water spray to prevent pressure build-up resulting in container rupture. In advanced fires, maintain safe distance from sealed containers.

6. ACCIDENTAL RELEASE MEASURES

Small Spill: appropriate inert absorbents, such as vermiculite, floor absorbent or absorbent booms or pads, can absorb small spills. Avoid breathing vapors and ventilate the area.

Large Spill: Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed. Stop spill at source if safe to do so. Prevent material from entering confined areas, drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil, and other material to proper non-leaking containers for disposal.

Precautions to be taken in Handling and Storing:

Keep containers closed when not in use. When opening covers and outlet caps on storage tanks, use face shield and gloves to avoid possible injury from pressurized hydrocarbon vapors. Do not overheat. Surfaces that are sufficiently hot may ignite liquid material. All five-gallon pails and larger containers, including tank cars and truck cargo tanks should be grounded and/or bonded when material is transferred to prevent ignition of vapors by static electricity. Hydrocarbon solvents are basically non-conductors of electricity but can become electrostatically charged during mixing, filtering, or pumping at high flow rates. If the charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids.

Store in a cool, dry, well-ventilated safety storage cabinet or room with appropriate labels. Do not store in closed vehicles. Keep away from ignition sources and ground all equipment containing this material. Containers must be able to withstand expansion and/or pressures expected from warming and cooling in storage.

7. HANDLING AND STORAGE

Storage and use areas should be No Smoking areas. Empty containers can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flames, sparks, or other sources of ignition. They may explode and cause injury or death; observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Eye Protection: Chemical splash goggles are advised to safeguard against potential eye contact, irritation, or injury. Ensure that an emergency eyewash station and safety shower are located nearby.

Skin Protection: Wear resistant gloves (consult your safety equipment supplier) To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protections: If engineering controls do not maintain airborne concentrations at a level that is adequate to protect worker health, a NIOSH/MISHA approved air supplied respirator must be worn in accordance with the OSHA

respiratory standard. Appropriate respirators may include air-purifying cartridge respirators for organic vapors, supplied air respirators, or self-contained breathing apparatus (in environments with unknown concentrations or emergency situations).

Engineering Controls: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below the permissible exposure limits and threshold limits values. All electrical equipment should comply with the NFPA National Electrical Code standards for hazardous locations.

Other/General Protection: Wear body-covering clothing to avoid prolonged or repeated exposure. Launder before reuse. Varying application methods can dictate the use of additional protective safety equipment such as impermeable aprons, etc.

Occupational Exposure Guidelines:

Substance: Petroleum Hydrocarbon Distillates

OSHA PEL 2900 mg/m³ or 500 ppm (8-hour)

ACGIH TLV 100 ppm (8-hour TWA)

Substance: 1,2,4 - Trimethylbenzene

ACGIH TLV 25 ppm (8 hour TWA)

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Clear with Blue Tint
Odor:	Hydrocarbon solvent odor
Melting Point:	-85 – -13 °F ; -65 – -25 °C
Boiling Point:	300 – 419 °F ; 149 – 215 °C
Vapor Pressure:	<1.0 mm Hg @ 20 °C, 68 °F
Reid Vapor Pressure:	< 0.1 psia (VP @ 38 °C , 100 °F)
Vapor Density (Air=1):	> 1.0
Specific Gravity:	0.78 – 0.79
Percent Volatiles:	100%
Percent VOC:	100%
Lbs/Gal VOC:	6.5 – 6.7
Solubility:	Negligible
pH	N/A

Physical properties given are typical for this product. Exact data varies depending upon manufacturer.

10. STABILITY AND REACTIVITY

Stability:	Stable
Incompatible Materials:	Strong oxidizers.
Hazardous Polymerization:	Will not occur.

Hazardous Decomposition Products: Thermal decomposition may result in an airborne mixture of solids (smoke and soot), liquids (mist), and gases including a

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complex mixture of fumes, carbon monoxide, carbon dioxide, and other organic hydrocarbons.

Conditions to Avoid: Avoid heat, open flames, strong acids and strong oxidizers.

11. TOXICOLOGICAL INFORMATION

Acute Studies:

1,2,4 Trimethylbenzene (CAS # 95-63-6)

Oral (LD₅₀): 6 g/kg (rat)
Inhalation (LC₅₀): 18 g/kg (rat, 4 hours)
Dermal (LD₅₀): Not Available

Petroleum Distillate: (CAS# 8052-41-3)

Oral (LD₅₀): > 5 g/kg (rat)
Inhalation (LC₅₀): > 5.5 g/kg (rat, 4 hours)
Dermal (LD₅₀): > 3 g/kg mg/kg (rabbit)

Miscellaneous Toxicological Information:

Based upon laboratory animal studies, repeated direct applications of Stoddard Solvent to the skin can produce defatting dermatitis, kidney damage, and changes in blood-forming capacity. Rats developed kidney damage and evaluated blood urea nitrogen levels when exposed to a concentration of 1.9 mg/l for 65 days. The kidney damage in rats appeared to involve both the tubules and glomeruli, but only occurred in males; so these effects may not be pertinent to humans. Male rats exposed to airborne concentrations of 100, 150, and 1,500 ppm for 6 hours per day, 5 days a week, for 90 days did not develop any functional or histological signs of Neurotoxicity. Stoddard Solvent and Mineral Spirits were not mutagenic in the Salmonella/microsome (Ames) assay, the in-vitro mouse bone marrow cell chromosome aberrations assay, and the in-vitro rate sister chromatid exchanges assay.

Trimethylbenzene are primary skin irritants and may cause asthmatic bronchitis and/or anemia. Based upon animal reproductive/development studies, Trimethylbenzene may also cause fetal toxicity.

12. ECOLOGICAL INFORMATION

Releases to water and streams may cause fouling of water. May be toxic to aquatic animals.

13. DISPOSAL CONSIDERATIONS

Material: Maximize material recovery for reuse or recycling. If this material is classified as a waste, this product includes a hazardous waste characteristic of ignitability (flash point under 140 F), under RCRA criteria of 40 CFR 261.

Container: Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Do not puncture, cut, or weld unclean drums. Send drum to metal or drum reclaimer.

Crystal Clean 106+ Mineral Spirits

14. TRANSPORT INFORMATION

DOT Non-Bulk Package (< 119 G container)

Shipping Name: Mineral Spirits (Petroleum Naphtha) (Not DOT regulated)

Solvent material is subject to DOT Exception 49 CFR 173.150(f)(2) for domestic shipment only and in non-bulk packaging less than 119 gallons, unless material becomes a hazardous waste.

DOT Bulk Package (> 119 G container)

Shipping Name: Combustible liquid, n.o.s. (petroleum naphtha)

UN/NA #: UN 1268

Hazard Class: Combustible Liquid

Packing Group: III

Placards: Class 3, UN 1268

Packaging Exceptions: 49 CFR 173.150(f)(3)

Packaging Requirements: 49 CFR 173.242

North America Emergency Response Guidebook Guide No: 128

This material is not classified as hazardous under IATA and IMDG regulations.

15. REGULATORY INFORMATION

US Federal Regulations:

TSCA: This material is listed in the U.S. Toxic Substance Control Act Chemical Substance Inventory 8052-41-3.

CWA: This material is classified as an oil under Section 311 of the Clean Water Act and the Oil Pollution Control Act of 1990. Spills and discharges that cause a sheen on surface waters or in waterways and seaways that lead to surface waters must be reported to the national Response Center at 800-424-8802

CERCLA: The following materials have reportable quantities (RQ) listed under the Comprehensive Environmental Response Compensation, and Liability Act. CFR302.4(a):

<u>Component</u>	<u>RQ (lbs)</u>
None	***

CERCLA RQ: 40 CFR 302.4(b): Materials without a "listed" RQ may be reportable as an "unlisted hazardous substance". See 40 CFR 302.5(b).

SARA 302: The Following components are listed as Extremely Hazardous Substances under the Emergency Planning and Community Right-To-Know Act

<u>Components:</u>	<u>RQ (lbs)</u>
None	***

SECTION 302 HAZARD CLASS:

Acute health hazard
Chronic health hazard
Fire hazard

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SARA 313 Notification and Components: This product contains the following constituents in concentrations at or above the minimum levels and which are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of the Superfund amendments and reauthorization Act of 1986 (SARA). The act also requires that this notice accompany the MSDS in all redistribution and may not be detached or omitted

<u>Section 313 Component(s)</u>	<u>CAS Number</u>
1,2,4 - Trimethylbenzene	95-63-6

State Regulations:

California Prop 65: This product may contain the following chemicals known to the State of California to cause cancer:

Chemical Name	CAS#
Ethylbenzene	100-41-4
Naphthalene	91-20-3

16. OTHER INFORMATION

Reference Documents:

Information provided in this Material Safety Data Sheet is supplied by the manufacturers of the products supplied to Heritage Crystal Clean, LLC.

Although reasonable care has been taken in the preparation of this document we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regardless of the suitability of this information for the user's intended purposes or the consequences of its use. Each individual should make a determination as to the suitability of the information of his or her particular purpose(s).

Heritage-Crystal Clean, LLC.



**Safety Data Sheet (SDS)
50366**

SDS Revision Date: 07/16/2015

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity 50366

Alternate Names 50366

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use Contact ChemStation representative.

Application Method Contact ChemStation representative.

1.3. Details of the supplier of the safety data sheet

Company Name ChemStation International, Inc.
3400 Encrete Lane
Dayton OH 45439

Emergency

CHEMTREC (USA) (800) 424-9300

Customer Service: ChemStation International, Inc. (800) 554-8265

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Acute Tox. 5;H303 May be harmful if swallowed. (Not adopted by US OSHA)

Skin Irrit. 2;H315 Causes skin irritation.

Eye Dam. 1;H318 Causes serious eye damage.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Danger

H303 May be harmful if swallowed.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.

[Prevention]:

P264 Wash thoroughly after handling.
 P280 Wear protective gloves / eye protection / face protection.

[Response]:

P302+352 IF ON SKIN: Wash with plenty of soap and water.
 P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
 P310 Immediately call a POISON CENTER or doctor / physician.
 P312 Call a POISON CENTER or doctor / physician if you feel unwell.
 P321 Specific treatment (see information on this label).
 P362 Take off contaminated clothing and wash before reuse.

[Storage]:

No GHS storage statements

[Disposal]:

No GHS disposal statements

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
longchain alcohol alkoxyated CAS Number: 0166736-08-9	1.0 - 10	Acute Tox. 4;H302 Eye Dam. 1;H318	[1]
Ethanolamine CAS Number: 0000141-43-5	1.0 - 10	Acute Tox. 4;H332 Acute Tox. 4;H312 Acute Tox. 4;H302 Skin Corr. 1B;H314	[1][2]
Dimethyldodecylamine oxide CAS Number: 0001643-20-5	1.0 - 10	Skin Irrit. 2;H315 Eye Dam. 1;H318	[1]
C9-C11 Cynthetic Alcohol, Ethoxyated CAS Number: 0068439-46-3	1.0 - 10	Skin Irrit. 2;H315 Eye Dam. 1;H318	[1]
Potassium carbonate CAS Number: 0000584-08-7	1.0 - 10	Eye Irrit. 2;H319 Acute Tox. 4;H302 Skin Irrit. 2;H315	[1]
Propylene Glycol CAS Number: 0000057-55-6	1.0 - 10	Not Classified	[1]
Petroleum distillates, hydrotreated light CAS Number: 0064742-47-8	1.0 - 10	Asp. Tox. 1;H304	[1]
Quaternary coco alkylamine ethoxyate CAS Number: 0061791-10-4	1.0 - 10	Eye Irrit. 2;H319 Aquatic Chronic 3;H412	[1]
Tripropylene glycol monomethyl ether CAS Number: 0025498-49-1	1.0 - 10	Not Classified	[1]
(2-methoxymethylethoxy)propanol CAS Number: 0034590-94-8	1.0 - 10	Not Classified	[1][2]

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] FBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview	No specific symptom data available. See section 2 for further details.
Eyes	Causes serious eye damage.
Skin	Causes skin irritation.
Ingestion	May be harmful if swallowed. (Not adopted by US OSHA)

5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, powder, water spray.

Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water ways.

ERG Guide No. 154

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapors. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Incompatible materials: Any acidic material, ammonia, urea, oxidizable materials and metals such as nickel, copper, tin, aluminum and iron.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000057-55-6	Propylene Glycol	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	10 mg/m ³ TWA (listed as AIHA WEEL)
0000141-43-5	Ethanolamine	OSHA	TWA 3 ppm (6 mg/m ³)
		ACGIH	TWA: 3 ppm STEL: 6 ppm
		NIOSH	TWA 3 ppm (8 mg/m ³) ST 6 ppm (15 mg/m ³)
		Supplier	No Established Limit
0000584-08-7	Potassium carbonate	OSHA	No Established Limit

		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0001643-20-5	Dimethyldodecylamine oxide	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0025498-49-1	Tripropylene glycol monomethyl ether	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0034590-94-8	(2-methoxymethylethoxy)propanol	OSHA	TWA 100 ppm (600 mg/m ³) [skin]
		ACGIH	TWA: 100 ppm STEL: 150 ppm Skin
		NIOSH	TWA 100 ppm (600 mg/m ³) ST 150 ppm (900 mg/m ³) [skin]
		Supplier	No Established Limit
0061791-10-4	Quaternary coco alkylamine ethoxylate	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0064742-47-8	Petroleum distillates, hydrotreated light	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	Recommended 300 ppm PEL
0068439-46-3	C9-C11 Synthetic Alcohol, Ethoxylated	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0166736-08-9	longchain alcohol alkoxyated	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000057-55-6	Propylene Glycol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000141-43-5	Ethanolamine	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000584-08-7	Potassium carbonate	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0001643-20-5	Dimethyldodecylamine oxide	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0025498-49-1	Tripropylene glycol monomethyl ether	OSHA	Select Carcinogen: No

		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0034590-94-8	(2-methoxymethylethoxy)propanol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0061791-10-4	Quaternary coco alkylamine ethoxylate	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0064742-47-8	Petroleum distillates, hydrotreated light	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0068439-46-3	C9-C11 Synthetic Alcohol, Ethoxylated	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0166736-08-9	longchain alcohol alkoxyated	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory

Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.

Eyes

Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.

Skin

Chemical resistant clothing such as coveralls/apron boots should be worn. Chemical Impervious Gloves

Engineering Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Clear straw Thick liquid
Odor	Mild detergent
Odor threshold	Not Measured
pH	11.9 - 12.5
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	212 deg F
Flash Point	>200 degrees F PMCC (non-flammable)
Evaporation rate (Ether = 1)	0.33
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured

Vapor pressure (Pa)	Not Determined
Vapor Density	Not Determined
Specific Gravity	1.033 - 1.043
Solubility in Water	Not Measured
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
Foaming	Moderate

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Any acidic material, ammonia, urea, oxidizable materials and metals such as nickel, copper, tin, aluminum and iron.

10.6. Hazardous decomposition products

No hazardous decomposition data available.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
longchain alcohol alkoxylated - (166736-08-9)	No data available	No data available	No data available	No data available	No data available
Ethanolamine - (141-43-5)	1,720.00, Rat - Category: 4	1,015.00, Rabbit - Category: 4	No data available	No data available	No data available
Dimethyldodecylamine oxide - (1643-20-5)	No data available	No data available	No data available	No data available	No data available
C9-C11 Synthetic Alcohol, Ethoxylated - (68439-46-3)	5,100.00, Rat - Category: NA	No data available	No data available	No data available	No data available

Potassium carbonate - (584-08-7)	No data available	No data available	No data available	No data available	No data available
Propylene Glycol - (57-55-6)	20,000.00, Rat - Category: NA	20,800.00, Rabbit - Category: NA	105.00, Rat - Category: NA	No data available	No data available
Petroleum distillates, hydrotreated light - (64742-47-8)	5,000.00, Rat - Category: 5	>2,000.00, Rabbit - Category: 5	No data available	No data available	No data available
Quaternary coco alkylamine ethoxylate - (61791-10-4)	No data available	No data available	No data available	No data available	No data available
Tripropylene glycol monomethyl ether - (25498-49-1)	No data available	No data available	No data available	No data available	No data available
(2-methoxymethylethoxy)propanol - (34590-94-8)	3,500.00, Rat - Category: 5	19,000.00, Rabbit - Category: NA	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	5	May be harmful if swallowed. (Not adopted by US OSHA)
Acute toxicity (dermal)	—	Not Applicable
Acute toxicity (inhalation)	—	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	—	Not Applicable
Skin sensitization	—	Not Applicable
Germ cell mutagenicity	—	Not Applicable
Carcinogenicity	—	Not Applicable
Reproductive toxicity	—	Not Applicable
STOT-single exposure	—	Not Applicable
STOT-repeated exposure	—	Not Applicable
Aspiration hazard	—	Not Applicable

12. Ecological information

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and GHS and is not classified as dangerous for the environment, but contains substance(s) dangerous for the environment. See section 3 for details

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
longchain alcohol alkoxylated - (166736-08-9)	Not Available	Not Available	Not Available
Ethanolamine - (141-43-5)	150.00, Oncorhynchus mykiss	65.00, Daphnia magna	15.00 (72 hr), Desmodesmus subspicatus
Dimethyldodecylamine oxide - (1643-20-5)	Not Available	Not Available	Not Available
C9-C11 Synthetic Alcohol, Ethoxylated - (68439-46-3)	8.50, Fimephales promelas	2.686, Daphnia magna	Not Available
Potassium carbonate - (584-08-7)	Not Available	Not Available	Not Available
Propylene Glycol - (57-55-6)	710.00, Fimephales promelas	10,000.00, Daphnia magna	Not Available
Petroleum distillates, hydrotreated light - (64742-47-8)	Not Available	Not Available	Not Available
Quaternary coco alkylamine ethoxylate - (61791-10-4)	Not Available	Not Available	Not Available
Tripropylene glycol monomethyl ether - (25498-49-1)	Not Available	Not Available	Not Available
(2-methoxymethylethoxy)propanol - (34590-94-8)	10,000.00, Fimephales promelas	1,919.00, Daphnia magna	969.00 (72 hr), Algae

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

14.1. UN number NA1760
14.2. UN proper shipping name Compound, Cleaning, Liquid, (Ethanolamine)
14.3. Transport hazard class(es) 8
14.4. Packing group III

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA) All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification D2B E

US EPA Tier II Hazards Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:
(No Product Ingredients Listed)

EPCRA 302 Extremely Hazardous :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:
(2-methoxymethylethoxy)propanol

Proposition 65 - Carcinogens (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%):
(2-methoxymethylethoxy)propanol

Ethanolamine
Propylene Glycol

Penn RTK Substances (>1%):
(2-methoxymethylethoxy)propanol
Ethanolamine
Propylene Glycol

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H412 Harmful to aquatic life with long lasting effects.

End of Document

ATTACHMENT I

Emissions Unit Table

ATTACHMENT J

Emission Points Data Summary Sheet (Table 1 and 2)

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type ¹	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS ³ (Speciate VOCs & HAPs)	Maximum Potential Uncontrolled Emissions ⁴		Maximum Potential Controlled Emissions ⁵		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used ⁶	Emission Concentration ⁷ (ppmv or mg/m ⁴)
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
1E	Horizontal Stack	IS	Engine Dyno	N/A	N/A	17.1 hrs/d	6257	PM/PM10/PM2.5	2.750	1.921	2.750	1.921	Gas	Emission Factor (Restricted Emissions)	Unknown
								NOx	38.750	27.330	38.750	27.330			
								CO	8.350	5.887	8.350	5.887			
								SO2	2.563	1.797	2.563	1.797			
								VOC	3.143	2.231	3.143	2.231			
								CO2e	1438	1016	1438	1016			
								Total HAPs	0.034	0.024	0.034	0.024			
								See calculations for speciated HAPs							
								PM/PM10/PM2.5	2.750	1.921	2.750	1.921			
								NOx	38.750	27.330	38.750	27.330			
CO	8.350	5.887	8.350	5.887											
SO2	2.563	1.797	2.563	1.797											
VOC	3.143	2.231	3.143	2.231											
CO2e	1438	1016	1438	1016											
Total HAPs	0.034	0.024	0.034	0.024											
See calculations for speciated HAPs															
2E	Horizontal Stack	IS	Engine Dyno	N/A	N/A	17.1 hrs/d	6257	PM/PM10/PM2.5	2.750	1.921	2.750	1.921	Gas	Emission Factor (Restricted Emissions)	Unknown
								NOx	38.750	27.330	38.750	27.330			
								CO	8.350	5.887	8.350	5.887			
								SO2	2.563	1.797	2.563	1.797			
								VOC	3.143	2.231	3.143	2.231			
								CO2e	1438	1016	1438	1016			
								Total HAPs	0.034	0.024	0.034	0.024			
								See calculations for speciated HAPs							
								PM/PM10/PM2.5	2.750	1.921	2.750	1.921			
								NOx	38.750	27.330	38.750	27.330			
CO	8.350	5.887	8.350	5.887											
SO2	2.563	1.797	2.563	1.797											
VOC	3.143	2.231	3.143	2.231											
CO2e	1438	1016	1438	1016											
Total HAPs	0.034	0.024	0.034	0.024											
See calculations for speciated HAPs															

3E	Vertical Capped Stack	2S	Chassis Dyno	N/A	N/A	12.0 hrs/d	4380	PM10/PM2.5	1.320 18.600 4.008 1.230 1.508 690 0.016	2.891 40.734 8.778 2.694 3.304 1511 0.036	1.320 18.600 4.008 1.230 1.508 690 0.016	2.891 40.734 8.778 2.694 3.304 1511 0.036	Gas	Emission Factor	Unknown
4E	Capped Upward Vertical Stack	3S	Paint Booth	1C	Fabric Filter	C	8760	PM/PM10/PM2.5 VOC Xylene Ethylbenzene Methyl Isobutyl Ketone Total HAPs	0.055 5.208 1.656 0.297 1.274 3.226	0.243 22.813 7.252 1.299 5.581 14.131	0.055 5.208 1.656 0.297 1.274 3.226	0.243 22.813 7.252 1.299 5.581 14.131	Gas/Solid	Manufacturer Data	Unknown

5E	General Building Vents/ Openings	4S & 5S	Filter Cleaner & Parts Washers	2C	Fabric Filters	C	8760	PM10/PM2.5	5.550	24.309	0.111	0.488	Gas/Solid	Varies	Unknown
								VOC	0.032	0.140	0.032	0.140			
								Total HAPs:	-	-	-	-			
								See calculations for speciated VOCs							
6E	General Emergency Generator Exhaust	6S	Emergency Generator	N/A	N/A	C	8760	PM/PM10/PM2.5	0.139	0.035	0.139	0.035	Gas	Emission Factor	Unknown
								NOx	1.954	0.488	1.954	0.488			
								CO	0.421	0.105	0.421	0.105			
								SO2	0.129	0.032	0.129	0.032			
								VOC	0.158	0.040	0.158	0.040			
								CO2e	72	18	72	18			
								Total HAPs	0.017	<0.001	0.017	<0.001			
								See calculations for speciated HAPs							

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- 1 Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- 2 Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- 3 List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.
- 4 Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- 5 Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- 6 Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- 7 Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂, use units of ppmv (See 45CSR10).

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 2: Release Parameter Data

Emission Point ID No. (Must match Emission Units Table)	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)			UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow ¹ (acfm) at operating conditions	Velocity (fps)	Ground Level (Height above mean sea level)	Stack Height ² (Release height of emissions above ground level)	Northing	Easting	
1E	0.833	1000	8,669	265	792	22	4250.158	431.188	
2E	0.833	1000	8,669	265	792	22	4250.160	431.191	
3E	2	1000	17,338 est.	92 est.	792	25 est.	4250.149	431.187	
4E	3	Ambient	21,195 est.	50 est.	792	25 est.	4250.144	431.190	
5E	N/A	Ambient	N/A	N/A	792	10 ft average	4250.101	431.206	
6E	N/A	1063 est.	N/A	N/A	792	2 ft average	4250.179	431.216	

¹ Give at operating conditions. Include inerts.

² Release height of emissions above ground level.

ATTACHMENT K

Fugitive Emissions Data Summary Sheet

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS	
1.) Will there be haul road activities?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."	

FUGITIVE EMISSIONS SUMMARY		All Regulated Pollutants - Chemical Name/CAS ¹	Maximum Potential Uncontrolled Emissions ²		Maximum Potential Controlled Emissions ³		Est. Method Used ⁴
			lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads							
Unpaved Haul Roads							
Storage Pile Emissions							
Loading/Unloading Operations							
Wastewater Treatment Evaporation & Operations							
Equipment Leaks			Does not apply		Does not apply		
General Clean-up VOC Emissions							
Other (Cooling Tower - 7S)		PM/PM10/PM2.5	0.176	0.769	0.176	0.769	O - Em. Factors

¹ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.

² Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

³ Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁴ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

ATTACHMENT L

Emissions Unit Data Sheets

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 1S

1. Name or type and model of proposed affected source:

Engine Dynamometer (dyno).

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

Fuel consumption varies depending on the specific engine being tested. Primary Fuel is diesel, natural gas is a possible secondary.

4. Name(s) and maximum amount of proposed material(s) produced per hour:

This equipment does not produce material.

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

Fuel is combusted in each engine as it is tested.

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):			
(a) Type and amount in appropriate units of fuel(s) to be burned:			
Varies depending on engine.			
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:			
Generic diesel fuel (natural gas secondary possibility).			
(c) Theoretical combustion air requirement (ACF/unit of fuel):			
	@	°F and	psia.
(d) Percent excess air:			
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:			
2,500 maximum hp engine can be tested.			
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:			
N/A			
(g) Proposed maximum design heat input:		6.36	× 10 ⁶ BTU/hr.
7. Projected operating schedule:			
Hours/Day	17.1	Days/Week	7
		Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:				
@	1000	°F and	Unknown	psia
a. NO _x		77.50 lb/hr	Unknown	grains/ACF
b. SO ₂		5.125 lb/hr	Unknown	grains/ACF
c. CO		16.70 lb/hr	Unknown	grains/ACF
d. PM ₁₀		5.50 lb/hr	Unknown	grains/ACF
e. Hydrocarbons		6.285 lb/hr	Unknown	grains/ACF
f. VOCs		6.285 lb/hr	Unknown	grains/ACF
g. Pb		0.00 lb/hr	Unknown	grains/ACF
h. Specify other(s)				
CO _{2e}		2875 lb/hr	Unknown	grains/ACF
Total HAPs		0.068 lb/hr	Unknown	grains/ACF
Speciated HAPs		See Calculations lb/hr		grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING
 N/A

RECORDKEEPING

Compliance with restricted PTE will be confirmed by tracking diesel fuel usage (and adjusted/corrected for any natural gas if utilized)

REPORTING
 N/A

TESTING
 N/A

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
 N/A

Attachment L

**Emission Unit Data Sheet General - #2
Engine Dyno**

The Engine Dynamometer (dyno) testing station is rated to test engines up to 2,500 hp. The only emissions produced are based on fuel combustion and are generated directly from the engine being tested. These emissions exhaust via two stacks outdoors. Cummins is proposing a 190,000 gallon (or natural gas equivalent) per year on a 12-month rolling average fuel usage limit. Diesel is the primary fuel combusted, but the facility would prefer to have the option to run cleaner natural gas engines in the future. Emissions are based solely on diesel combustion as a worst-case scenario.

**Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 2S

<p>1. Name or type and model of proposed affected source:</p> <p>Chassis Dynamometer (dyno).</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Fuel consumption varies depending on the specific engine being tested. Primary Fuel is diesel, natural gas is a possible secondary.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>This equipment does not produce material.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>Fuel is combusted in each engine as it is tested.</p>

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):			
(a) Type and amount in appropriate units of fuel(s) to be burned:			
Varies depending on engine.			
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:			
Generic diesel fuel (natural gas secondary possibility).			
(c) Theoretical combustion air requirement (ACF/unit of fuel):			
@	°F and	psia.	
(d) Percent excess air:			
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:			
600 maximum hp engine can be tested.			
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:			
N/A			
(g) Proposed maximum design heat input:		1.53	× 10 ⁶ BTU/hr.
7. Projected operating schedule:			
Hours/Day	12.0	Days/Week	7
		Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	1000	°F and	Unknown	psia
a. NO _x	18.60	lb/hr	Unknown	grains/ACF
b. SO ₂	1.23	lb/hr	Unknown	grains/ACF
c. CO	4.01	lb/hr	Unknown	grains/ACF
d. PM ₁₀	1.32	lb/hr	Unknown	grains/ACF
e. Hydrocarbons	1.51	lb/hr	Unknown	grains/ACF
f. VOCs	1.51	lb/hr	Unknown	grains/ACF
g. Pb	0.00	lb/hr	Unknown	grains/ACF
h. Specify other(s)				
CO _{2e}	690	lb/hr	Unknown	grains/ACF
Total HAPs	0.0163	lb/hr	Unknown	grains/ACF
Speciated HAPs	See Calculations	lb/hr		grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING
 N/A

RECORDKEEPING
 N/A

REPORTING
 N/A

TESTING
 N/A

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
 N/A.

Attachment L

**Emission Unit Data Sheet General - #2
Chassis Dyno**

The Chassis Dyno testing station tests fully assembled vehicles up to 600 hp. The only emissions produced are based on fuel combustion and are generated directly from the vehicle's engine being tested and exhaust via an outdoor stack. Diesel is the primary fuel combusted, but the facility would prefer to have the option to run cleaner natural gas engines in the future. Emissions are based solely on diesel combustion as a worst-case scenario.

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 3S

<p>1. Name or type and model of proposed affected source:</p> <p>Paint Booth</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>1.5 gallons per hour of coating including thinners and cleanup material.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>This process does not produce material.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>It is assumed that all used organic compounds will be emitted.</p>

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

N/A.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input:

× 10⁶ BTU/hr.

7. Projected operating schedule:

Hours/Day

24

Days/Week

7

Weeks/Year

52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	70	°F and	Unknown	psia
a. NO _x	0	lb/hr	0	grains/ACF
b. SO ₂	0	lb/hr	0	grains/ACF
c. CO	0	lb/hr	0	grains/ACF
d. PM ₁₀	5.54	lb/hr	Unknown	grains/ACF
e. Hydrocarbons	5.21	lb/hr	Unknown	grains/ACF
f. VOCs	5.21	lb/hr	Unknown	grains/ACF
g. Pb	0	lb/hr	0	grains/ACF
h. Specify other(s)				
Total HAPs	3.23	lb/hr	Unknown	grains/ACF
Xylene	1.66	lb/hr	Unknown	grains/ACF
Ethyl Benzene	0.30	lb/hr	Unknown	grains/ACF
Methyl Isobutyl Kctone	1.27	lb/hr	Unknown	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING
 N/A

RECORDKEEPING

Daily Coating usage and associated VOC and HAPs emissions

REPORTING
 N/A

TESTING
 N/A

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

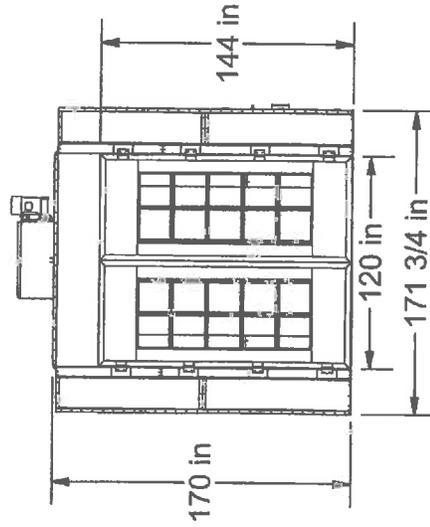
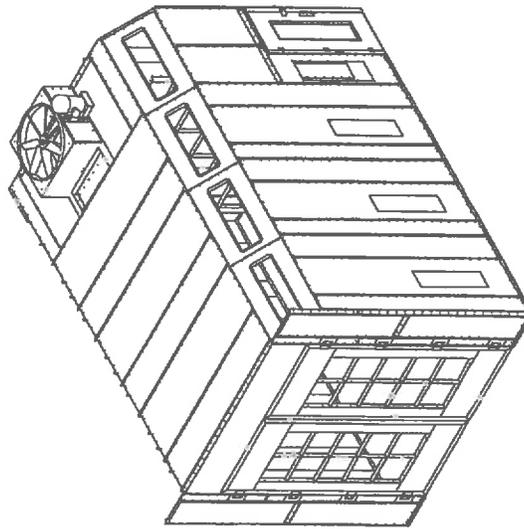
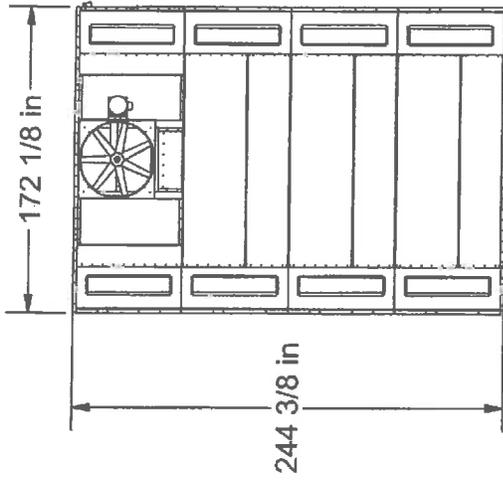
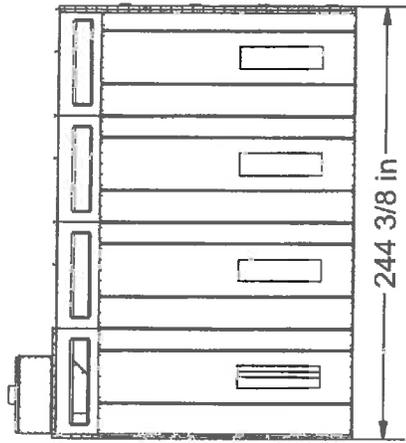
10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
 N/A.

Attachment L

**Emission Unit Data Sheet General - #2
Paint Booth**

This unit is a completely enclosed paint booth. Coatings are applied via spray guns at a maximum usage rate of 1.5 gallons of coating per hour. The booth air is pulled through fabric filters then exhausts through a stack. Emissions will vary depending on the coating applied. The emissions calculations included in this application package are based on production using the worst-case scenario as applied coatings (highest solids content for PM/PM10/PM2.5 emissions, highest VOC content for VOC emissions, and highest HAPs content for HAPs emissions).

ELECTRICAL REQUIREMENT	
STANDARD EQUIP.	FULL LOAD AMPS
VOLTS	



SPECIFICATIONS

- 1) ALL PANELS CONSTRUCTED WITH 18 GAUGE GALV. STEEL WITH PANELS FLANGES ON OUTSIDE OF UNIT.
- 2) BASE OF UNIT MOUNTED ON GALVANIZED FLOOR RAILS.
- 3) ACCESS DOOR CAN BE LOCATED ON EITHER CORNER OF THE UNIT.
- 4) INSIDE PANEL SEAMS ARE SMOOTH.
- 5) BASE OF DOORS SEALED WITH NEOPRENE STRIPS.
- 6) LIGHT FIXTURES MOUNTED ON CLEAR TEMPERED GLASS.
- 7) VENT LATCHES ON DOORS.
- 8) (1) 3'-4" X 19'-8" PAINT ARRESTOR.
- 9) (8) 30" X 96" INTAKE MEDIA.
- 10) UNIT FACTORY BUILT TO MEET OR EXCEED BOCA, OSHA, & NFPA - 33.
- 11) BASE OF UNIT MOUNTED TO CONCRETE WITH 3/8" DIAMETER X 1-1/2" EMBEDDED ANKR-TITE AT11 WEDGE ANCHORS 42" O.C. ICBO ER 1821.

**Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 4S

<p>1. Name or type and model of proposed affected source:</p> <p>Filter Cleaner - FSX TrapBlast Pnuematic DPF Cleaner</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>2 dirty filters per hour.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>2 clean filters per hour.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>N/A.</p>

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

N/A.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input:

× 10⁶ BTU/hr.

7. Projected operating schedule:

Hours/Day

24

Days/Week

7

Weeks/Year

52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	70	°F and	Unknown	psia
a. NO _x	0	lb/hr	0	grains/ACF
b. SO ₂	0	lb/hr	0	grains/ACF
c. CO	0	lb/hr	0	grains/ACF
d. PM ₁₀	5.55	lb/hr	Unknown	grains/ACF
e. Hydrocarbons	0	lb/hr	0	grains/ACF
f. VOCs	0	lb/hr	0	grains/ACF
g. Pb	0	lb/hr	0	grains/ACF
h. Specify other(s)				
None.		lb/hr		grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING
 N/A

RECORDKEEPING
 N/A

REPORTING
 N/A

TESTING
 N/A

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
 N/A.

Attachment L

**Emission Unit Data Sheet General - #2
Filter Cleaner**

This emissions unit is used to clean dirty diesel particulate vehicle filters (DPFs). The dirty filter is loaded into the chamber and a nozzle blows pressurized air and generates electric heat as needed to clean the filter. The exhaust is then run through two filters in the piece of equipment before venting inside the facility. The emissions are very limited but may vary slightly based on the loading of each filter.



DIESEL PARTICULATE FILTER CLEANING EQUIPMENT

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FSX TrapBlaster™ Pneumatic DPF Cleaner



The TrapBlaster™ supports two modes of operation:

FullAir mode - 120 CFM/100 PSI of dry air delivered to the TrapBlaster running Full Air Mode. Usually this can be accomplished using a 30 to 40 HP air compressor depending on air compressor manufacturer, air dryer used, pipe configuration and altitude.

AirSaver mode - For lower volume shops get your filters "FSX Clean" with a minimum of 60 CFM/ 100 PSI of dry air delivered to the TrapBlaster, typically with a 20hp or greater compressor. AirSaver mode has been certified to clean filters just as well as FullAir mode. With a smaller air supply and alternating upper and lower air blast nozzles, the same level of cleaning is performed by extending the process time.

Contact [Sales](#) to order your FSX TrapBlaster™ today!

[FEATURES](#)

[INCLUDED](#)

[SPECIFICATIONS](#)

[REQUIREMENTS](#)

[VIDEO](#)

Ancillary equipment required:

Full Air Mode

- 120 Cubic Feet per min (CFM) or 3400 liters per minute (l/min)
100 PSI or 7 Bar dry air delivered to TrapBlaster
- Minimum 125CFM/125PSI 30HP Air Compressor or 22.5 KW: larger air compressor may be required depending on compressor manufacturer, air dryer used, pipe configuration and altitude.

AirSaver Mode

- 60 Cubic Feet p/min (CFM) or 1700 liters per minute (l/min)
100 PSI or 7 Bar dry air delivered to the TrapBlaster
- Minimum 68CFM/100PSI 20HP Air Compressor or 15 KW

Air Dryer

High Efficiency (Required) – desiccant style or refrigeration style for 120 CFM/3400 l/min at outlet

Pipe Diameter

1 1/2" ID delivery line

Dust Collector

1400 CFM or greater (with clean filters)

FSX Equipment Inc. || 10404 Mountain Loop Highway Granite Falls, WA 98252-1617 || 360-691-2999

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**Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 55

<p>1. Name or type and model of proposed affected source:</p> <p>Parts Washers - (2) Repair Shop Crystal Clean Parts Washers, (2) MRC Rotary Parts Washers, and (4) MRC Various Parts Washers</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Dirty parts as needed.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Cleaned parts as needed.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>Emissions are based on evaporation of cleaning fluid.</p>

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):		
(a) Type and amount in appropriate units of fuel(s) to be burned:		
N/A.		
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:		
(c) Theoretical combustion air requirement (ACF/unit of fuel):		
@	°F and	psia.
(d) Percent excess air:		
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:		
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:		
(g) Proposed maximum design heat input:		× 10 ⁶ BTU/hr.
7. Projected operating schedule:		
Hours/Day	24	Days/Week
		7
		Weeks/Year
		52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:				
@	70	°F and	Unknown	psia
a. NO _x	0	lb/hr	0	grains/ACF
b. SO ₂	0	lb/hr	0	grains/ACF
c. CO	0	lb/hr	0	grains/ACF
d. PM ₁₀	0	lb/hr	0	grains/ACF
e. Hydrocarbons	0.032	lb/hr	Unknown	grains/ACF
f. VOCs	0.032	lb/hr	Unknown	grains/ACF
g. Pb	0	lb/hr	0	grains/ACF
h. Specify other(s)				
None.		lb/hr		grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING
 N/A

RECORDKEEPING
 N/A

REPORTING
 N/A

TESTING
 N/A

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
 N/A.

Attachment L

**Emission Unit Data Sheet General - #2
Parts Washers**

This emission unit consists of (2) Repair Shop Crystal Clean Parts Washers, (2) MRC Rotary Parts Washers, and (4) MRC Various Parts Washers. Emissions are based solely on the evaporation of the material stored in the parts washer. Actual emissions will vary depending on the material used in the parts washer; however the potential emissions included with this application assume each parts washer is using the worst-case scenario material.

**Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 6S

<p>1. Name or type and model of proposed affected source:</p> <p>Emergency Generator - 47 kw (63 hp) diesel emergency generator installed in June 2009.</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>3.4 gallons of diesel fuel per hour.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>No material is produced by this process.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>Fuel is combusted in the engine.</p>

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:				
@	1000	°F and	Unknown	psia
a. NO _x		1.954 lb/hr	Unknown	grains/ACF
b. SO ₂		0.129 lb/hr	Unknown	grains/ACF
c. CO		0.421 lb/hr	Unknown	grains/ACF
d. PM ₁₀		0.139 lb/hr	Unknown	grains/ACF
e. Hydrocarbons		0.158 lb/hr	Unknown	grains/ACF
f. VOCs		0.158 lb/hr	Unknown	grains/ACF
g. Pb		0 lb/hr	0	grains/ACF
h. Specify other(s)				
CO _{2e}		72 lb/hr	Unknown	grains/ACF
Total HAPs		<0.01 lb/hr	Unknown	grains/ACF
Speciated HAPs		See Calculations lb/hr	Unknown	grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

40 CFR 63 Subpart ZZZZ

- Install a non-resettable hour meter on the engine.
- Operating the engine only for emergency situations or for maintenance and testing.
- Limiting operation for maintenance and testing to less than 50 hours per year.
- Use only ultra-low sulfur diesel (maximum 15 ppm sulfur by weight)

RECORDKEEPING

40 CFR 63 Subpart ZZZZ

- Maintaining manufacturer certification that the engine meets the emergency or non-emergency emission standards in Table 4 to 40 CFR 60 Subpart IIII
- Maintain a log of operation that indicates when the engine is used for emergency situations, maintenance and testing, and other non-emergency situations.
- Maintain records of annual maintenance.

REPORTING

40 CFR 63 Subpart ZZZZ

TESTING

40 CFR 63 Subpart ZZZZ

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

N/A

Attachment L

**Emission Unit Data Sheet General - #2
Emergency Generator**

There is a diesel-fueled emergency generator located onsite rated at 47 kW (63 hp). This emission unit only operates during emergencies and for limited testing and maintenance. The only emissions associated with this unit are from diesel combustion that vent outdoors.

**Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 7S

<p>1. Name or type and model of proposed affected source:</p> <p>Cooling Tower</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Estimated flow rate of 9,240 gallons/hour.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Estimated 9,240 gallons/hour of cooled water.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>None.</p>

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):		
(a) Type and amount in appropriate units of fuel(s) to be burned:		
N/A.		
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:		
(c) Theoretical combustion air requirement (ACF/unit of fuel):		
@	°F and	psia.
(d) Percent excess air:		
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:		
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:		
(g) Proposed maximum design heat input:		× 10 ⁶ BTU/hr.
7. Projected operating schedule:		
Hours/Day	24	Days/Week
		7
		Weeks/Year
		52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	70	°F and	Unknown	psia
a. NO _x	0	lb/hr	0	grains/ACF
b. SO ₂	0	lb/hr	0	grains/ACF
c. CO	0	lb/hr	0	grains/ACF
d. PM ₁₀	0.18	lb/hr	Unknown	grains/ACF
e. Hydrocarbons	0	lb/hr	0	grains/ACF
f. VOCs	0	lb/hr	0	grains/ACF
g. Pb	0	lb/hr	0	grains/ACF
h. Specify other(s)				
None.		lb/hr		grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

N/A

RECORDKEEPING

N/A

REPORTING

N/A

TESTING

N/A

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

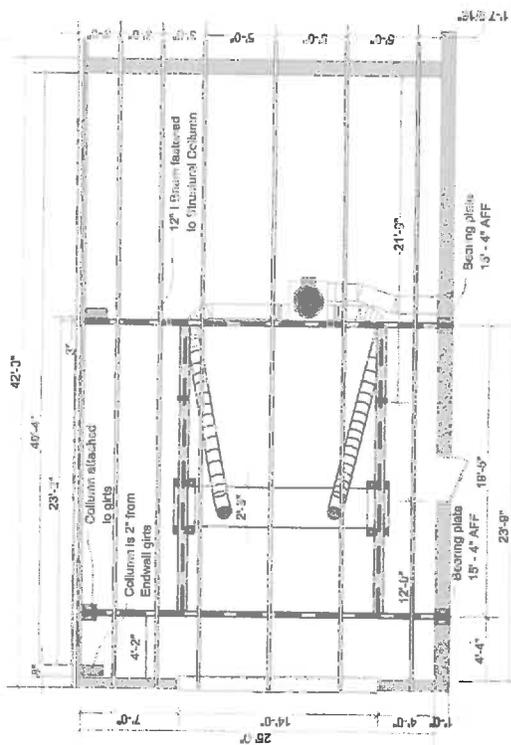
10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

N/A.

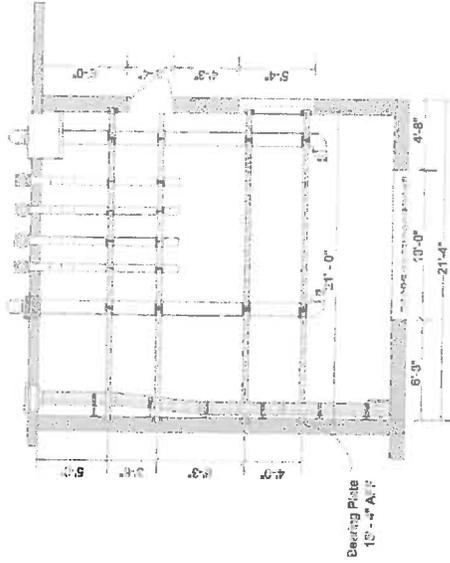
Attachment L

**Emission Unit Data Sheet General - #2
Cooling Tower**

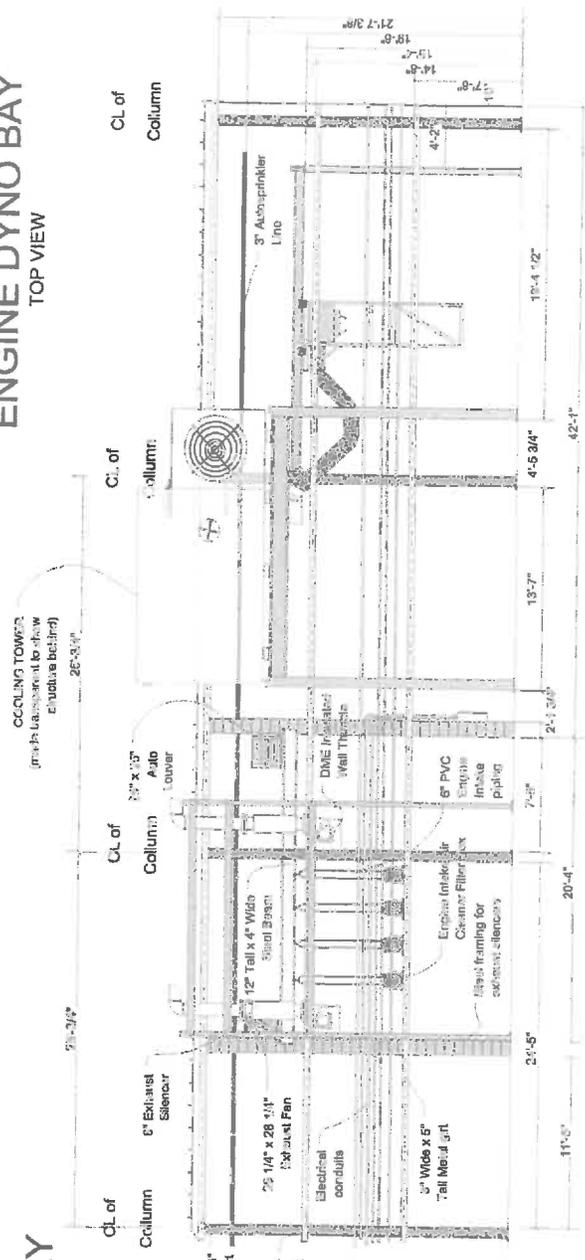
This unit is cools non-contact water used for heat-transfer cooling of the Engine Dyno. The emissions are based on naturally occurring solids in the cooling water. When the cooling water evaporates the solids therein can be released as emissions. A diagram of the cooling tower is provided in the attached schematic.



CHASSIS DYNO BAY
TOP VIEW



ENGINE DYNO BAY
TOP VIEW



EXISTING BUILDING - WEST WALL

ATTACHMENT M

Air Pollution Control Devices

Attachment M
Air Pollution Control Device Sheet
 (OTHER COLLECTORS)

Control Device ID No. (must match Emission Units Table): IC

Equipment Information

1. Manufacturer: AAF International Model No. 18 Gram Fiberglass Paint Arrestor (107X)	2. Control Device Name: Paint Booth Filters Type: Fabric Filters
3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.	
4. On a separate sheet(s) supply all data and calculations used in selecting or designing this collection device.	
5. Provide a scale diagram of the control device showing internal construction.	
6. Submit a schematic and diagram with dimensions and flow rates.	
7. Guaranteed minimum collection efficiency for each pollutant collected: Estimated 100% capture in booth and 99% control efficiency of PM/PM10/PM2.5 of the filters.	
8. Attached efficiency curve and/or other efficiency information.	
9. Design inlet volume: 21,195 SCFM	10. Capacity:
11. Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any. N/A	
12. Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.	
13. Description of method of handling the collected material(s) for reuse or disposal. Filters are changed out periodically or as needed.	

Gas Stream Characteristics

14. Are halogenated organics present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Are particulates present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Are metals present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
15. Inlet Emission stream parameters:	Maximum	Typical	
Pressure (mmHg):	Unknown	Unknown	
Heat Content (BTU/scf):	N/A	N/A	
Oxygen Content (%):	21	21	
Moisture Content (%):	N/A	N/A	
Relative Humidity (%):	Ambient	Ambient	

16. Type of pollutant(s) controlled: <input type="checkbox"/> SO _x <input type="checkbox"/> Odor <input checked="" type="checkbox"/> Particulate (type): <input type="checkbox"/> Other				
17. Inlet gas velocity: 50 est. ft/sec	18. Pollutant specific gravity: Unknown			
19. Gas flow into the collector: 21,195 ACF @ 70 °F and Unknown PSIA	20. Gas stream temperature: Inlet: 70 °F Outlet: 70 °F			
21. Gas flow rate: Design Maximum: 21,195 ACFM Average Expected: 21,195 ACFM	22. Particulate Grain Loading in grains/scf: Inlet: Varies Outlet: 0.01			
23. Emission rate of each pollutant (specify) into and out of collector:				
Pollutant	IN Pollutant lb/hr grains/acf	Emission Capture Efficiency %	OUT Pollutant lb/hr grains/acf	Control Efficiency %
A PM/PM10/PM2.5	5.54 -	100	0.06 0.01	99+
B				
C				
D				
E				
24. Dimensions of stack: Height 25 est. ft. Diameter 3 ft.				
25. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 130 percent of design rating of collector.				

Particulate Distribution

26. Complete the table:	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
Particulate Size Range (microns)	Weight % for Size Range	Weight % for Size Range
0 – 2	Unknown	Unknown
2 – 4	Unknown	Unknown
4 – 6	Unknown	Unknown
6 – 8	Unknown	Unknown
8 – 10	Unknown	Unknown
10 – 12	Unknown	Unknown
12 – 16	Unknown	Unknown
16 – 20	Unknown	Unknown
20 – 30	Unknown	Unknown
30 – 40	Unknown	Unknown
40 – 50	Unknown	Unknown
50 – 60	Unknown	Unknown
60 – 70	Unknown	Unknown
70 – 80	Unknown	Unknown
80 – 90	Unknown	Unknown
90 – 100	Unknown	Unknown
>100	Unknown	Unknown

27. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): N/A

28. Describe the collection material disposal system: Material is collected inside the equipment.

29. Have you included **Other Collectores Control Device** in the Emissions Points Data Summary Sheet?

30. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING: N/A

RECORDKEEPING: N/A

REPORTING: N/A

TESTING: N/A

MONITORING: Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

TESTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

31. Manufacturer's Guaranteed Control Efficiency for each air pollutant. N/A

32. Manufacturer's Guaranteed Control Efficiency for each air pollutant. N/A

33. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty. N/A

Viskon-Aire*

Air Filter Products

PAINT ARRESTANCE FILTER TEST REPORT Spray Removal Efficiency & Paint Holding Capacity BASED ON 40 CFR PART 63 (HHHHH) NATIONAL EMISSION STANDARD

Tested for: Viskon-Aire Corp.
Filter Mfr.: AAF International
Filter Name: 18 Gram Fiberglass Paint Arrestor (107X)
Test No. 13-1100
Report Date: August 9, 2013

Test Information

FILTER DESCRIPTION:

18gsf PA Media-Blue Tint on ALS (20" x 20" x 2.5")

PAINT DESCRIPTION:

S.W. G78 WC216

PAINT SPRAY METHOD:

Bir.k.s 95 Automatic Spray Gun

SPRAY FEED RATE:

136 gr./min.

AIR VELOCITY:

150 FPM

Test Results

INITIAL PRESSURE DROP of Clean Test Filter

0.04 in. water

FINAL PRESSURE DROP of Loaded Test Filter

0.15 in. water

PAINT HOLDING CAPACITY of TEST FILTER

1663.2 grams

PAINT RUN-OFF

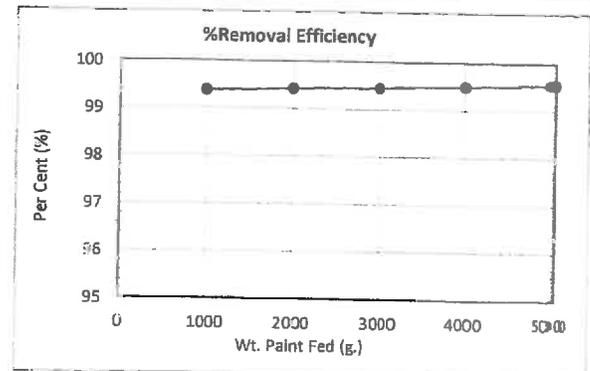
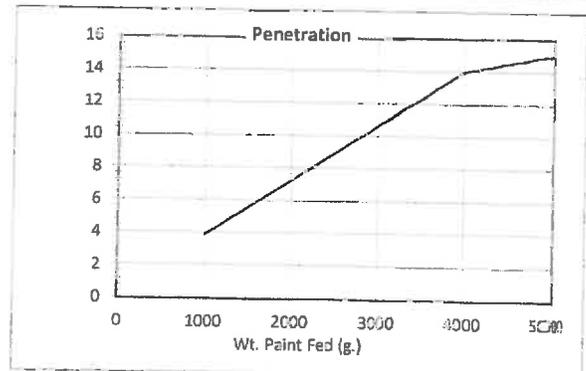
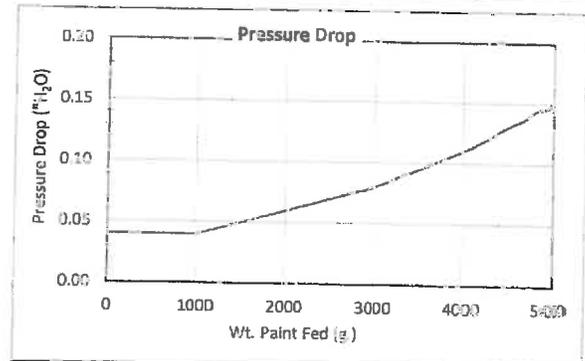
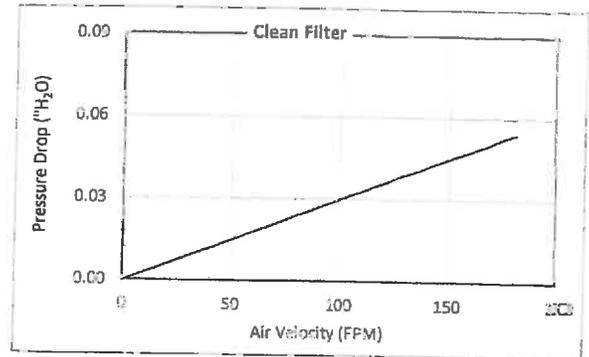
1587.6 grams

WEIGHT GAIN on FINAL FILTER

15 grams = penetration

AVERAGE REMOVAL EFFICIENCY of TEST FILTER

99.54 %



Test Engineer:

RAS

Attachment M
Air Pollution Control Device Sheet
(OTHER COLLECTORS)

Control Device ID No. (must match Emission Units Table): 2C

Equipment Information

1. Manufacturer: FSX Model No. SootSucker Dust Collector	2. Control Device Name: Filter Cleaner - Filter Type: Fabric Filter in device
3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.	
4. On a separate sheet(s) supply all data and calculations used in selecting or designing this collection device.	
5. Provide a scale diagram of the control device showing internal construction.	
6. Submit a schematic and diagram with dimensions and flow rates.	
7. Guaranteed minimum collection efficiency for each pollutant collected: 100% capture in booth and 99+% control efficiency of PM/PM10/PM2.5 of the scrubber.	
8. Attached efficiency curve and/or other efficiency information.	
9. Design inlet volume: 1,300 SCFM	10. Capacity: 1,300 scfm
11. Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any. N/A	
12. Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.	
13. Description of method of handling the collected material(s) for reuse or disposal. Waste material is collected in a small drum in the bottom of the equipment door.	

Gas Stream Characteristics

14. Are halogenated organics present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Are particulates present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Are metals present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
15. Inlet Emission stream parameters:	Maximum	Typical	
Pressure (mmHg):	Unknown	Unknown	
Heat Content (BTU/scf):	N/A	N/A	
Oxygen Content (%):	21	21	
Moisture Content (%):	N/A	N/A	
Relative Humidity (%):	Ambient	Ambient	

16. Type of pollutant(s) controlled: <input type="checkbox"/> SO _x <input type="checkbox"/> Odor <input checked="" type="checkbox"/> Particulate (type): <input type="checkbox"/> Other				
17. Inlet gas velocity: 350-400 ft/sec	18. Pollutant specific gravity: Unknown			
19. Gas flow into the collector: 1,300 ACF @ 70 °F and Unknown PSIA	20. Gas stream temperature: Inlet: 70 °F Outlet: 70 °F			
21. Gas flow rate: Design Maximum: 1,300 ACFM Average Expected: 1,300 ACFM	22. Particulate Grain Loading in grains/scf: Inlet: 0.01 Outlet: 0.01			
23. Emission rate of each pollutant (specify) into and out of collector:				
Pollutant	IN Pollutant	Emission Capture Efficiency %	OUT Pollutant	Control Efficiency %
	lb/hr	grains/acf	lb/hr	grains/acf
A PM/PM10/PM2.5	5.55	-	0.111	0.01
B				
C				
D				
E				
24. Dimensions of stack: Height N/A ft. Diameter N/A ft.				
25. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 130 percent of design rating of collector.				

Particulate Distribution

26. Complete the table:	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
Particulate Size Range (microns)	Weight % for Size Range	Weight % for Size Range
0 – 2	Unknown	Unknown
2 – 4	Unknown	Unknown
4 – 6	Unknown	Unknown
6 – 8	Unknown	Unknown
8 – 10	Unknown	Unknown
10 – 12	Unknown	Unknown
12 – 16	Unknown	Unknown
16 – 20	Unknown	Unknown
20 – 30	Unknown	Unknown
30 – 40	Unknown	Unknown
40 – 50	Unknown	Unknown
50 – 60	Unknown	Unknown
60 – 70	Unknown	Unknown
70 – 80	Unknown	Unknown
80 – 90	Unknown	Unknown
90 – 100	Unknown	Unknown
>100	Unknown	Unknown

27. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): N/A

28. Describe the collection material disposal system: Material is collected inside the equipment.

29. Have you included **Other Collectores Control Device** in the Emissions Points Data Summary Sheet?

30. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING: N/A

RECORDKEEPING: N/A

REPORTING: N/A

TESTING: N/A

MONITORING: Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

TESTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

31. Manufacturer's Guaranteed Control Efficiency for each air pollutant. N/A

32. Manufacturer's Guaranteed Control Efficiency for each air pollutant. N/A

33. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty. N/A

Attachment M

**Air Pollution Control Device Sheet - #2
Filter Cleaner Filter – FSX SootSucker Dust Collector**

This control device is part of the filter cleaner emissions unit. It is a simple fabric and cartridge filter that filters the exhaust air from the filter cleaner device. The attached manufacturer specifications were the only additional available data on the equipment.



DIESEL PARTICULATE FILTER CLEANING EQUIPMENT

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FSX SootSucker™ Dust Collector



Captures diesel particulate released from Diesel Particulate Filters (DPF) being cleaned using the FSX TrapBlaster™ Pneumatic Cleaner

Automatic online self-cleaning cycle pulses dust out of internal filters to drop into the bottom Quick-Release Bucket™ while operating.

Two stage filtration

Duct connection and air jumper hose included to connect to the TrapBlaster™ Pneumatic Cleaner.

Only for use with the [FSX TrapBlaster™ Pneumatic Cleaner](#).

Contact [Sales](#) to order your FSX SootSucker™ today!

FEATURES

SPECIFICATIONS

REQUIREMENTS

FEATURES

- Includes automatic online self-cleaning cycle pulses dust out of internal filters to drop into the bottom quick-release bucket while operating.
- Hand controlled offline cleaning cycle to clear filters after fan shuts down.
- Has enough volume to operate one FSX TrapBlaster™ Pneumatic DPF Cleaner.
- Two stage filtration
 - Stage 1 - Paper Cartridge Filter, 98.5% efficient at 1-3 micron
 - Stage 2 - HEPA Panel Filter, 99.7% efficient at 1 micron (24" x 24" x 12")
- Allows return of air indoors
- Duct connection and air jumper hose included to connect to the TrapBlaster™ Pneumatic Cleaner.

4/21/2016

FSX SootSucker™ - DPF Cleaner - FSX Equipment Inc.

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DIESEL PARTICULATE FILTER CLEANING EQUIPMENT

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SPECIFICATIONS

- CFM: 1300 w/ clean filter; 500 CFM w/ dirty filter
- Stage 1 filter cartridge is cleanable
- Fan is high efficiency non-overloading
- Minihelic pressure gauge for primary filter
- Inlet port: 8" ID on side; exhaust out the top
- Dimensions: 26"W x 26"D x 103"H (approx.)
- Weight: 434 lbs
- Electrical: 2 HP motor; 208/220/480 Volt, 3-ph
- Air Requirement: 15 CFM @ 90 PSI
- Uses standard 5 gallon plastic lubricant bucket found in most shops. Remove bucket, snap on the lid and dispose of in accordance with your local regulations. Replace with an empty bucket.

4/21/2016

FSX SootSucker™ - DPF Cleaner - FSX Equipment Inc.

FSX Equipment Inc. || 10404 Mountain Loop Highway Granite Falls, WA 98252-1617 || 360-691-2999

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ATTACHMENT N

Emissions Calculations

**Restricted Emissions Summary
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Restricted Potential-to-Emit Summary										
PROCESS	UNIT ID	PM	PM10	PM2.5	SOx	NOx	VOC	CO	Lead	CO2e
Engine Dynamometer	1S	3.842	3.842	3.842	3.594	54,660	4,462	11,775		2,033
Chassis Dynamometer	2S	2.891	2.891	2.891	2.694	40,734	3,304	8,778		1,511
Paint Booth	3S	0.243	0.243	0.243			22,813			
Filter Cleaner	4S	0.488	0.488	0.488						
Emergency Generator (Diesel)	6S	0.035	0.035	0.035	0.032	0.488	0.040	0.105		18
Cooling Towers	7S	0.769	0.769	0.769						
Total Parts Washers	5S						0.140			
Repair Shop Crystal Clean Parts Washer #1	5S						0.052			
Repair Shop Crystal Clean Parts Washer #2	5S						0.088			
MRC Rotary Parts Washer #1	5S						0.038			
MRC Rotary Parts Washer #2	5S						0.015			
MRC Parts Washer #1	5S						0.015			
MRC Parts Washer #2	5S						0.015			
MRC Parts Washer #3	5S						0.015			
MRC Parts Washer #4	5S						0.015			
TOTAL		8.27	8.27	8.27	6.32	95.88	30.76	20.66		3,562

Note 1: This Engine Dynamometer (1S) is the only unit that is restricted - the remaining are at potential. Hourly rates are not restricted

Potential-to-Emit Summary										
PROCESS	UNIT ID	PM	PM10	PM2.5	SOx	NOx	VOC	CO	Lead	CO2e
Engine Dynamometer	1S	5.500	5.500	5.500	5.125	77,500	6,285	16,700		2,875
Chassis Dynamometer	2S	1.320	1.320	1.320	1.230	18,600	1,508	4,008		690
Paint Booth	3S	0.065	0.065	0.065			5,208			
Filter Cleaner	4S	0.111	0.111	0.111						
Emergency Generator (Diesel)	6S	0.139	0.139	0.139	0.129	1,954	0.158	0.421		72
Cooling Towers	7S	0.176	0.176	0.176						
Total Parts Washers	5S						0.032			
Repair Shop Crystal Clean Parts Washer #1	5S						0.007			
Repair Shop Crystal Clean Parts Washer #2	5S						0.007			
MRC Rotary Parts Washer #1	5S						0.003			
MRC Rotary Parts Washer #2	5S						0.003			
MRC Parts Washer #1	5S						0.003			
MRC Parts Washer #2	5S						0.003			
MRC Parts Washer #3	5S						0.003			
MRC Parts Washer #4	5S						0.003			
TOTAL		7.30	7.30	7.30	6.48	98.05	13.19	21.13		3,637

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Designation
Engine Dynamometer (RESTRICTED)
1S
Process Description:
Engine Dynamometer
Control Device:

Emergency Generator - Diesel Combustion
PSD Regulated and HAP Emissions Estimates

	<u>Inputs</u>	
	2,500.0	= Rating of Generator (hp) (power output)
	7000	= Brake Specific Fuel Consumption Conversion of Btu/hp-hr
	17.50	= Fuel Input (MMBtu/hr)
Note 4	6,257	= Potential Operation (hours/year)
Note 5	190,000	= Annual Fuel Usage (gallons/year)
	24,789	= Annual Fuel Input (MMBtu/year)

POLLUTANT	CAS #	Note 1		Maximum Emissions	
		Emission Factor (lb/hp-hr)	Emission Factor (lb/MMBtu)	(lbs/hr)	(tpy)
PM/PM10/PM2.5	n/a	0.0022	0.3100	5.500	3.84
NOx	n/a	0.0310	4.4100	77.500	54.66
CO	n/a	0.0067	0.9500	16.700	11.77
Lead	n/a				
SO2	n/a	0.0021	0.2900	5.125	3.59
VOC	n/a	0.0025	0.3600	6.285	4.46
CO ₂ e	n/a	1.15	164.00	2875	2033
Benzene	71-43-2		9.33E-04	1.63E-02	1.16E-02
Toluene	108-88-3		4.09E-04	7.16E-03	5.07E-03
Xylenes	1330-20-7		2.85E-04	4.99E-03	3.53E-03
Note 3 Propylene			2.58E-03	4.52E-02	3.20E-02
Note 2 1,3-Butadiene	106-99-0		3.91E-05	6.84E-04	4.85E-04
Formaldehyde	50-00-0		1.18E-03	2.07E-02	1.46E-02
Acetaldehyde	75-07-0		7.67E-04	1.34E-02	9.51E-03
Note 2 Acrolein	107-02-8		9.25E-05	1.62E-03	1.15E-03
Polycyclic aromatic hydrocarbons (PAH)					
Naphthalene	91-20-3		8.48E-05	1.48E-03	1.05E-03
Note 2 POM/Acenaphthylene	203-96-8		5.06E-06	8.86E-05	6.27E-05
Note 2 POM/Acenaphthene	83-32-9		1.42E-06	2.49E-05	1.76E-05
POM/Fluorene	86-73-7		2.92E-05	5.11E-04	3.62E-04
POM/Phenanthrene	85-01-8		2.94E-05	5.15E-04	3.64E-04
POM/Anthracene	120-12-7		1.87E-06	3.27E-05	2.32E-05
POM/Fluoranthene	206-44-0		7.61E-06	1.33E-04	9.43E-05
POM/Pyrene	129-00-0		4.78E-06	8.37E-05	5.92E-05
POM/Benz(a)anthracene	56-55-3		1.68E-06	2.94E-05	2.08E-05
POM/Chrysene	218-01-9		3.53E-07	6.18E-06	4.38E-06
Note 2 POM/Benzo(b)fluoranthene	205-99-2		9.91E-08	1.73E-06	1.23E-06
Note 2 POM/Benzo(k)fluoranthene	207-08-9		1.55E-07	2.71E-06	1.92E-06
Note 2 POM/Benzo(a)pyrene	50-32-8		1.88E-07	3.29E-06	2.33E-06
Note 2 POM/Indeno(1,2,3-cd)pyrene	193-39-5		3.75E-07	6.56E-06	4.65E-06
Note 2 POM/Dibenzo(a,h)anthracene	53-70-3		5.83E-07	1.02E-05	7.23E-06
Note 2 POM/Benzo(g,h,i)perylene	191-24-2		4.89E-07	8.56E-06	6.06E-06
Total PAHs			1.68E-04	2.94E-03	2.08E-03
Total POMs			8.33E-05	1.46E-03	1.03E-03
Total HAPs				6.78E-02	4.80E-02

- Note 1: AP-42 (10/96), Section 3.3
 Note 2: For conservatism, where emission factors were < than a specific value the specific value was used.
 Note 3: Not a Hazardous Air Pollutant
 Note 4: Each test has 1 hour of setup time for every 2.5 hours of run time.
 Note 5: Requested enforceable limit to avoid Title V emission thresholds

Max. Hourly Emission = Max. Hourly Fuel Input x Pollutant E.F.
 Max. Yearly Emission = Max. Hourly Emission Rate (lb/hr) x (Max. Hours of Operation)

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Designation
Chassis Dynamometer
2S

Process Description:
Chassis Dynamometer
Control Device:

Emergency Generator - Diesel Combustion
PSD Regulated and HAP Emissions Estimates

	Inputs	
	600.0	= Rating of Generator (hp) (power output)
	7000	= Brake Specific Fuel Consumption Conversion of Btu/hp-hr
	4.20	= Fuel Input (MMBtu/hr)
Note 4	4,380	= Potential Operation (hours/year)

POLLUTANT	CAS #	Note 1	Note 1	Maximum Emissions	
		Emission Factor (lb/hp-hr)	Emission Factor (lb/MMBtu)	(lbs/hr)	(tpy)
PM/PM10/PM2.5	n/a	0.0022		1.320	2.891
NOx	n/a	0.0310		18.600	40.734
CO	n/a	0.0067		4.008	8.778
Lead	n/a				
SO2	n/a	0.0021		1.230	2.694
VOC	n/a	0.0025		1.508	3.304
CO _{2e}	n/a	1.15		690	1511.100
Benzene	71-43-2		9.33E-04	3.92E-03	8.58E-03
Toluene	108-88-3		4.09E-04	1.72E-03	3.76E-03
Xylenes	1330-20-7		2.85E-04	1.20E-03	2.62E-03
Note 3 Propylene			2.58E-03	1.08E-02	2.37E-02
Note 2 1,3-Butadiene	106-99-0		3.91E-05	1.64E-04	3.60E-04
Formaldehyde	50-00-0		1.18E-03	4.96E-03	1.09E-02
Acetaldehyde	75-07-0		7.67E-04	3.22E-03	7.05E-03
Note 2 Acrolein	107-02-8		9.25E-05	3.89E-04	8.51E-04
Polycyclic aromatic hydrocarbons (PAH)					
Naphthalene	91-20-3		8.48E-05	3.56E-04	7.80E-04
Note 2 POM/Acenaphthylene	203-96-8		5.06E-06	2.13E-05	4.65E-05
Note 2 POM/Acenaphthene	83-32-9		1.42E-06	5.96E-06	1.31E-05
POM/Fluorene	86-73-7		2.92E-05	1.23E-04	2.69E-04
POM/Phenanthrene	85-01-8		2.94E-05	1.23E-04	2.70E-04
POM/Anthracene	120-12-7		1.87E-06	7.85E-06	1.72E-05
POM/Fluoranthene	206-44-0		7.61E-06	3.20E-05	7.00E-05
POM/Pyrene	129-00-0		4.78E-06	2.01E-05	4.40E-05
POM/Benz(a)anthracene	56-55-3		1.68E-06	7.06E-06	1.55E-05
POM/Chrysene	218-01-9		3.53E-07	1.48E-06	3.25E-06
Note 2 POM/Benzo(b)fluoranthene	205-99-2		9.91E-08	4.16E-07	9.12E-07
Note 2 POM/Benzo(k)fluoranthene	207-08-9		1.55E-07	6.51E-07	1.43E-06
Note 2 POM/Benzo(a)pyrene	50-32-8		1.88E-07	7.90E-07	1.73E-06
Note 2 POM/Indeno(1,2,3-cd)pyrene	193-39-5		3.75E-07	1.58E-06	3.45E-06
Note 2 POM/Dibenzo(a,h)anthracene	53-70-3		5.83E-07	2.45E-06	5.36E-06
Note 2 POM/Benzo(g,h,i)perylene	191-24-2		4.89E-07	2.05E-06	4.50E-06
Total PAHs			1.68E-04	7.06E-04	1.55E-03
Total POMs			8.33E-05	3.50E-04	7.66E-04
Total HAPs				1.63E-02	3.56E-02

Note 1: AP-42 (10/96), Section 3.3

Note 2: For conservatism, where emission factors were < than a specific value the specific value was used

Note 3: Not a Hazardous Air Pollutant

Note 4: Each test has 30 minutes of setup time for every 30 minutes of run time.

Max. Hourly Emission = Max. Hourly Fuel Input x Pollutant E.F.

Max. Yearly Emission = Max. Hourly Emission Rate (lb/hr) x (Max. Hours of Operation)

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Maximum Capacity
Tons/Year

Flow Diagram Designation
Filter Cleaner
4S

Maximum Capacity
Tons/Hour

Process Description:
Cummins Corporation
Filter Cleaner
Control Device:
SCC Code:
Control Device Outlet:
Airflow:
Stack Gas Temperature:

Filter
0.01 gr/dscf Note 1
1,300 acfm Note 1
70 °F

Facility Process Name:		Criteria Pollutants								
Filter Cleaner										
Emission Factor Basis:		PM	PM10	PM2.5	SOx	NOx	VOC	CO	OC	Lead
Emission Factors:										
(source)										
Capture Efficiency		100.00	100.00	100.00						
Control Efficiency		98.00	98.00	98.00						
Building Capt. Eff										
Maximum Stack Emission Rate:										
Hourly (lb/hr)		0.111	0.111	0.111						
Annual (TPY)		0.488	0.488	0.488						
Maximum Fugitive Emission Rate:										
Hourly (lb/hr)										
Annual (TPY)										
Total Emission Rate:										
Hourly (lb/hr)		0.111	0.111	0.111						
Annual (TPY)		0.488	0.488	0.488						

Note 1: Based on manufacturer specification information

Note 2: Uncontrolled PM/PM10/PM2.5 emissions would be 5.55 lbs/hr and 24.4 tpy based on an assumed control efficiency of 98%

POTENTIAL OPERATING SCHEDULE
24.0 hrs/day
8,760 hrs/year

EXAMPLE CALCULATIONS:

PM/PM10 stack emissions(TPY)=(gr/dscf)x(acfm)x((460+70)/(460+Stack Gas Temp))x(60 min/hr)x(1 lb/7000 gr)x(hrs of operation/yr)x(1 ton/2000 lbs)

PM/PM10 fugitive emissions(TPY)=(annual throughput)x(%Resin)x(PM/PM10 emission factor)x(1-capture efficiency/100)x(1-building capture/100)x(1ton/2000 lbs)

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Designation
Emergency Generator (Diesel)
6S

Process Description:
Emergency Generator (Diesel)
Control Device:

Emergency Generator - Diesel Combustion
PSD Regulated and HAP Emissions Estimates

Inputs	
63.0	= Rating of Generator (hp) (power output)
7000	= Brake Specific Fuel Consumption Conversion of Btu/hp-hr
0.44	= Fuel Input (MMBtu/hr)
500	= Potential Operation (hours/year)

POLLUTANT	CAS #	Note 1	Note 1	Maximum Emissions	
		Emission Factor (lb/hp-hr)	Emission Factor (lb/MMBtu)	(lbs/hr)	(tpy)
PM/PM10/PM2.5	n/a	0.0022		0.139	0.035
NOx	n/a	0.0310		1.954	0.488
CO	n/a	0.0067		0.421	0.105
Lead	n/a				
SO2	n/a	0.0021		0.129	0.032
VOC	n/a	0.0025		0.158	0.040
CO ₂ e	n/a	1.15		72	18.121
Benzene	71-43-2		9.33E-04	4.12E-04	1.03E-04
Toluene	108-88-3		4.09E-04	1.80E-04	4.51E-05
Xylenes	1330-20-7		2.85E-04	1.26E-04	3.14E-05
Note 3 Propylene			2.58E-03	1.14E-03	2.85E-04
Note 2 1,3-Butadiene	106-99-0		3.91E-05	1.73E-05	4.31E-06
Formaldehyde	50-00-0		1.18E-03	5.21E-04	1.30E-04
Acetaldehyde	75-07-0		7.67E-04	3.38E-04	8.46E-05
Note 2 Acrolein	107-02-8		9.25E-05	4.08E-05	1.02E-05
Polycyclic aromatic hydrocarbons (PAH)					
Naphthalene	91-20-3		8.48E-05	3.74E-05	9.35E-06
Note 2 POM/Acenaphthylene	203-96-8		5.06E-06	2.23E-06	5.58E-07
Note 2 POM/Acenaphthene	83-32-9		1.42E-06	6.26E-07	1.57E-07
POM/Fluorene	86-73-7		2.92E-05	1.29E-05	3.22E-06
POM/Phenanthrene	85-01-8		2.94E-05	1.30E-05	3.24E-06
POM/Anthracene	120-12-7		1.87E-06	8.25E-07	2.06E-07
POM/Fluoranthene	206-44-0		7.61E-06	3.36E-06	8.39E-07
POM/Pyrene	129-00-0		4.78E-06	2.11E-06	5.27E-07
POM/Benz(a)anthracene	56-55-3		1.68E-06	7.41E-07	1.85E-07
POM/Chrysene	218-01-9		3.53E-07	1.56E-07	3.89E-08
Note 2 POM/Benzo(b)fluoranthene	205-99-2		9.91E-08	4.37E-08	1.09E-08
Note 2 POM/Benzo(k)fluoranthene	207-08-9		1.55E-07	6.84E-08	1.71E-08
Note 2 POM/Benzo(a)pyrene	50-32-8		1.88E-07	8.29E-08	2.07E-08
Note 2 POM/Indeno(1,2,3-cd)pyrene	193-39-5		3.75E-07	1.65E-07	4.14E-08
Note 2 POM/Dibenzo(a,h)anthracene	53-70-3		5.83E-07	2.57E-07	6.43E-08
Note 2 POM/Benzo(g,h,i)perylene	191-24-2		4.89E-07	2.16E-07	5.39E-08
Total PAHs			1.68E-04	7.41E-05	1.85E-05
Total POMs			8.33E-05	3.67E-05	9.18E-06
Total HAPs				1.71E-03	4.27E-04

Note 1: AP-42 (10/96), Section 3.3

Note 2: For conservatism, where emission factors were < than a specific value the specific value was used.

Note 3: Not a Hazardous Air Pollutant

Max. Hourly Emission = Max. Hourly Fuel Input x Pollutant E.F.

Max. Yearly Emission = Max.Hourly Emission Rate (lb/hr) x (Max. Hours of Operation)

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Maximum Capacity
50,942.450 Gallons/Year

Flow Diagram Designation
Cooling Towers
7S

Maximum Capacity
9,240.0 Gallons/Hour

Process Description:
Cummins Corporation
Cooling Towers
Control Device:
SCC Code:
Control Device Outlet:
Airflow:
Stack Gas Temperature:

gr/dscf
acfm
°F

Facility Process Name:		Criteria Pollutants								
Cooling Towers		PM	PM10	PM2.5	SOx	NOx	VOC	CO	OC	Lead
Emission Factor Basis:		PM	PM10	PM2.5	SOx	NOx	VOC	CO	OC	Lead
Emission Factors:	lb/1000 gal	0.01900	0.01900	0.01900						
	(source)	Note 1	Note 1	Note 1						
	Capture Efficiency									
	Control Efficiency									
	Building Capt. Eff									
Maximum Stack Emission Rate:										
	Hourly (lb/hr)									
	Annual (TPY)									
Maximum Fugitive Emission Rate:										
	Hourly (lb/hr)	0.176	0.176	0.176						
	Annual (TPY)	0.7690	0.7690	0.7690						
Total Emission Rate:										
	Hourly (lb/hr)	0.176	0.176	0.176						
	Annual (TPY)	0.7690	0.7690	0.7690						

Note 1: AP-42 Ch.13.4-3, Table 13.4-1 Induced draft.
Note 2: Assumed PM and PM2.5 equal to PM10.
Note 3: Estimated 154 gpm flowrate based on 7 lbs and 3 in piping

POTENTIAL OPERATING SCHEDULE
24.0 hrs/day
8,760 hrs/year

EXAMPLE CALCULATIONS:
 $PM/PM10 \text{ stack emissions}(TPY) = (\text{annual throughput}) \times (\text{PM}/PM10 \text{ emission factor}) \times (\text{Capture efficiency}) \times (1 - \text{Control efficiency}) \times (1 \text{ ton}/2000 \text{ lbs})$
 $PM/PM10 \text{ fugitive emissions}(TPY) = (\text{annual throughput}) \times (\% \text{Resin}) \times (\text{PM}/PM10 \text{ emission factor}) \times (1 - \text{capture efficiency}/100) \times (1 - \text{building capture}/100) \times (1 \text{ ton}/2000 \text{ lbs})$

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Designation
Repair Shop Crystal Clean Parts Washer #1
5S
Process Description:
Cummins Corporation
Repair Shop Crystal Clean Parts Washer #1
Control Device:
SCC Code:
Control Device Outlet:
Airflow:
Stack Gas Temperature:

gridscf
acfm
°F

Description	Average Temp	Wind Speed	Viscosity of mixture	Total Pressure	Chemical Formula	Molecular Weight	Cont. (weight)	Cont. (molar)	Atomic Diffusion Volume	Diffusion Coeff	Vapor Pressure	Partial Pressure	Emission Factor
Nomenclature	T	V	μ	P		MW	Cw	Cm	v	D_y	Pv	Pp	EF
Units	K	mph	lb/ft-hr	atm		--	%	%	--	ft ² /hr	in Hg	in Hg	lb/hr-ft ²
Carbon					C	12.01115			16.5				
Hydrogen					H	1.0079			1.98				
Oxygen					O	15.9994			5.48				
Nitrogen					N	14.0067			5.69				
Sodium					Na	22.9898							
Sulfur					S	32.065			17				
Component Molar Fraction of Liquid													
1,2,4 - Trimethylbenzene					C ₉ H ₁₂	120.195	2.50%	3.51%	172.26		0.039370	0.001380	1.21E-04
Petroleum Hydrocarbon Naphtha					C ₁₂ H ₂₆	170.339	97.50%	96.49%	249.48		0.039370	0.037990	1.20E-02
Water					H ₂ O	18.015		0.0059	2.21		0.039370		
Total													1.22E-02
Liquid	284.26			1		168.581			246.772	0.201234	0.039370		0.012416
Air	293.15		0.045		78% N ₂ , 21% O ₂	28.850			20.1				
Parts Wash Surface Area:	6												
Evaporative Emissions	lb/hr	TPY											
1,2,4 - Trimethylbenzene	0.001	0.003											
Petroleum Hydrocarbon Naphtha	0.072	0.316											
Uncontrolled VOC Emissions	0.07	0.32											
% of time parts washer lid is closed	90%												
Controlled VOC Emissions	lb/hr	TPY											
	0.007	0.03											

Note 1: Crystic Clean 10c+ Mineral Spills
Note 2: Molecular formulas vary. Given formulas are typical example of each compound.

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Designation
Repair Shop Crystal Clean Parts Washer #2
55

Process Description:
Cummins Corporation
Repair Shop Crystal Clean Parts Washer #2

Control Device:
SCC Code:

Control Device Outlet:

Airflow:
Stack Gas Temperature:

gr/dscf
acfm
°F

Description	Average Temp		Wind Speed V	Viscosity of air/vapor mixture μ	Total Pressure P	Chemical Formula	Molecular Weight MW	Conc (weight) Cw %	Conc (molar) Cm %	Atomic Diffusion Volume u	Diffusion Coeff Dv ft ² /hr	Vapor Pressure Pv in Hg	Partial Pressure Pp in Hg	Emission Factor EF lb/hr-ft ²
	T K	K												
Nomenclature														
Units														
Carbon						C	12.01115			16.5				
Hydrogen						H	1.0079			1.98				
Oxygen						O	15.9994			5.48				
Nitrogen						N	14.0067			5.68				
Sodium						Na	22.9898							
Sulfur						S	32.065			17				
Component (Percentage of Mixture)														
1,2,4 - Trimenthylbenzene						C ₉ H ₁₂	120.195	2.50%	3.51%	172.26		0.039370	0.001380	1.21E-04
Petroleum Hydrocarbon Naphtha						C ₁₀ H ₁₈	170.339	97.50%	96.49%	249.48		0.039370	0.037980	1.20E-02
Total														
Liquid	294.26				1		168.681			246.772	0.201234	0.039370		1.22E-02
Air	293.15			0.045		76% N ₂ /21% O ₂	28.850			20.1				0.012416
Parts Wash Surface Area:	B		ft ²											
Evaporative Emissions	lb/hr	TPY												
1,2,4 - Trimenthylbenzene	0.001	0.003												
Petroleum Hydrocarbon Naphtha	0.072	0.316												
Uncontrolled VOC Emissions	0.07	0.32												
% of time parts washer lid is closed	90%													
Controlled VOC Emissions	lb/hr	TPY												
	0.007	0.03												

Note 1: Crystall Clean 1:6+ Mineral Sprays
Note 2: Molecular formulas vary. Given formulas are typical example of such compound

Emissions Calculations NSR Permit Application Cummins Crosspoint, LLC Cross Lanes, WV

Flow Diagram Description
MRC Rotary Parts Washer #2
as
Process Description:
Cummins Corporation
MRC Rotary Parts Washer #2
Control Device:
SCC Code:
Control Device Outlet
Airflow:
Stack Gas Temperature:

0.0000
0.0000
0.0000

Description	Average Temp K	Wind Speed mph	Molecular Weight	Total Pressure	Chemical Formula	Molecular Weight	Gravimetric		Gravimetric	Gravimetric	Gravimetric	Diffusion Coeff	Vapor Pressure	Partial Pressure	Emission Factor
							Concentration	Concentration							
Noncondensable															
Water															
Carbon			12.01115		C										
Hydrogen			1.0079		H										
Oxygen			15.9994		O										
Nitrogen			14.0067		N										
Sulfur			32.065		S										
Sulfur			32.065		S										
Longchain Alcohol Alkoxylated			121.157		C ₁₂ H ₂₅ O ₂		10.00%	12.25%			121.680		0.00870	0.004826	6.17E-04
Ethanolamine			30.076		C ₂ H ₇ NO		10.00%	24.72%			36.050		0.018889	0.004672	2.24E-04
Dimethylacetamide oxide			228.407		C ₄ H ₉ N ₂ O		10.00%	6.47%			303.550		2.44E-08	1.58E-10	6.25E-13
Synthetic Alcohol Ethoxylated			378.551		C ₁₂ H ₂₅ O ₂		10.00%	3.92%			446.040		0.009528	0.000374	1.10E-04
Propylene Glycol			76.095		C ₃ H ₈ O ₂		10.00%	18.52%			76.300		0.005118	0.000988	4.88E-05
Petroleum distillates, hydrocracked light			210.404		C ₈ H ₁₈		10.00%	7.01%			306.900		0.203183	0.014342	4.95E-03
Quaternary Coco Alkylamine Ethoxylate			168.323		C ₁₂ H ₂₅ O ₂		10.00%	8.62%			245.520		0.038370	0.003474	6.30E-04
Tripropylene Glycol			306.283		C ₁₂ H ₂₅ O ₄		10.00%	7.20%			230.480		0.010827	0.010060	5.08E-06
(2-methoxymethyl)ethylpropyl			148.203		C ₁₂ H ₂₅ O ₂		10.00%	10.02%			163.620		0.011811	0.001184	1.39E-01
Total								0.0087							
TPY	394.26		133.666	1							177.504	0.241440	0.028931		0.006877
Air	293.15		28.823								20.1				
Parts Wash Surface Area	3.142	ft ²													
Evaporative Emissions		lb/hr		TPY											
Longchain Alcohol Alkoxylated	1.47E-03		18.49E-03												
Ethanolamine	7.04E-04		3.09E-03												
Dimethylacetamide oxide	3.98E-12		1.61E-12												
Synthetic Alcohol Ethoxylated	2.45E-04		1.91E-03												
Propylene Glycol	1.66E-02		6.34E-02												
Petroleum distillates, hydrocracked light	1.94E-03		8.67E-02												
Quaternary Coco Alkylamine Ethoxylate	1.80E-05		7.00E-05												
(2-methoxymethyl)ethylpropyl	4.38E-04		1.91E-03												
Uncontrolled VOC Emissions	0.02		0.08												
% of time parts washer kit is closed	50%														
Controlled VOC Emissions	0.002	lb/hr	TPY	0.01											

File: \\MRC\Chem\NSR\Stack
New-2 Molecular Weight very Clean (no other) (0.0000) (0.0000) (0.0000)

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Description:
MRC Parts Washer #1
58
Process Description:
Cummins Corporation
MRC Parts Washer #1
Control Device:
SCC Code:
Control Device Outlet:
Airflow:
Stack Gas Temperature:

grf/scd
acfm
°F

Description	Area No		Wind Speed	Viscosity of mixture	Total Pressure	Chemical Formula	Molecular Weight	Comp	Conc	Atmospheric Diffusion Coeff	Vapor Pressure	Partial Pressure	Emission Factor
	T	K											
Nomenclature	Units	Units	mph	lb/ft-hr	atm		MW	%	ppm	ft ² /hr	in Hg	in Hg	lb/hr-ft ³
Carbon						C	12.01115						
Hydrogen						H	1.00794						
Oxygen						O	15.9994						
Nitrogen						N	14.0067						
Sulfur						S	32.066						
Sodium						Na	22.9898						
Sulfur						S	32.066						
Evaporative Emissions													
Longchain Alcohol Alkoxylated						C ₁₂ H ₂₄ O ₂	121.157	10.00%	12.26%		0.039370	0.004626	6.17E-04
Ethanolamine						C ₂ H ₇ NO	60.076	10.00%	24.72%		0.016969	0.004672	2.24E-04
Dimethylacetamide oxide						C ₄ H ₉ NO	229.407	10.00%	6.47%		2.44E-09	1.58E-10	6.25E-13
Synthetic Alcohol, Ethoxylated						C ₁₈ H ₃₆ O ₂	378.551	10.00%	3.92%		0.009528	0.000374	1.10E-04
Propylene Glycol						C ₃ H ₈ O ₂	76.095	10.00%	7.05%		0.005118	0.000889	4.39E-05
Petroleum distillates, hydrotreated light						C ₁₀ H ₁₈	210.404	10.00%	10.00%		0.203183	0.01342	4.95E-03
Quaternary Coco Alkylamine Ethoxylate						C ₂₀ H ₄₂	188.321	10.00%	8.82%		0.039370	0.003474	8.30E-04
Tripropylene Glycol						C ₉ H ₁₈ O ₄	206.283	10.00%	7.20%		0.000827	0.000630	5.08E-06
(2-methoxyethyl)ethylpropylacetate						C ₁₁ H ₂₂ O ₂	148.203	10.00%	10.02%		0.011811	0.001184	1.39E-04
Total									0.0867				6.72E-03
TPY													0.003977
TPY													0.003977
Air													0.003977
Parts Wash Surface Area:													
Evaporative Emissions	lb/hr	TPY											
Evaporative Emissions	3.70E-03	1.62E-02											
Evaporative Emissions	3.94E-03	1.89E-02											
Evaporative Emissions	8.56E-02	3.87E-01											
Evaporative Emissions	2.75E-04	1.20E-03											
Evaporative Emissions	2.97E-02	1.30E-01											
Evaporative Emissions	3.78E-03	1.66E-02											
Evaporative Emissions	3.05E-03	1.34E-02											
Evaporative Emissions	8.33E-04	3.65E-03											
Evaporative Emissions	0.03	0.15											
% of time parts washer lid is closed	0.7%												
Controlled VOC Emissions	lb/hr	TPY											
Controlled VOC Emissions	0.003	0.02											

Notes: 1. MRC's Crosspoint 58-60
2. MRC's Crosspoint 58-60

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Designation
MRC Part # Washer #2
Process Description:
Cummins Corporation
MRC Parts Washer #2
Control Device:
SCC Code:
Control Device Outlet:
Airflow:
Stack Gas Temperature:

grided
acim
1

Description	Average Temp	Wind Speed	Viscosity of vapor @temp	Total Pressure	Chemical Formula	Molecular Weight	Conc (weight)		Atmic Diffusion Coeff	Vapor Pressure	Partial Pressure	Emission Factor
							Cw	Ch				
Nomenclature	K	V mph	u lb/ft-hr	P atm		MMW	%	%	Dv ft/hr	Pv in.Hg	Pp in.Hg	EF lb/hr-ft ³
Carbon					C	12.01115						
Hydrogen					H	1.0079						
Oxygen					O	15.9994						
Nitrogen					N	14.0064						
Sulfur					S	32.065						
Sodium					Na	22.9898						
Sulfur					S	32.065						
Longchain Alcohol Alkoxylated					C ₁₂ H ₂₅ O ₁₁	121.157	10.00%	12.26%	124.680	0.009370	0.004626	6.17E-04
Ethanolamine					C ₂ H ₇ NO	89.076	10.00%	24.72%	65.080	0.018899	0.004972	2.24E-04
Dimethylacetamide oxide					C ₄ H ₉ NO	229.407	10.00%	6.47%	303.550	2.44E-08	1.58E-10	6.25E-13
Synthetic Alcohol Ethoxylated					C ₁₂ H ₂₅ O ₁₁	378.551	10.00%	3.92%	446.040	0.009528	0.000374	1.10E-04
Propylene Glycol					C ₃ H ₈ O ₂	76.095	10.00%	19.52%	76.300	0.005118	0.000299	4.58E-05
Petroleum distillates, hydrotreated light					C ₁₂ H ₂₂	210.404	10.00%	7.63%	306.900	0.203183	0.014342	4.85E-03
Quaternary Coco Alkylamine Ethoxylate					C ₁₈ H ₃₇ O ₄	168.323	10.00%	8.62%	245.520	0.009370	0.003474	6.30E-04
Tripropylene Glycol					C ₁₈ H ₃₈ O ₄	288.283	10.00%	7.27%	230.480	0.000827	0.000060	5.08E-06
(2-methoxyethyl)ethylpropylpropanol					C ₁₂ H ₂₅ O ₃	148.203	10.00%	10.02%	163.620	0.011811	0.001184	1.35E-04
Total								0.0067				6.72E-03
liquid	794.26					133.969			157.56%	0.251440	0.128931	0.006777
Air	233.15			1		28.850			20.1			
Parts Wash Surface Area:	6	ft ²										
Reactive Emissions	lb/hr	TPY										
Longchain Alcohol Alkoxylated	3.70E-03	1.52E-07										
Ethanolamine	3.25E-03	3.68E-01										
Dimethylacetamide oxide	8.59E-04	2.84E-01										
Synthetic Alcohol Ethoxylated	2.75E-04	1.20E-03										
Propylene Glycol	2.97E-02	1.30E-01										
Petroleum distillates, hydrotreated light	3.78E-03	1.68E-02										
Quaternary Coco Alkylamine Ethoxylate	3.05E-05	1.34E-04										
Tripropylene Glycol	8.33E-04	3.65E-03										
(2-methoxyethyl)ethylpropylpropanol	0.03	0.15										
Uncontrolled VOC Emissions												
% of time parts washer lid is closed		63%										
Controlled VOC Emissions	lb/hr	TPY										
	0.003	0.02										

Use of Metric Conversion Units
Note: Molecular weights vary when formulae are used instead of empirical

**Emissions Calculations
NSR Permit Application
Cummins Crosspoint, LLC
Cross Lanes, WV**

Flow Diagram Description:
MRC Parts Washer #3
#3
Process Description:
Cummins Corporation
MRC Parts Washer #3
Control Device:
SCC Code:
Control Device Outlet:
Airflow:
Stack Gas Temperature:

gpd/scd
scdm
°F

Description	Average Temp		Wind Speed	Viscosity	Total Pressure	Chemical Formula	Molecular Weight	Conc		Alc. In Volume	Dilution			Vapor Pressure			Emission Factor
	T	K						Wt %	Vol %		Dv	Pv	Pp	in Hg	in Hg	in Hg	
Noncondensable																	
Elemental																	
Carbon						C	12.01115			16.5							
Hydrogen						H	1.0079			1.98							
Oxygen						O	15.9994			5.48							
Nitrogen						N	14.0067			5.59							
Sulfur						S	32.0659										
Sodium						Na	22.9898										
Sulfur						S	32.0659			17							
Longchain Alcohol Alkoxylated						C ₁₂ H ₂₄ O ₂	124.157	10.00%	12.26%	124.980			0.009370	0.004826	6.17E-04		
Ethanolamine						C ₂ H ₇ NO	60.076	10.00%	24.72%	56.050			0.018859	0.004672	2.24E-04		
Dimethyldioctylamine oxide						C ₁₄ H ₃₁ NO	229.407	10.00%	6.47%	303.550			2.44E-09	1.58E-10	6.25E-13		
Synthetic Alcohol Ethoxylated						C ₁₂ H ₂₄ O ₂	378.551	10.00%	3.92%	446.340			3.009528	0.006374	1.10E-04		
Phenylene Glycol						C ₈ H ₈ O ₂	76.095	10.00%	19.53%	76.300			0.003116	0.000958	4.55E-05		
Petroleum distillates, hydrotreated light						C ₁₀ H ₁₈	210.404	10.00%	7.03%	302.900			0.203103	0.014342	4.95E-03		
Quaternary Coco Alkylamine Ethoxylate						C ₁₈ H ₃₈	188.323	10.00%	8.82%	248.520			0.009370	0.003474	6.30E-04		
Tripropylene Glycol						C ₁₀ H ₂₀ O ₄	206.263	10.00%	7.20%	230.480			0.000827	0.000060	5.08E-06		
(2-methoxyethyl)ethylpropylpropanol						C ₁₂ H ₂₄ O ₂	148.203	10.00%	10.02%	163.620			0.011811	0.001184	1.39E-04		
Total									0.0067								
Controlled VOC Emissions										157.504		0.351440		0.028851			0.009877
Uncontrolled VOC Emissions										20.1							
% of time parts washer lid is closed																	

Parts Wash Surface Area:	B	ft ²
Evaporative Emissions		
Nonhazardous Alkaline	3.70E-03	1.62E-02
Alcohol	3.70E-03	1.62E-02
Alkylamine	3.70E-03	1.62E-02
Alkylamine oxide	3.70E-03	1.62E-02
Synthetic Alcohol Ethoxylated	3.70E-03	1.62E-02
Propylene Glycol	3.70E-03	1.62E-02
Petroleum distillates, hydrotreated light	3.70E-03	1.62E-02
Quaternary Coco Alkylamine Ethoxylate	3.70E-03	1.62E-02
Tripropylene Glycol	3.70E-03	1.62E-02
(2-methoxyethyl)ethylpropylpropanol	3.70E-03	1.62E-02
Uncontrolled VOC Emissions	0.03	0.15
% of time parts washer lid is closed		
Controlled VOC Emissions	0.003	0.02

NSR 1. Major Constituent Emission
NSR 2. Minor Constituent Emission

Emissions Calculations NSR Permit Application Cummins Crosspoint, LLC Cross Lanes, WV

Emission Calculation
 MRC Parts Washer #4
 6S
 Process Description:
 Cummins Corporation
 MRC Parts Washer #4
 Control Device:
 SCC Code:
 Control Device Outlet
 Airflow:
 Stack Gas Temperature:

0.001
 acfm
 °F

Description	Average Temp	Wind Speed	Viscosity at 1000 psi	Total Pressure	Chemical Formula	Molecular Weight	Conc (weight)	Conc (molar)	Molar Diffusion Coeff	Vapor Pressure	Partial Pressure	Emission Factor
Carbon	K	V	lb/ft-hr	atm	C	12.01115	%	cm	ft ² /hr	Pv	Pp	EF
Hydrogen					H	1.0079						
Oxygen					O	15.9994						
Nitrogen					N	14.0067						
Sulfur					S	32.066						
Sodium					Na	22.9898						
Sulfur					S	32.066						
Long-chain Alcohol Alkoxylated					C ₁₂ H ₂₄ O ₂	192.157	10.00%	12.26%	127.880	0.008370	0.004828	6.17E-04
Ethanolamine					C ₂ H ₇ NO	60.076	10.00%	24.72%	56.059	0.018895	0.004672	2.24E-04
Dimethylolpropylamine oxide					C ₄ H ₁₁ NO	229.407	10.00%	5.47%	308.550	2.44E-06	1.58E-10	6.25E-13
Synthetic Alcohol Ethoxylates					C ₁₀ H ₂₁ O ₂	376.551	10.00%	3.82%	446.040	0.008528	0.000374	1.10E-04
Propylene Glycol					C ₃ H ₈ O ₂	76.095	10.00%	19.52%	76.300	0.005118	0.000899	4.58E-05
Petroleum distillates, hydrotreated light					C ₁₀ H ₁₈	210.404	10.00%	7.05%	306.900	0.203187	0.014322	4.95E-03
Quaternary Coco Alkylamine Ethoxylate					C ₂₀ H ₄₂ O ₄	168.323	10.00%	8.82%	245.520	0.008370	0.000374	6.30E-04
Tripropylene Glycol					C ₉ H ₁₈ O ₃	206.283	10.00%	7.20%	230.480	0.000827	0.000060	5.08E-06
(2-methoxyethyl)ethylpropyl					C ₁₁ H ₂₄ O ₂	148.203	10.00%	10.02%	163.620	0.011811	0.001184	1.39E-04
Total												
Controlled VOC Emissions												8.72E-03
Uncontrolled VOC Emissions												0.018877
% of time parts washer lid is closed												
Controlled VOC Emissions												

Parts Wash Surface Area	B	ft ²
Evaporative Emissions	lb/hr	TPY
Long-chain Alcohol Alkoxylated	3.70E-03	1.65E-02
Ethanolamine	1.44E-03	5.85E-03
Dimethylolpropylamine oxide	3.75E-04	1.61E-03
Synthetic Alcohol Ethoxylates	8.69E-04	3.91E-03
Propylene Glycol	2.74E-04	1.20E-03
Petroleum distillates, hydrotreated light	2.37E-02	1.05E-01
Quaternary Coco Alkylamine Ethoxylate	3.78E-03	1.65E-02
Tripropylene Glycol	3.05E-05	1.34E-04
(2-methoxyethyl)ethylpropyl	8.33E-04	3.65E-03
Uncontrolled VOC Emissions	0.03	0.15
% of time parts washer lid is closed	90%	
Controlled VOC Emissions	0.003	0.02

Note 1: NSR Control Station 0095
 Note 2: MRC Parts Washer #4

ATTACHMENT P

Affidavit of Publication

Notice is given that Cummins Crosspoint, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for an NSR Construction Permit for an Engine Repair and Rebuild Shop located on 602 New Goff Mountain Rd., Cross Lanes in Kanawha County, West Virginia. The latitude and longitude coordinates are: 38.396635, -81.787901.

The applicant estimates the potential to emit the following Regulated Air Pollutants will be: 8.27 tpy of PM/PM10/PM2.5, 6.32 tpy of SOx, 95.88 tpy of NOx, 30.76 tpy of VOC, 20.66 tpy of CO, and 14.4 tpy of Total HAPs.

Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours. Dated this the 25th day of May, 2016.

By: Cummins Crosspoint, LLC
John Peaper
HSE Manager
2601 Fortune Circle East Drive
Indianapolis, Indiana 46241

ATTACHMENT R

Authorization of LLC

AUTHORITY OF LIMITED LIABILITY COMPANY (LLC)

TO: The West Virginia Department of Environmental Protection, Division of Air Quality
DATE: May 25, 2016
ATTN: Director
LLC's Federal Employer I.D. Number 205012258

The undersigned hereby files with the West Virginia Department of Environmental Protection, Division of Air Quality, a permit application and hereby certifies that the said name is a trade name which we are using in the conduct of an unincorporated business.

Further, we have agreed or certified as follows:

- (1) The undersigned is a member and in that capacity may represent the interests of the LLC and may obligate and legally bind all current or future members and the LLC.
- (2) The LLC is authorized to do business in the State of West Virginia.
- (3) The name and business address of each member:

Member: Mike Sandfort
Address: 2601 Fortune Circle East Suite 300C, Indianapolis, IN 46241

Telephone No.: 317-240-1933

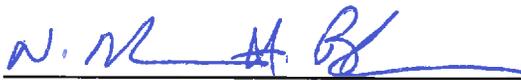
Member: Christine Pfeifler
Address: 2601 Fortune Circle East Suite 300C, Indianapolis, IN 46241

Telephone No.: 317-240-1945

Member: Merritt Becker
Address: 2601 Fortune Circle East Suite 300C, Indianapolis, IN 46241

Telephone No.: 317-484-2120

- (4) If any other persons become members of the undersigned or our relations as such be altered in any way or if the business should become incorporated, the undersigned will notify you promptly.


MEMBER OF LLC (Signature)

Merritt Becker
MEMBER OF LLC (Typed)

Address: 2601 Fortune Circle East Suite 300C
Indianapolis, IN 46241
Telephone No.: 317-243-7979

Cummins Crosspoint, LLC
LIMITED LIABILITY COMPANY'S NAME