MODIFICATION APPLICATION TO REGULATION 13 PERMIT R13-2340C

HOT MIX ASPHALT PLANT #14
PLEASANTS COUNTY, WEST VIRGINIA

Prepared for:

Kelly Paving, Inc.
3570 South River Road
PO Box 1585
Zanesville, Ohio 43702-1585

Prepared by:

Potesta & Associates, Inc.
7012 MacCorkle Avenue, S.E.
Charleston, West Virginia 25304
Phone: (304) 342-1400 Fax: (304) 343-9031
Email: potesta@potesta.com

Project No. 0101-15-0319

October 2015

POTESTA

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Attachments Not Applicable to this Application: Attachments H, M*, Q, R, and S.
* Information on the cyclone and baghouse included in Attachment L.

SECTION I - III

GENERAL APPLICANT INFORMATION

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):*
Kelly Paving, Inc.

2. Federal Employer ID No. ***(FEIN):***
311459264

3. Name of facility *(if different from above):*
HMA Plant #14

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
3570 South River Road
PO Box 1585
Zanesville, Ohio 43702-1585

5B. Facility's present physical address:
Route 2, Box 408-B
St. Marys, West Virginia 26170

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **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: Shelly and Sands, Inc.

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**
- ➪ If **YES,** please explain: Applicant owns 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.): Hot Mix Asphalt Plant

10. North American Industry Classification System **(NAICS)** code for the facility:
324121

11A. DAQ Plant ID No. (for existing facilities only):
073-00020

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-2340C

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.**

North on WV Route 2 from St. Marys, past Collin Anderson Center, through Raven Rock, site is between Route 2 and Ohio River near the mouth of Riggs Run.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
Same	Ben's Run	Pleasants
12.E. UTM Northing (KM): 4,365.991	12F. UTM Easting (KM): 488.850	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
The facility proposes to add conveyors and a RAP crusher.

14A. Provide the date of anticipated installation or change: NA ➪ If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: June 2014.	14B. Date of anticipated Start-Up if a permit is granted: NA

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? ☐ **YES** ☒ **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 *(if known)*. 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 *(if known)*. 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:

☐ Bulk Liquid Transfer Operations	☒ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☒ Hot Mix Asphalt Plant	☒ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	☐ Storage Tanks
☐ General Emission Unit, specify		

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

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

☐ Absorption Systems	☒ Baghouse **Included in HMA EUDS**	☐ Flare
☐ Adsorption Systems	☐ Condenser	☐ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☐ Other Collectors, specify

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:

35.

☐ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ 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 _____ DATE: 10-29-15

(Please use blue ink) *(Please use blue ink)*

35B. Printed name of signee: Wade Hamm		35C. Title: Executive Vice President
35D. E-mail:	36E. Phone:	36F. FAX:
36A. Printed name of contact person (if different from above): Anthony Ruggiero, III		36B. Title: Environmental Permitting & Compliance
36C. E-mail: tonyr@shellyandsands.com	36D. Phone: (740) 453-0127	36E. FAX: (740) 453-6095

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

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

BUSINESS CERTIFICATE

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
KELLY PAVING INC
RR 2 BOX 408B
SAINT MARYS, WV 26170-9779

BUSINESS REGISTRATION ACCOUNT NUMBER: **1036-9565**

This certificate is issued on: **06/11/2010**

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.

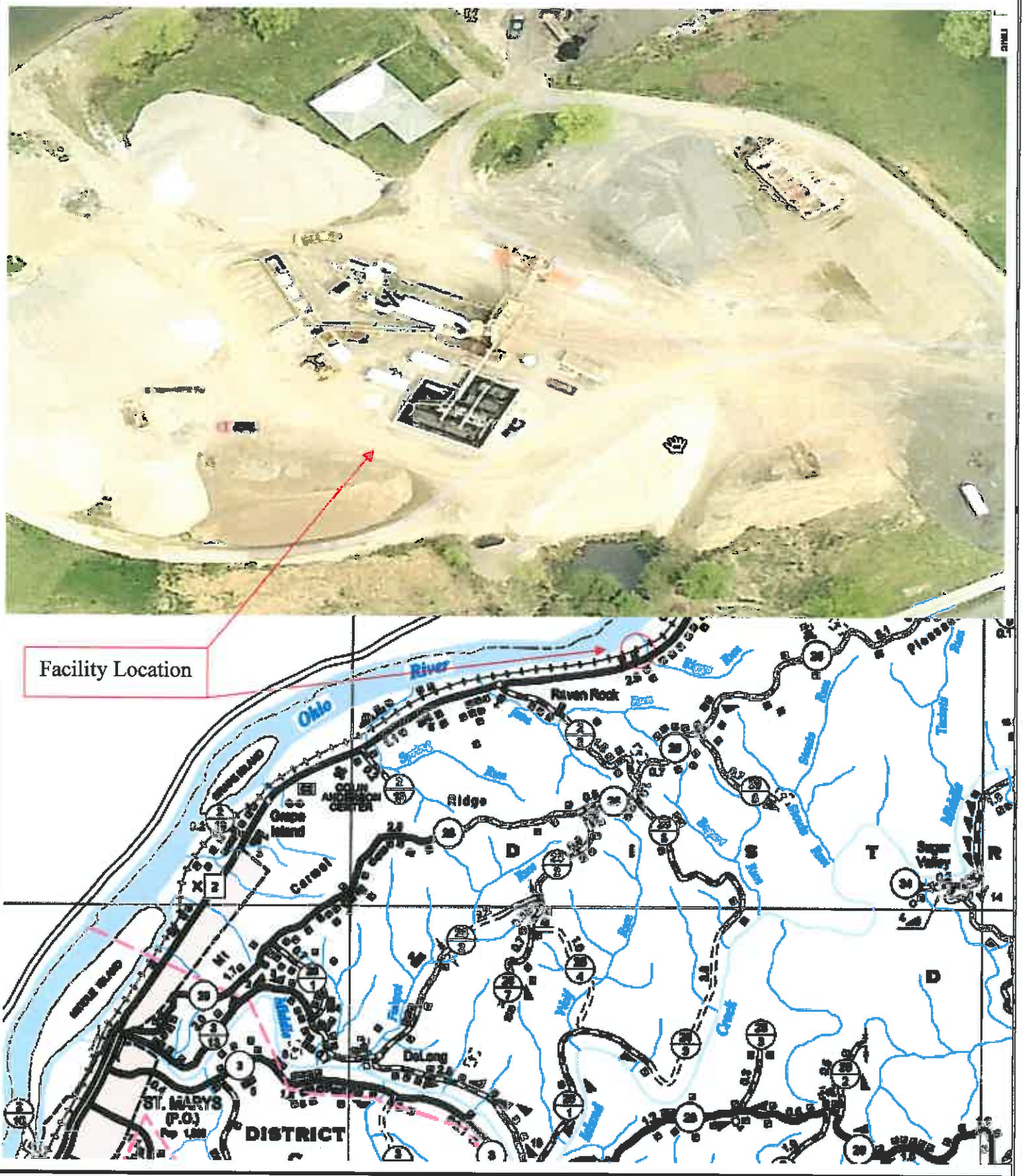
Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

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.

atL006 v.1
L2022005504

ATTACHMENT B

AREA MAP



POTESTA
Engineers and Environmental Consultants

7012 MacCorkle Avenue, S.E
Charleston, West Virginia 25304
Phone: (304) 342-1400
Fax: (304) 343-9031

Area Map
HMA Plant #14
Kelly Paving, Inc.
Pleasants County, West Virginia

ATTACHMENT C

INSTALLATION AND START UP SCHEDULE

ATTACHMENT C

SCHEDULE OF INSTALLATION

The conveyors and RAP crusher were constructed in June 2014. They are currently operating.

ATTACHMENT D

REGULATORY DISCUSSION

ATTACHMENT D

REGULATORY DISCUSSION

The facility is subject to the following regulations:

A. 45CSR3 – "To Prevent and Control Particulate Air Pollution from the Operation of Hot Mix Asphalt Plants" requires the facility to control emissions and obtain a permit.

B. 45CSR7 – "To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations" requires the facility to maintain dust control systems.

C. 45CSR13 – "Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation" requires facilities that meet definition to obtain a permit prior to construction.

D. 45CSR16 – "Standards of Performance for Stationary Sources," which incorporates by reference 40CFR60 Subpart I, "Standards of Performance for Hot Mix Asphalt Facilities". The standards require control of emissions.

E. 45CSR22 – "Air Quality Management Fee Program" requires the facility to pay a minimum operating fee.

F. 45CSR30 – "Requirements for Operating Permits" (Deferred Source). The facility potential to emit (PTE) does not exceed 100 tons per year (tpy) of a regulated air pollutant or 10 tpy of a single HAP or 25 tpy of aggregated HAPs. Therefore, this facility is a deferred source under Title V.

G. 40CFR60, Subpart 000 – "Standards of Performance for Nonmetallic Mineral Processing Plants" requires notification of startup, operation of air pollution control equipment, and performance testing and recordkeeping. The RAP crusher is subject to this rule.

ATTACHMENT E

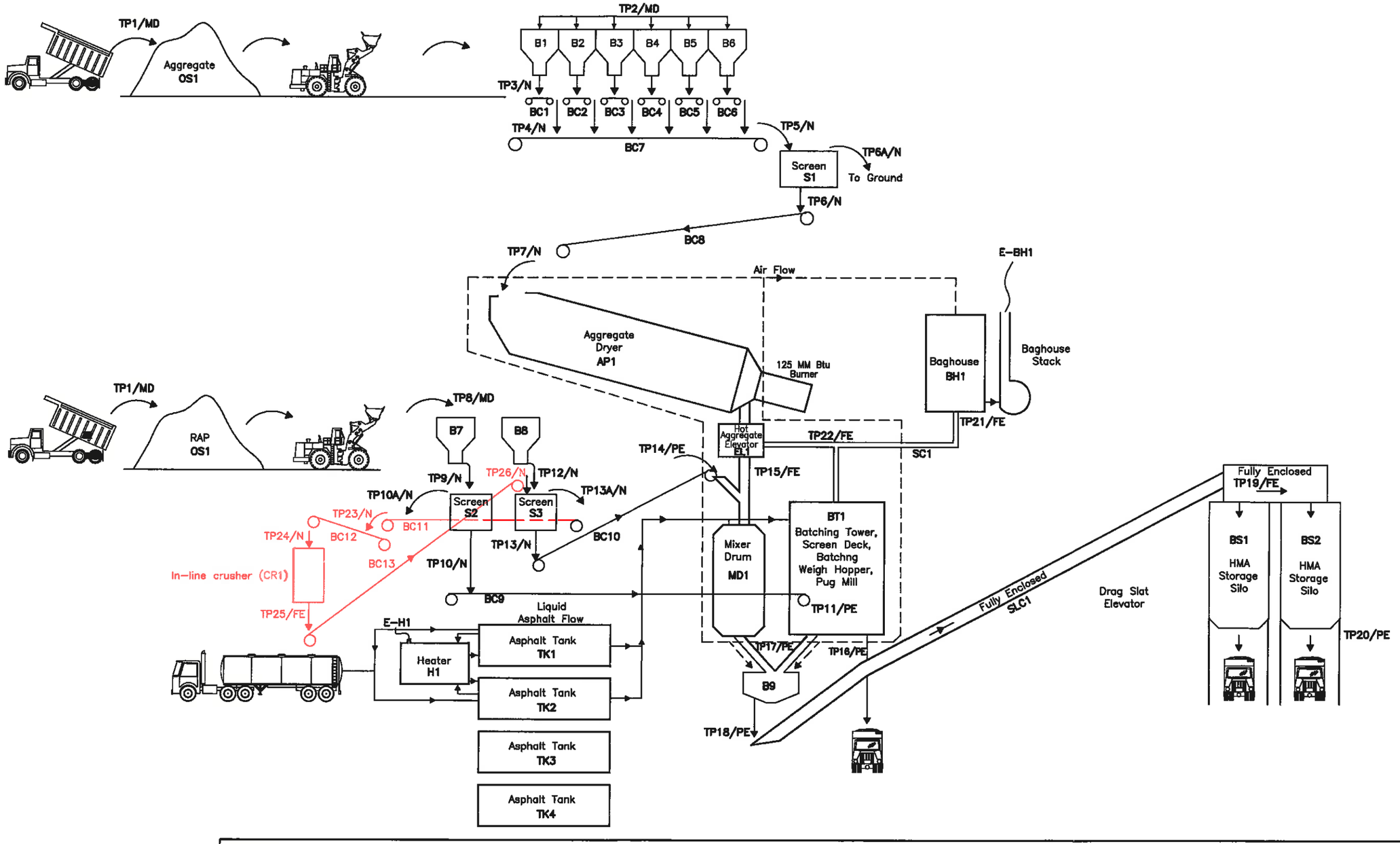
PLOT PLAN

POTESTA
7012 MacCorkle Avenue, S.E
Charleston, West Virginia 25304
Phone: (304) 342-1400
Fax: (304) 343-9031

Plot Plan
HMA Plant #14
Kelly Paving, Inc.
Pleasants County, West Virginia

ATTACHMENT F

DETAILED PROCESS FLOW DIAGRAM



XREF Files:
IMAGE Files:
File: S:\C3D--Proj-YR\2013\13-0061-KELLY PAVING\13-0061_B1.dwg
Plot Date/Time: Oct 14, 2015 - 2:36pm
Plotted By: cdbird

PROJECT #: 101-13-0061 FILENAME: 13-0061_B1

POTESTA

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE, Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 343-9031
E-Mail Address: potesta@potesta.com

Project
PROCESS FLOW DIAGRAM
KELLY PAVING PLANT 14
BENS RUN, WEST VIRGINIA

Scale NO SCALE
Date OCTOBER 2015
Dwg. No. FIGURE 1

ATTACHMENT G

PROCESS DESCRIPTION

ATTACHMENT G

PROCESS DESCRIPTION

Kelly Paving, Inc. is proposing to modify Hot Mix Asphalt (HMA) Plant #14 located near Bens Run, Pleasants County, West Virginia. The facility is requesting after-the-fact permitting for equipment added in 2014 (see Attachment I). The facility can operate as a batch plant or a drum mix plant. The facility cannot operate in both modes simultaneously; the plant operates as either batch mix or drum mix depending upon customer orders.

PROCESS DESCRIPTION

Aggregates and RAP are trucked or barged to the site and stored in open stockpile OS1/N (TP1/MD). Aggregates from stockpile OS1/N are transferred by a front endloader to cold feed bins B1/PE through B6/PE (TP2/MD). The aggregates from B1/PE drop to belt conveyor BC1/N; B2/PE to BC2/N; B3/PE to BC4/N; B4/PE to BC4/N; B5/PE to BC5/N; and B6/PE to BC6/N (TP3/N). BC1/N through BC6/N transfer to BC7/N (TP4/N) to screen S1/PE+WS (TP5/N). Oversize from S1/PE goes to ground (TP6A/N); pass through transfers to belt conveyor BC8/N (TP6/N) which conveys the aggregates to the dryer AP1/BH1[E-BH1] (TP7/N). Hot aggregate is transferred by the aggregate elevator EL1/BH1[E-BH1] to either the batch tower BT1/BH1[E-BH1] or to the mixer drum MD1/BH1[E-BH1] (TP15/FE).

RAP from stockpile OS1/N is transferred by front endloader to RAP bin B7/PE or B8/PE (TP8/MD). B7/PE drops material to screen S2/PE+WS (TP9/N) then to belt conveyor BC9/N (TP10/N) to the batch tower BT1/BH1[E-BH1] (TP11/PE). Oversized material from S2 transfers to belt conveyor BC11 (TP10A/N). B8/PE drops material to screen S3/PE+WS (TP12/N) then to belt conveyor BC10/N (TP13/N) to the mixer drum MD1/BH1[E-BH1] (TP14/PE). Oversized material from S3 transfers to belt conveyor BC11 (TP13A/N). Oversized material from BC11 transfers to BC12 (TP23/N) then to in-line RAP crusher CR1 (TP24/N) to belt conveyor BC13 (TP25/FE) then to S3 (TP26/N).

HMA from BT1/BH1[E-BH1] transfers to either truck (TP16/PE) or to hopper B9/PE (TP17/PE) to slat conveyor SLC1/FE (TP18/PE). HMA from MD1/BH1[E-BH1] transfers to hopper H1 TP17/PE) to slat conveyor SLC1/FE (TP18/PE). SLC1/N transfers HMA to silo BS1/FE or BS2/FE (TP19/FE) then to truck (TP20/PE).

Emissions from AP1, BT1, and MD1 are vented to baghouse BH1[E-BH1]. Particulate matter collected in the bottom of BH1 is removed via a screw conveyor SC1/FE (TP21/FE) that returns the material to the process (TP22/FE) where it becomes part of the product.

ATTACHMENT I

EMISSION UNITS TABLE

Attachment I
Emission Units Table
(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Black-Existing; Red-New;

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
B1	B1	Aggregate Bin	NA	30 tons	No Change	PE
B2	B2	Aggregate Bin	NA	30 tons	No Change	PE
B3	B3	Aggregate Bin	NA	30 tons	No Change	PE
B4	B4	Aggregate Bin	NA	30 tons	No Change	PE
B5	B5	Aggregate Bin	2013	30 tons	No Change	PE
B6	B6	Aggregate Bin	2013	30 tons	No Change	PE
BC1	BC1	Belt Conveyor	NA	250 tph	No Change	N
BC2	BC2	Belt Conveyor	NA	250 tph	No Change	N
BC3	BC3	Belt Conveyor	NA	250 tph	No Change	N
BC4	BC4	Belt Conveyor	NA	250 tph	No Change	N
BC5	BC5	Belt Conveyor	2013	250 tph	No Change	N
BC6	BC6	Belt Conveyor	2013	250 tph	No Change	N
BC7	BC7	Belt Conveyor	NA	250 tph	No Change	N
S1	S1	Aggregate Screen	NA	250 tph	No Change	PE+WS
BC8	BC8	Belt Conveyor	NA	250 tph	No Change	N
AP1	E-BH1	Dryer	2005	250 tph	No Change	BH
EL1	E-BH1	Aggregate Elevator	2005	250 tph	No Change	BH
BT1	E-BH1	Batch Tower (hot screens, mixer)	NA	250 tph	No Change	BH
MD1	E-BH1	Mixer Drum	2013	250 tph	No Change	BH
B9	B9	Slide Hopper	2005	250 tph	No Change	PE
B7	B7	RAP Bin	2005	15 tons	No Change	PE

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.
Note: PF = Process Fugitive Emissions, OD = Open Dust Emissions

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
S2	S2	RAP Screen	NA	65 tph	No Change	PE+WS
BC9	BC9	Belt Conveyor	2005	65 tph	No Change	N
B8	B8	RAP Bin	2013	15 tons	No Change	PE
S3	S3	Aggregate Screen	2013	65 tph	No Change	PE+WS
BC10	BC10	Belt Conveyor	2013	65 tph	No Change	N
BC11	BC11	Belt Conveyor	2014	65 tph	New	N
BC12	BC12	Belt Conveyor	2014	65 tph	New	N
BC13	BC13	Belt Conveyor	2014	65 tph	New	N
CR1	CR1	In-line RAP Crusher	2014	65 tph	New	FE
SLC1	SLC1	Slat Conveyor	2005	250 tph	No Change	FE
BS1	BS1	HMA Silo	2005	100 tons	No Change	FE
BS2	BS2	HMA Silo	2005	100 tons	No Change	FE
TK1	TK1	Asphalt Tank	2005	30,000 gal	No Change	FE
TK2	TK2	Asphalt Tank	2005	18,500 gal	No Change	FE
TK3	TK3	Fuel Tank	2005	12,000 gal	No Change	FE
TK4	TK4	Fuel Tank	2005	10,000 gal	No Change	FE
H1	H1	Asphalt Tank Heater	2005	2 MMBtu/hr	No Change	N
SC1	SC1	Screw Conveyor	NA	10 tph	No Change	FE

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.
Note: PF = Process Fugitive Emissions, OD = Open Dust Emissions

ATTACHMENT J

EMISSION POINTS DATA SUMMARY SHEET

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			
E-BH1	UVS	AP1 BT1 DM1 EL1	Dryer Batch Tower Drum Mixer Agg Elevator	BH1	Baghouse	NA	NA	PM PM10 PM2.5 SOx NOx CO VOC HAPS-VOC* HAPS-Metal*	8,000 1,625 385 22.00 30.00 100.00 9.00 2.60 0.0313	7,200 1,463 347 19.80 27.00 90.00 8.10 2.34 0.0280	10.50 6.75 3.50 22.00 30.00 100.00 9.00 2.60 0.0313	9.45 6.08 3.15 19.80 27.00 90.00 8.10 2.34 0.0280	Solid Solid Solid Vapor Vapor Vapor Vapor Mist Vapor Solid	EE	NA
E-H1	UVS	H1	Hot Oil Heater	NA	NA	NA	NA	PM PM10 PM2.5 SOx NOx CO VOC HAPS*	0.67 0.53 0.53 4.08 0.20 0.17 0.01 0.005	2.01 1.60 1.60 12.34 0.60 0.51 0.03 0.005	0.67 0.53 0.53 4.08 0.20 0.17 0.01 0.005	2.01 1.60 1.60 12.34 0.60 0.51 0.03 0.005	Solid Solid Solid Vapor Vapor Vapor Vapor Vapor	EE	NA
S1	NA	S1	Aggregate Screen	PE + WS	Partial Enclosure/ Water Spray	NA	NA	PM PM10 PM2.5	6.25 2.18 0.45	5.63 1.96 0.40	1.25 0.44 0.09	1.13 0.39 0.08	Solid Solid Solid	EE	NA
S2	NA	S2	RAP Screen	PE + WS	Partial Enclosure/ Water Spray	NA	NA	PM PM10 PM2.5	1.63 0.57 0.12	2.25 0.78 0.16	0.33 0.11 0.02	0.45 0.16 0.03	Solid Solid Solid	EE	NA
S3	NA	S3	RAP Screen	PE + WS	Partial Enclosure/ Water Spray	NA	NA	PM PM10 PM2.5	1.63 0.57 0.12	2.25 0.78 0.16	0.33 0.11 0.02	0.45 0.16 0.03	Solid Solid Solid	EE	NA

* See Attachment N for speciation of VOCs and HAPs

Table 1: Emissions Data (continued)

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			
CR1	NA	CR1	RAP Crusher	FE	Fully Enclosed	NA	NA	PM PM10 PM2.5	0.35 0.16 0.03	0.49 0.22 0.04	0.07 0.03 0.01	0.10 0.04 0.007	Solid Solid Solid	EE	NA
TP1 to 26**	NA	TP1 to 26**	Transfer Points	Various	Various	NA	NA	PM PM10 PM2.5	9.67 4.58 0.69	8.21 3.89 0.59	8.40 3.98 0.60	7.23 3.43 0.52	Solid Solid Solid	EE	NA
TP17, 18, and TP19	NA	TP17, 18, and TP19	Silo Filling	Various	Various	NA	NA	PM PM10 PM2.5 VOC CO HAPS*	0.44 0.10 0.02 9.14 0.88 0.119	0.40 0.09 0.02 8.23 0.80 0.107	0.18 0.04 0.01 9.14 0.88 0.119	0.16 0.04 0.01 8.23 0.80 0.107	Solid Solid Solid Vapor Vapor Vapor	EE	NA
TP16 and 20	NA	TP16 and 20	HMA Loadout	Various	Various	NA	NA	PM PM10 PM2.5 VOC CO HAPS*	0.26 0.06 0.01 1.95 0.67 0.023	0.12 0.03 0.01 0.88 0.30 0.012	0.13 0.03 0.01 1.95 0.67 0.023	0.06 0.02 0.01 0.88 0.30 0.012	Solid Solid Solid Vapor Vapor Vapor	EE	NA
TK1-4	UVS	TK1-4	Tanks	N	None	NA	NA	VOC	0.0002	0.007	0.0002	0.007	Vapor	EE	NA

* See Attachment N for speciation of HAPs
**Less TP16, 17, 18, 19, 20.

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 (i.e., 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 the 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).

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
E-BH1	NAv	NAv	54,000	NAv	~619 ft.	NAv	4,365.991	488.850
E-H1	NAv	NAv	NAv	NAv	~619 ft.	NAv	4,365.991	488.850
TK1-4	NAv	NAv	NAv	NAv	~619 ft.	NAv	4,365.991	488.850

[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? ☒ Yes ☐ No ☐ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☒ Yes ☐ No ☐ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☐ Yes ☒ No ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ No ☐ 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.)? ☐ Yes ☒ No ☐ 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? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ No ☐ 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	NA					
Unpaved Haul Roads	PM PM10 PM2.5	78.84 20.24 2.10	78.49 20.15 2.09	23.65 6.07 0.63	23.55 6.05 0.63	EE
Storage Pile Emissions	PM PM10 PM2.5	0.52 0.25 0.12	2.26 1.08 0.51	0.52 0.25 0.12	2.26 1.08 0.51	EE
Loading/Unloading Operations	NA					
Wastewater Treatment Evaporation & Operations	NA					
Equipment Leaks	NA					
General Clean-up VOC Emissions	NA					
Other	NA					

[1] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. DO NOT LIST H_2, H_2O, N_2, O_2, 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

EMISSION UNIT DATA SHEETS

HMA PLANT PRODUCTION AFFECTED SOURCE SHEET

General HMA Plant Information	Source Identification Number[1]	AP1, BT1, MD1			
	Manufacturer & Model Number	Cedarrapids, Inc. H60E (Dryer)			
	Date of Manufacture	NAv			
	Plant Type[2]	COMB			
	Max Production Rate (ton/hour)	250			
	Max Yearly Production (tons/year)	450,000			
	Annual Operation (hours/year)	6,048			
Batch Plant Information	Tons per Batch	3			
	Batches per Hour	83			
Drum Mixer Information	Drum Length (ft)	20			
	Drum Diameter (ft)	7.5			
Burner, Fuel & Combustion Data	Burner Manufacturer & Model Number	Hauck Manufacturing Co., Model 110, Star Jet 520, 93.3 MM Btu/hr			
	Design Heat Input (mmBTU/hour)	93.3	93.3	93.3	93.3
	Excess Air (%)	25	25	25	25
	Fuel Type[3]	PNG	UO	#2FO	4FO/6FO
	Maximum Fuel Usage[4]	93,385 ft^3/hr	711 gal/hr	696 gal/hr	658/640 gal/hr
	Fuel Heating Value[5]	1,028 Btu/scf	135,000 Btu/gal	138,000 Btu/gal	146,000/ 150,000 Btu/gal
	Maximum Sulfur Content (%)	ND	0.5	0.0015	2.0/2.0
	Maximum Ash Content (%)	ND	0.8	0.01	0.1/0.1

1. Enter the appropriate Source Identification Number for each rotary dryer or drum mixer. Batch plant rotary dryer should be designated BPRD-1, parallel flow drum mixer designated PFDM-1, and counterflow drum mixer designated CDFM-1, etc.

2. Enter the Plant Type designation using the following codes:

Batch	Batch Plant	PFDM	Parallel Flow Drum Mix Plant
CFDM	Counterflow Drum Mix Plant	CNMX	Continuous Mix Plant
COMB	Combination Batch/Drum Mix Plant		

3. Enter the Fuel Type(s) using the following code:

PNG	Pipeline Quality Natural Gas	#2FO	Number 2 Fuel Oil
UO	Used or Recycled Oil		

4. Enter the maximum fuel use in standard cubic feet per hour (natural gas) or gallons per hour (fuel oil). List appropriate units.

5. Enter the Fuel heating value in Btu per standard cubic foot (natural gas) or Btu per gallon (fuel Oil). List appropriate units.

* This burner is a coal burner that uses PNG, #2FO or UO as a support fuel for continuous ignition of clean pulverized bituminous coal. The burner can also fire at 100% of rated capacity on the support fuel if the coal supply is not available.

AIR POLLUTION CONTROL DEVICE AFFECTED SOURCE SHEET

HMA PLANT AIR POLLUTION CONTROL DEVICE DATA SHEET		PRIMARY COLLECTION (BAGHOUSE)	SECONDARY COLLECTION
General Information	APCD Identification Number	BH1	Not Applicable
	Manufacturer & Model Number	Aeropulse	
Physical Parameters	Number of Cylinders	NAv	
	Number of Compartments	1	
	Cylinder Diameter (ft)	NAv	
	Cylinder Length (ft)	NAv	
	Cone Length (ft)	NAv	
	Gas Inlet Area (ft)	NAv	
	Gas Outlet Area (ft)	NAv	
	Bag Cleaning Mechanism	Pulse Jet	
	Total Cloth (fabric) Area (ft^2)	10,880	
	Draft Fan HP	NAv	
	Outlet Stack Area (ft^2)	NAv	
Operational Parameters	Minimum Design ΔP (in H20)	NAv	
	Maximum Design ΔP (in H20)	NAv	
	Inlet Gas Flow Rate (ACFM)	NAv	
	Inlet Gas Temperature (°F)	220-365	
	Inlet Gas Pressure (PSIA)	Varies	
	Inlet Gas Velocity (ft/sec)	NAv	
	PM Inlet Rate (grains/ACF)	NAv	
	PM Outlet Rate (grains/ACF)	NAv	
	Operating Air/Cloth Ratio (ft/min)	5:1	
Fractional Efficiency of Collector	Particle Size Range (µm)	Weight Percent for Particle Size Range	
	0-2	Typical	
	2-4		
	4-6		
	6-8		
	8-10		
	10-12		
	12-16		
	16-20		
	20-30		
	30-40		
	40-50		
	50-60		
	60-70		
	70-80		
	80-90		
	90-100		

*Emission limit from 40CFR60 Subpart I.

HMA PLANT PARTICULATE MATTER CAPTURE SYSTEM AFFECTED SOURCE SHEET

Pursuant to Section 2.3.5 of General Permit G-20B and 45CSR3, the registrant shall not cause, allow or permit a hot mix asphalt plant to operate that is not equipped with a particulate matter capture system. Such systems and devices shall be designed, operated and maintained in such a manner as to prevent the emission of particulate matter from any point other than a stack outlet.

A particulate matter capture system shall be used to confine, collect and transport particulate matter from dryers, hot elevators, screens, drum mixers, pugmills, weigh hoppers, hot bins and related components to air pollution control devices. Particulate matter capture systems shall include but not be limited to hoods, bins, ductwork, enclosures, air pollution control devices and fans.

Provide a written description of the hot mix asphalt plant's particulate matter capture system below:

The particulate matter capture system is comprised of baghouse, exhaust fans, motors, and ducting. The particulates pass from the dryer through the ductwork and into the baghouse where the particulate is captured by the bags and released by pulse jet air to the bottom of the baghouse. The fines and large particles are returned to the drum mixer/batch tower through an auger system and become part of the final hot mix product.

HMA PLANT MATERIAL STORAGE & HANDLING AFFECTED SOURCE SHEET

Source Identification Number[1]	OS1				
Material Stored[2]	Aggregates/ Limestone/ Slag/Sand/ RAP				
Maximum Yearly Throughput (tons/year)[3]	450,000				
Typical Moisture Content (%)[4]	Varies				
Average % of Material Passing Through 200 Mesh Sieve[5]	Varies				
Maximum Stockpile Base Area (ft^2)[6]	160,000				
Maximum Stockpile Height (ft)[7]	25				
Maximum Storage Capacity (tons)[8]	25,000				
Dust Control Method Applied to Storage[9]	N				
Method of Material Load-in to Bin or Stockpile[10]	TD/FE				
Dust Control Method Applied During Load-in[11]	MD				
Method of Material Load-out from Bin or Stockpile[10]	FE				
Dust Control Method Applied During Load-out[11]	MD				

HMA PLANT MATERIAL STORAGE & HANDLING
AFFECTED SOURCE SHEET

Source Identification Number[1]	BS1	BS2
Material Stored[2]	HMA	
Maximum Yearly Throughput (tons/year)[3]	450,000	
Typical Moisture Content (%)[4]	NA	NA
Average % of Material Passing Through 200 Mesh Sieve[5]	NA	NA
Maximum Stockpile Base Area (ft^2)[6]		
Maximum Stockpile Height (ft)[7]		
Maximum Storage Capacity (tons)[8]	100	100
Dust Control Method Applied to Storage[9]	FE	FE
Method of Material Load-in to Bin or Stockpile[10]	SS	SS
Dust Control Method Applied During Load-in[11]	FE	FE
Method of Material Load-out from Bin or Stockpile[10]	OT-Chute	OT-Chute
Dust Control Method Applied During Load-out[11]	PE	PE

1. Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes four open stockpiles and one storage silo, the Source Identification Numbers should be OS-1, OS-2, OS-3, and OS-4; and BS-1, respectively.
   OS Open Stockpile E3 Enclosure (three-sided enclosure)
   BS Bin or Storage Silo (full enclosure) SB Storage Building (full enclosure)
   SF Stockpiles with wind fences OT Other _____ (please specify)
2. Describe the type of material stored or stockpiled.
3. Enter the maximum yearly storage throughput for each storage activity.
4. Enter the average percent moisture content of the stored material.
5. Enter the average percent of material that will pass through a 200 mesh sieve.
6. For stockpiles, enter the maximum stockpile base area.
7. For stockpiles, enter the maximum stockpile height.
8. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.).
9. Enter the dust control method applied to storage activity using the following codes:
   CA Crusting Agent WS Water Spray
   FE Full Enclosure NO None
   OT Other _____ (please specify)
10. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:
   FE Front Endloader SS Stationary Conveyor/Stacker
   ST Stacking Tube MC Mobile Conveyor/Stacker
   CS Clamshell TD Truck Dump
   OT Other _____ (please specify)
11. Enter the dust control method applied during load-in or load-out using the following codes:
   CA Crusting Agent WS Water Spray
   FE Full Enclosure MD Minimize Drop Height
   ST Stacking Tube NO None
   OT Other _____ (please specify)

HMA PLANT MATERIAL STORAGE & HANDLING
AFFECTED SOURCE SHEET

Source Identification Number[1]	B1	B2	B3	B4	B5	B6
Material Stored[2]	Aggregates	Aggregates	Aggregates	Aggregates	Aggregates	Aggregates
Maximum Yearly Throughput (tons/year)[3]	450,000					
Typical Moisture Content (%)[4]	3	3	3	3	3	3
Average % of Material Passing Through 200 Mesh Sieve[5]	NA	NA	NA	NA	NA	NA
Maximum Stockpile Base Area (ft^2)[6]						
Maximum Stockpile Height (ft)[7]						
Maximum Storage Capacity (tons)[8]	30	30	30	30	30	30
Dust Control Method Applied to Storage[9]	PE	PE	PE	PE	PE	PE
Method of Material Load-in to Bin or Stockpile[10]	FE	FE	FE	FE	FE	FE
Dust Control Method Applied During Load-in[11]	MD	MD	MD	MD	MD	MD
Method of Material Load-out from Bin or Stockpile[10]	SS	SS	SS	SS	SS	SS
Dust Control Method Applied During Load-out[11]	N	N	N	N	N	N

1. Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes four open stockpiles and one storage silo, the Source Identification Numbers should be OS-1, OS-2, OS-3, and OS-4; and BS-1, respectively.
   OS Open Stockpile E3 Enclosure (three-sided enclosure)
   BS Bin or Storage Silo (full enclosure) SB Storage Building (full enclosure)
   SF Stockpiles with wind fences OT Other _____ (please specify)
2. Describe the type of material stored or stockpiled.
3. Enter the maximum yearly storage throughput for each storage activity.
4. Enter the average percent moisture content of the stored material.
5. Enter the average percent of material that will pass through a 200 mesh sieve.
6. For stockpiles, enter the maximum stockpile base area.
7. For stockpiles, enter the maximum stockpile height.
8. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.).
9. Enter the dust control method applied to storage activity using the following codes:
   CA Crusting Agent WS Water Spray
   FE Full Enclosure NO None
   OT Other _____ (please specify)
10. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:
   FE Front Endloader SS Stationary Conveyor/Stacker
   ST Stacking Tube MC Mobile Conveyor/Stacker
   CS Clamshell TD Truck Dump
   OT Other _____ (please specify)
11. Enter the dust control method applied during load-in or load-out using the following codes:
   CA Crusting Agent WS Water Spray
   FE Full Enclosure MD Minimize Drop Height
   ST Stacking Tube NO NoneOT Other _____ (please specify)

HMA PLANT MATERIAL STORAGE & HANDLING
AFFECTED SOURCE SHEET

Source Identification Number[1]	B7	B8	B9			
Material Stored[2]	RAP	RAP	HMA			
Maximum Yearly Throughput (tons/year)[3]	180,000		450,000			
Typical Moisture Content (%)[4]	8	8	NA			
Average % of Material Passing Through 200 Mesh Sieve[5]	NA	NA	NA			
Maximum Stockpile Base Area (ft^2)[6]						
Maximum Stockpile Height (ft)[7]						
Maximum Storage Capacity (tons)[8]	15	15	NAv			
Dust Control Method Applied to Storage[9]	PE	PE	PE			
Method of Material Load-in to Bin or Stockpile[10]	FE	FE	OT			
Dust Control Method Applied During Load-in[11]	MD	MD	PE			
Method of Material Load-out from Bin or Stockpile[10]	OT	OT	SS			
Dust Control Method Applied During Load-out[11]	N	N	PE			

1. Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes four open stockpiles and one storage silo, the Source Identification Numbers should be OS-1, OS-2, OS-3, and OS-4; and BS-1, respectively.
   - OS Open Stockpile
   - BS Bin or Storage Silo (full enclosure)
   - SF Stockpiles with wind fences
   - E3 Enclosure (three-sided enclosure)
   - SB Storage Building (full enclosure)
   - OT Other to screen (please specify)
2. Describe the type of material stored or stockpiled.
3. Enter the maximum yearly storage throughput for each storage activity.
4. Enter the average percent moisture content of the stored material.
5. Enter the average percent of material that will pass through a 200 mesh sieve.
6. For stockpiles, enter the maximum stockpile base area.
7. For stockpiles, enter the maximum stockpile height.
8. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.).
9. Enter the dust control method applied to storage activity using the following codes:
   - CA Crusting Agent
   - FE Full Enclosure
   - OT Other _____ (please specify)
   - WS Water Spray
   - NO None
10. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:
    - FE Front Endloader
    - ST Stacking Tube
    - CS Clamshell
    - OT Other _____ (please specify)
    - SS Stationary Conveyor/Stacker
    - MC Mobile Conveyor/Stacker
    - TD Truck Dump
11. Enter the dust control method applied during load-in or load-out using the following codes:
    - CA Crusting Agent
    - FE Full Enclosure
    - ST Stacking Tube
    - WS Water Spray
    - MD Minimize Drop Height
    - NO None

HMA PLANT FUGITIVE DUST CONTROL SYSTEM
AFFECTED SOURCE SHEET

Fugitive Dust Control System Data	Fugitive Dust Control Method[1]	WT
	Design Water Flow Rate[2] (GPM)	NA
	Chemical Additive[3]	NA
	Water/Additive Mix Ratio[4]	NA
	Amount[5] (gal/yd^2)	NA
	Frequency of Application[6]	As needed
	Haul road Surface[7]	Asphalt/Gravel
	Work/Storage Area Surface[7]	Gravel
	Haul road Length[8]	0.71 miles/trip (maxiumum)
	Number of Vehicles per Day[9]	27 per hour
	Number of Wheels per Vehicle[10]	Varies
	Weight of Vehicle (tons)[11]	27 (mean)

1. Enter the fugitive dust control method(s) using the following codes:
   WT Water Truck
   UW Underbody Truck Wash
   OT Other _____ (please specify)
   WS Fixed Water Sprays
   RS Rumble Strips
2. Enter the design water flow rate for the water truck or fixed water sprays in gallons per minute.
3. Enter manufacturer and type, specification or grade of chemical additive.
4. Enter the water/chemical additive mix ratio.
5. Enter the amount of water or water/chemical additive mix to be applied to haulroads, storage and work areas in gallons per square yard.
6. Enter the frequency of application of water/chemical additive mix to haulroads, storage and work areas during periods of dry weather.
7. Enter the type of haulroad, work and storage area surface (asphalt pavement, concrete, dirt, coarse gravel, reddog, etc.).
8. Enter the approximate length of haulroad(s) in miles or feet. List appropriate units.
9. Enter the maximum daily vehicle traffic (trucks per day).
10. Enter the maximum number of wheels per vehicle.
11. Enter the mean vehicle weight in tons.
12. Complete a separate HMA Plant Fugitive Dust Control System Data sheet for each fugitive dust control system.

Provide a written description of the hot mix asphalt plant's fugitive dust control system below:

Fugitive emissions of particulate mater occur during loading and unloading operations, the transfer of aggregates and RAP, stockpile wind erosion and vehicle travel on haul roads. Fugitive emissions from loading and unloading operations are controlled by minimization of drop height. Fugitive emissions from the transfer of aggregates and RAP are controlled by minimization of drop height in combination with transfers being made to bins with partial enclosures and load-outs with partial enclosures. Wind erosion in the stockpile areas are controlled by the moisture content in the raw materials. A water truck is used to control fugitive emissions from the haul roads.

HMA PLANT ASPHALT HEATER AFFECTED SOURCE SHEET

Source Identification Number[1]	Maximum Fuel Use[2]	Fuel Type[3]	Hours of Operation (hrs/yr)[4]
AH1	2,000 scfh/140 gph (#2FO)	PNG/#2FO/UO/#4FO/#6FO	6,048

1. Enter the appropriate Source Identification Number for each asphaltic cement tank heater located at the hot mix asphalt plant. Asphaltic cement tank heaters should be designated AH-1, AH-2, etc.
2. Enter the maximum fuel use in standard cubic foot per hour (natural gas) or gallons per hour (fuel oil). List appropriate units.
3. Enter the Fuel Type using the following codes:
   PNG Pipeline Quality Natural Gas #2FO Number 2 Fuel Oil UO Used Oil
4. Enter the maximum hours of operation each year.

HMA PLANT STORAGE TANK AFFECTED SOURCE SHEET

Source Identification Number[1]	Content[2]	Length[3] (ft)	Dia[4] (ft)	Volume[5] (gallons)	Throughput[6] (gal/yr)	Orientation[7]	Liquid Height[8] (ft)
TK1	Asphaltic Cement	NAv	NAv	30,000	6,000,000	NAv	NAv
TK2	Asphaltic Cement	NAv	NAv	18,500		NAv	NAv
TK3	Fuel	NAv	NAv	12,000	1,500,000	NAv	NAv
TK4	Fuel	NAv	NAv	10,000		NAv	NAv

1. Enter the appropriate Source Identification Number for each storage tank located at the hot mix asphalt plant. Storage tanks should be designated T-1, T-2, T-3, etc.
2. Enter storage tank content (#2 fuel oil, asphaltic cement, water, etc.)
3. Enter storage tank length in feet.
4. Enter storage tank diameter in feet.
5. Enter storage tank volume in gallons. Storage tank volume may be calculated using the following mathematical relationship:
   (length of tank) X (area conversion) X (tank diameter)^2 X (liquid volume conversion) or,
   (L_{tank} ft) X (3.14/4) X (d^2_{tank} ft^2) X (7.48 gallons/ft^3)
6. Enter storage tank throughput in gallons per year.
7. Enter storage tank orientation using the following codes:
   VERT Vertical Tank HORZ Horizontal Tank
8. Enter storage tank average liquid height in feet.
9. Storage tank emissions may be calculated by WVDAQ using TANKS emission calculation program.

CRUSHING AND SCREENING AFFECTED SOURCE SHEET

Source Identification Number[1]		S1	S2	S3	CR1		
Type of Crusher or Screen[2]		SD	SD	SD	Impact		
Make, Model No., Serial No.[3]		NA	NA	NA	NA		
Date of Construction, Reconstruction, or Modification (Month/Year)[4]		NA	NA	2013	2014		
Maximum Throughput[5]	tons/hour	250	65	65	65		
	tons/year	450,000	180,000	180,000	180,000		
Material sized from/to:[6]		NA	NA	NA	NA		
Average Moisture Content (%)[7]		3	8	8	8		
Control Device ID Number[8]		PE+WS	PE+WS	PE+WS	FE		
Baghouse Stack Parameters[9]	height (ft)						
	diameter (ft)						
	volume (ACFM)						
	exit temp (F)						
	UTM Coordinates						
Maximum Operating Schedule[10]	hours/day	24	24	24	24		
	days/year	365	365	365	365		
	hours/year	8,760	8,760	8,760	8,760		

1. Enter the appropriate Source Identification Number for each crusher and screen. For example, in the case of an operation which incorporates multiple crushers, the crushers should be designated CR-1, CR-2, CR-3 etc. beginning with the breaker or primary crusher. Multiple screens should be designated S-1, S-2, S-3 etc.
2. Describe types of crushers and screens using the following codes:

HM	Hammermill	SS	Stationary Screen	DR	Double Roll Crusher
SD	Single Deck Screen	BM	Ball Mill	DD	Double-Deck Screen
RB	Rotary Breaker	TD	Triple Deck Screen	JC	Jaw Crusher
GC	Gyratory Crusher	OT	Other		

3. Enter the make, model number, and serial number of the crusher/screen.
4. Enter the date that each crusher and screen was constructed, reconstructed, or modified.
5. Enter the maximum throughput for each crusher and screen in tons per hour and tons per year.
6. Describe the nominal material size reduction (e.g. +2"/ -⅜").
7. Enter the average percent moisture content of the material processed.
8. Enter the appropriate Control Device Identification Number for each crusher and screen. Refer to Table A - *Control Device Listing* and *Control Device Identification Number Instructions* in the *Reference Document* for Control Device ID prefixes and numbering.
9. Enter the appropriate stack parameters if a baghouse control device is used.
10. Enter the maximum operating schedule for each crusher and screen in hours per day, days per year and hours per year.

* Assumes that 50% of material that initially passes through the screen (SCR-1) is oversized and makes the circuit through the crusher CR-1 and back through the screen (SCR-1).

CONVEYING AFFECTED SOURCE SHEET

Source Identification Number[1]	Date of Construction, Reconstruction, or Modification (Month/Year)[2]	Type of Material Handled[3]	Size of Material Handled[4]	Maximum Material Transfer Rate[5]		Average Moisture Content (%)[6]	Control Device[7]
				tons/hour	tons/year		
BC1	NA	Aggregates	+1 x 0	250	450,000	3	N
BC2	NA	Aggregates	+1 x 0	250	450,000	3	N
BC3	NA	Aggregates	+1 x 0	250	450,000	3	N
BC4	NA	Aggregates	+1 x 0	250	450,000	3	N
BC5	2013	Aggregates	+1 x 0	250	450,000	3	N
BC6	2013	Aggregates	+1 x 0	250	450,000	3	N
BC7	NA	Aggregates	-1 x 0	250	450,000	3	N
BC8	NA	Aggregates	-1 x 0	250	450,000	3	N
BC9	2005	RAP	+2 x 0	65	180,000	8	N
BC10	2013	RAP	+2 x 0	65	180,000	8	N
BC11	2014	RAP	+2 x 0	65	180,000	8	N
BC12	2014	RAP	+2 x 0	65	180,000	8	N
BC13	2014	RAP	+2 x 0	65	180,000	2	N
SLC1	2013	Hot Mix Asphalt	Typical	250	450,000	2	FE
SC1	2013	Baghouse Dust	Various	10	12,500	2	FE

1. Enter the appropriate Source Identification Number for each conveyor using the following codes. For example, multiple belt conveyors should be designated BC-1, BC-2, BC-3 etc. Transfer points are considered emission points, not sources, and should not be included in the *Conveying Affected Source Sheet*. Transfer Point Identification Numbers shall be assigned in the *Emission Calculation Sheet*.

   BC Belt Conveyor BE Bucket Elevator DL Drag-link Conveyor
   PS Pneumatic System SC Screw Conveyor VC Vibrating Conveyor
   OT Other SLC Slat Conveyor

2. Enter the date that each crusher and screen was constructed, reconstructed, or modified.
3. Enter the type of material being handled - Raw Coal (RC) Sized Coal (SC) Clean Coal (CC) Refuse (R) Other (O)
4. Enter the nominal size of the material being conveyed (e.g. clean coal - ¾" x 0). If more than one material is handled by the listed conveyor, list each material and enter the appropriate data for each material.
5. Enter the maximum material transfer rate for each conveyor in tons per hour and tons per year.
6. Enter the average percent moisture content of the conveyed material.
7. Enter the control device for the conveyor. PE - Partial Enclosure (example 3/4 hoop), FE - Full Enclosure, N – None,

Attachment L
FUGITIVE EMISSIONS FROM UNPAVED HAULROADS

UNPAVED HAULROADS (including all equipment traffic involved in process, haul trucks, end loaders, etc.)

		PM	PM-10
k =	Particle size multiplier	See calculations for input into equation.	
s =	Silt content of road surface material (%)		
p =	Number of days per year with precipitation >0.01 in.		

Item Number	Description	Number of Wheels	Mean Vehicle Weight (tons)	Mean Vehicle Speed (mph)	Miles per Trip	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID Number	Control Efficiency (%)
1	Aggregate/RAP Trucks	18	25	~10	0.65	13	22,500	WT	70
2	HMA Trucks	18	25	~10	0.65	13	22,500	WT	70
3	Front Endloaders	4	37	~10	1	1	8,760	WT	70
4									
5									
6									
7									

Source: *AP-42 Sixth Edition – 13.2.2 Unpaved Roads*

$E = k \times 5.9 \times (s \div 12) \times (W \div 3)^{0.7} \times ((365 - p) \div 365)$ = lb/Vehicle Mile Traveled (VMT)

Where:

		PM	PM-10
k =	Particle size multiplier	See calculations for input into equation.	
s =	Silt content of road surface material (%)		
W =	Mean vehicle weight (tons)		
p =	Number of days per year with precipitation >0.01 in.		

For lb/hr: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] = lb/hr

For TPY: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] × [Ton ÷ 2000 lb] = Tons/year

SUMMARY OF UNPAVED HAULROAD EMISSIONS

Item No.	PM				PM-10/PM2.5			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1,2,3	78.74	78.49	23.65	23.55	20.24/2.10	20.15/2.09	6.07/0.63	6.05/0.63
TOTALS	78.74	78.49	23.65	23.55	20.24/2.10	20.15/2.09	6.07/0.63	6.05/0.63

FUGITIVE EMISSIONS FROM PAVED HAULROADS (NOT APPLICABLE)

INDUSTRIAL PAVED HAULROADS (including all equipment traffic involved in process, haul trucks, end loaders, etc.)

k=	Dimensionless, particle size multiplier	
sL=	Surface material silt content (g/m^2)	
P=	Number of days per year with >0.01" of precipitation	

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID Number	Control Efficiency (%)
1							
2							
3							
4							
5							
6							

Source: *AP-42 Sixth Edition 13.2.1.5 Paved Roads*

$E = [k(sL)^{0.91} \times (W)^{1.02}] \times (1-(P/4N)$ = lb/Vehicle Mile Traveled (VMT)

Where:

k=	Dimensionless, particle size multiplier	
sL=	Surface material silt content (g/m^2)	
W=	Mean vehicle weight (tons)	
P=	Number of days per year with >0.01" of precipitation	
N=	Days per year	

For lb/hr: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] = lb/hr

For TPY: [lb ÷ VMT] × [VMT ÷ trip] × [Trips ÷ Hour] × [Ton ÷ 2000 lb] = Tons/year

SUMMARY OF PAVED HAULROAD EMISSIONS

Item No.	PM				PM-10/PM2.5			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1								
2								
3								
4								
5								
6								
TOTALS								

ATTACHMENT N

SUPPORTING EMISSIONS CALCULATIONS

Kelly Paving, Inc.
HMA Plant 14

Potesta & Associates, Inc.
Project Number 0101-15-0319

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

Change in Emissions

Emission Type	Point Source				Fugitive			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PM	3.87	5.67	2.02	2.58	0.00	0.00	0.00	0.00
PM_{10}	4.38	4.73	1.46	1.63	0.00	0.00	0.00	0.00
$PM_{2.5}$	0.86	0.91	0.26	0.28	0.00	0.00	0.00	0.00
VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO_2	0.00	0.00	0.00	0.00	Not Applicable			
NO_x	0.00	0.00	0.00	0.00				
CO	0.00	0.00	0.00	0.00				
Acetaldehyde	0.00	0.00	0.00	0.00				
Benzene	0.00	0.00	0.00	0.00				
Ethylbenzene	0.00	0.00	0.00	0.00				
Toluene	0.00	0.00	0.00	0.00				
Xylene	0.00	0.00	0.00	0.00				
Formaldehyde	0.00	0.00	0.00	0.00				
Total HAPs	0.00	0.00	0.00	0.00				

Emission Type	Facility Total			
	Uncontrolled		Controlled	
	lb/hr	tons/yr	lb/hr	tons/yr
PM	3.87	5.67	2.02	2.58
PM_{10}	4.38	4.73	1.46	1.63
$PM_{2.5}$	0.86	0.91	0.26	0.28
VOC	0.00	0.00	0.00	0.00
SO_2	0.00	0.00	0.00	0.00
NO_x	0.00	0.00	0.00	0.00
CO	0.00	0.00	0.00	0.00
Acetaldehyde	0.00	0.00	0.00	0.00
Benzene	0.00	0.00	0.00	0.00
Ethylbenzene	0.00	0.00	0.00	0.00
Toluene	0.00	0.00	0.00	0.00
Xylene	0.00	0.00	0.00	0.00
Formaldehyde	0.00	0.00	0.00	0.00
Total HAPs	0.00	0.00	0.00	0.00

Kelly Paving, Inc.
HMA Plant 14

Potesta & Associates, Inc.
Project Number 0101-15-0319

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

Proposed Emissions

	Point Source [1]				Fugitive [2]			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
Emission Type	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PM	8,020.90	7,221.36	10.69	9.58	79.36	80.75	24.17	25.81
PM_{10} [5]	1,633.75	1,471.85	4.74	4.24	20.49	21.23	6.32	7.13
$PM_{2.5}$ [5]	386.97	349.48	1.29	2.28	2.22	2.60	0.75	1.14
VOC	20.10	17.24	20.10	17.24	0.0002	0.007	0.0002	0.007
SO_2	26.08	32.14	26.08	32.14	Not Applicable			
NO_x	30.20	27.60	30.20	27.60				
CO	101.72	91.61	101.72	91.61				
Acetaldehyde	0.330	0.290	0.330	0.290				
Benzene	0.105	0.095	0.105	0.095				
Ethylbenzene	0.560	0.507	0.560	0.507				
Toluene	0.781	0.701	0.781	0.701				
Xylene	0.731	0.651	0.731	0.651				
Formaldehyde	0.681	0.611	0.681	0.611				
Total HAPs	3.188	2.855	3.188	2.855				

Major PSD Source for any regulated air pollutant? [3] NO

Major Title V Source for any regulated air pollutant? [4] NO

	Facility Total			
	Uncontrolled		Controlled	
Emission Type	lb/hr	tons/yr	lb/hr	tons/yr
PM	8,100.26	7,302.11	34.86	35.39
PM_{10}	1,654.24	1,493.08	11.06	11.37
$PM_{2.5}$	389.19	352.08	2.04	3.42
VOC	20.10	17.25	20.10	17.25
SO_2	26.08	32.14	26.08	32.14
NO_x	30.20	27.60	30.20	27.60
CO	101.72	91.61	101.72	91.61
Acetaldehyde	0.33	0.29	0.33	0.29
Benzene	0.11	0.10	0.11	0.10
Ethylbenzene	0.56	0.51	0.56	0.51
Toluene	0.78	0.70	0.78	0.70
Xylene	0.73	0.65	0.73	0.65
Formaldehyde	0.68	0.61	0.68	0.61
Total HAPs	3.188	2.855	3.188	2.855

[1] Point source emissions include transfer points, screens, dryer, mixer, hot screens (AP1), and heater (H1) emissions.

[2] Fugitive emissions include vehicular traffic (VT), open stockpile (OS1), and tank (TK3, TK4) emissions.

[3] Major PSD Source requires an individual pollutant of 250 tpy.

[4] Major Title V Source (WV 45CSR30) requires an individual pollutant of 100 tpy.

[5] An error was discovered in the PTE for PM10 and PM2.5 in the original calculations. Screening emissions were mistakenly left out of the PTE for proposed emissions. These emissions have been added here under this revision.

Kelly Paving, Inc.
HMA Plant 14

Potesta & Associates, Inc.
Project Number 0101-15-0319

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

Existing Emissions [5]

	Point Source [1]				Fugitive [2]			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
Emission Type	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PM	8,017.03	7,215.69	8.67	7.00	79.36	80.75	24.17	25.81
PM_{10}	1,629.38	1,467.12	3.28	2.61	20.49	21.23	6.32	7.13
$PM_{2.5}$	386.12	348.57	1.04	2.00	2.22	2.60	0.75	1.14
VOC	20.10	17.24	20.10	17.24	0.0002	0.007	0.0002	0.007
SO_2	26.08	32.14	26.08	32.14	Not Applicable			
NO_x	30.20	27.60	30.20	27.60				
CO	101.72	91.61	101.72	91.61				
Acetaldehyde	0.330	0.290	0.330	0.290				
Benzene	0.105	0.095	0.105	0.095				
Ethylbenzene	0.560	0.507	0.560	0.507				
Toluene	0.781	0.701	0.781	0.701				
Xylene	0.731	0.651	0.731	0.651				
Formaldehyde	0.681	0.611	0.681	0.611				
Total HAPs	3.188	2.855	3.188	2.855				

Major PSD Source for any regulated air pollutant? [3] NO

Major Title V Source for any regulated air pollutant? [4] NO

	Facility Total			
	Uncontrolled		Controlled	
Emission Type	lb/hr	tons/yr	lb/hr	tons/yr
PM	8,096.39	7,296.44	32.84	32.81
PM_{10}	1,649.87	1,488.35	9.60	9.74
$PM_{2.5}$	388.34	351.17	1.79	3.14
VOC	20.10	17.25	20.10	17.25
SO_2	26.08	32.14	26.08	32.14
NO_x	30.20	27.60	30.20	27.60
CO	101.72	91.61	101.72	91.61
Acetaldehyde	0.33	0.29	0.33	0.29
Benzene	0.11	0.10	0.11	0.10
Ethylbenzene	0.56	0.51	0.56	0.51
Toluene	0.78	0.70	0.78	0.70
Xylene	0.73	0.65	0.73	0.65
Formaldehyde	0.68	0.61	0.68	0.61
Total HAPs	3.188	2.855	3.188	2.855

[1] Point source emissions include transfer points (TP1-12), dryer, mixer, hot screens (AP1), and heater (H1) emissions.

[2] Fugitive emissions include vehicular traffic (VT), open stockpile (OS1), and tank (TK3, TK4) emissions.

[3] Major PSD Source requires an individual pollutant above 250 tpy.

[4] Major Title V Source (WV 45CSR30) requires an individual pollutant above 100 tpy.

[5] Existing permitted emissions from permit application prepared under POTESTA Project No. 0101-13-0061.

Materials Handling

Defining transfer point empirical expression variables, where:

$e = k(0.0032)(U/5)^{1.3}/(M/2)^{1.4}$

			Conversion Factors
e =	?	lb/ton	
k for TPM =	0.74	dimensionless	NA
k for PM10	0.35	dimensionless	2.1
k for PM2.5	0.053	dimensionless	14
U =	10	mean wind speed, mph	
M =	3.0	material moisture content, %	
M_{BH} =	1.0	material moisture content, %	

Calculating transfer point emission factor for PM:

e =	0.0033	lb/ton
e_{BH} =	0.0154	lb/ton

Calculating transfer point emission factor for PM_{10}:

e =	0.0016	lb/ton
e_{BH} =	0.0073	lb/ton

Calculating transfer point emission factor for $PM_{2.5}$:

e =	0.0002	lb/ton
e_{BH} =	0.0001	

Emission factor calculation taken from AP-42 Section 13.2.4
Aggregate Handling and Storage Piles

The emission calculations are based on worst case scenario with the facility operating at 250 tph production rate. If a zero has been entered, the transfer point is not in the worst case scenario.

Production rate:	250	tph	450,000 tpy
RAP:	65	tph	180,000 tpy
Maximum RAP rate:	40	percent	

Rounding = 2
or 3

ID	Description	Transfer Capacities		e (U)	Control Device		Emissions Uncontrolled		Emissions Controlled	
		tons/hour	tons/year	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
TP1	truck/barge to stockpiles	250	450,000	0.0033	MD	0	0.83	0.74	0.83	0.74
TP2	endloader to bins B1-6	250	450,000	0.0033	MD	0	0.83	0.74	0.83	0.74
TP3	bins to BC1-BC6	250	450,000	0.0033	N	0	0.83	0.74	0.83	0.74
TP4	BC1-6 to BC7	250	450,000	0.0033	N	0	0.83	0.74	0.83	0.74
TP5	BC7 to S1	250	450,000	0.0033	N	0	0.83	0.74	0.83	0.74
TP6	S1 to BC8	250	450,000	0.0033	N	0	0.83	0.74	0.83	0.74
TP6A	S1 to Ground	0	0	0.0033	N	0	0.00	0.00	0.00	0.00
TP7	BC8 to AP1	250	450,000	0.0033	N	0	0.83	0.74	0.83	0.74
TP8	endloader to bins B7-8	65	180,000	0.0033	MD	0	0.21	0.30	0.21	0.30
TP9	B7 to S2	65	180,000	0.0033	N	0	0.21	0.30	0.21	0.30
TP10	S2 to BC9	65	0	0.0033	N	0	0.21	0.00	0.21	0.00
TP10A	S2 to BC11	65	180,000	0.0033	N	0	0.21	0.30	0.21	0.30
TP11	BC9 to BT1	65	0	0.0033	PE	50	0.21	0.00	0.11	0.00
TP12	B8 to S3	65	0	0.0033	N	0	0.21	0.00	0.21	0.00
TP13	S3 to BC10	65	180,000	0.0033	N	0	0.21	0.30	0.21	0.30
TP13A	S3 to BC11	65	0	0.0033	N	0	0.21	0.00	0.21	0.00
TP14	BC10 to MD1	65	0	0.0033	PE	50	0.21	0.00	0.11	0.00
TP15	AP1 (EL1) to BT1 or MD1	250	450,000	0.0033	FE	80	0.83	0.74	0.17	0.15
TP16	BT1 to B9 or truck	See HMA Loading Page								
TP17	MD1 to B9	See Silo Filling Page								
TP18	B9 to SLC1	See Silo Filling Page								
TP19	SLC1 to BS1/BS2	See Silo Filling Page								
TP20	BS1/BS2 to truck	See HMA Loading Page								
TP21	BH1 to SC1	10	12,500	0.0154	FE	80	0.15	0.10	0.03	0.02
TP22	SC1 to AP1	10	12,500	0.0154	FE	80	0.15	0.10	0.03	0.02
TP23	BC11 to BC12	65	180,000	0.0033	N	0	0.21	0.00	0.21	0.00
TP24	BC12 to CR1	65	180,000	0.0033	N	0	0.21	0.30	0.21	0.30
TP25	CR1 to BC13	65	180,000	0.0033	FE	80	0.21	0.30	0.04	0.06
TP26	BC13 to S3	65	180,000	0.0033	N	0	0.21	0.30	0.21	0.30
						PM	9.67	8.21	8.40	7.23
						PM10	4.58	3.89	3.98	3.43
						PM2.5	0.69	0.59	0.60	0.52

* A zero input for a transfer point indicates the transfer point is not included in the maximum emission scenario.

Kelly Paving, Inc.
HMA Plant 14

Potesta & Associates, Inc.
Project Number 0101-15-0319

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

Crushing and Screening

Emission Factors

	PM	PM10	Source
Primary Crushing	0.002	0.001	DAQ G40-C Emissions Worksheet
Secondary & Tertiary Crushing	0.0054	0.0024	DAQ G40-C Emissions Worksheet
Screening	0.025	0.0087	DAQ G40-C Emissions Worksheet

Totals for Crushing and Screening

PM				PM10				PM2.5			
Uncontrolled		Controlled		Uncontrolled		Controlled		Uncontrolled		Controlled	
(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
9.86	10.62	1.98	2.13	3.48	3.74	0.69	0.75	0.72	0.76	0.14	0.15

Screen Emissions

Screen Identification	Screen Type	ID	Throughput		Control Type	Contol Efficiency	PM				PM10				PM2.5[1]			
							Uncontrolled		Controlled		Uncontrolled		Controlled		Uncontrolled		Controlled	
			(ton/hr)	(tons/yr)		(%)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
Aggregate Screen	Single Deck	S1	250	450,000	PE+WS	80	6.25	5.63	1.25	1.13	2.18	1.96	0.44	0.39	0.45	0.40	0.09	0.08
RAP Screen (2)	Single Deck	S2	65	180,000	PE+WS	80	1.63	2.25	0.33	0.45	0.57	0.78	0.11	0.16	0.12	0.16	0.02	0.03
RAP Screen (2)	Single Deck	S3	65	180,000	PE+WS	80	1.63	2.25	0.33	0.45	0.57	0.78	0.11	0.16	0.12	0.16	0.02	0.03
						Totals:	9.51	10.13	1.91	2.03	3.32	3.52	0.66	0.71	0.69	0.72	0.13	0.14

Crusher Emissions

Crusher Identification	Crusher Type	ID	Throughput		Control Type	Control Efficiency (%)	PM				PM10				PM2.5[1]			
							Uncontrolled		Controlled		Uncontrolled		Controlled		Uncontrolled		Controlled	
			(ton/hr)	(tons/yr)			(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
In-Line Crusher	Tertiary	CR1	65	180,000	FE		0.35	0.49	0.07	0.10	0.16	0.22	0.03	0.04	0.03	0.04	0.01	0.007

(1) PM2.5 equal to PM/14:
Particle size multipliers (k) AP42 Section 13.2.4-4 (11/06):

PM	PM10	PM2.5
0.74	0.35	0.053
Conversion Factor	2.1	14

(2) It is assumed that all RAP material will pass through screening twice for a total of 360,000 tons/yr.

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Hot Mix Asphalt Plant Dryer Batch Mix and Drum Mix (AP1)

Permitted emission levels of each pollutant will be the higher emission value between the fuel types.

Production Rate: 250 tons/hr
450,000 tons/year

Rounding to 2

Criteria Pollutants

Emission Type	Natural Gas		Controlled (Fabric Filter) No. 2 Fuel Oil		No. 4, 6 Fuel Oil and Recycled Oil		Uncontrolled All Fuel Types	
	Batch Emission Factor [1] (lb/ton of HMA)	Drum Emission Factor [1] (lb/ton of HMA)	Batch Emission Factor [1] (lb/ton of HMA)	Drum Emission Factor [1] (lb/ton of HMA)	Batch Emission Factor [1] (lb/ton of HMA)	Drum Emission Factor [1] (lb/ton of HMA)	Batch Emission Factor (lb/ton of HMA)	Drum Emission Factor (lb/ton of HMA)
PM	0.042	0.033	0.042	0.033	**0.042**	0.033	32	28
PM_{10}	0.027	0.023	0.027	0.023	**0.027**	0.023	4.5	6.5
$PM_{2.5}$ [5]	0.014	0.007	0.014	0.007	**0.014**	0.007	0.27	1.54
VOC	0.0082	0.032	0.0082	0.032	**0.036**	0.032	NA	NA
SO_2 [1]	0.0046	0.0034	0.088	0.011	**0.088**	0.058	NA	NA
NO_x	0.025	0.026	0.12	0.055	**0.12**	0.055	NA	NA
CO	0.40	0.13	0.40	0.13	**0.40**	0.13	NA	NA

Emission Type	Controlled Emissions		Uncontrolled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
PM	10.50	9.45	8,000	7,200
PM_{10}	6.75	6.08	1,625	1,463
$PM_{2.5}$	3.50	3.15	385	347
VOC	9.00	8.10	NA	
SO_2	22.00	19.80		
NO_x	30.00	27.00		
CO	100.00	90.00		

Hazardous/Toxic Pollutants - Controlled and Uncontrolled Emissions will be the same.

Emission Type	All Fuel Types			
	Batch Emission Factor [1] (lb/ton of HMA)	Drum Emission Factor [1] (lb/ton of HMA)	Emissions lb/hr	Emissions tons/yr
Acetaldehyde	0.00032	**0.0013**	0.33	0.29
Benzene	0.00028	**0.00039**	0.10	0.09
Ethylbenzene	**0.0022**	0.00024	0.55	0.50
Formaldehyde	0.00074	**0.0031**	0.78	0.70
Hexane		**0.00092**	0.23	0.21
Quinone	0.00027		0.07	0.06
Toluene	0.0010	**0.0029**	0.73	0.65
Xylene	**0.0027**	0.0002	0.68	0.61
Non-PAH HAPs Total [2]	0.0075	**0.0095**	2.38	2.14
PAH HAPs Total [2]	0.00023	**0.00088**	0.22	0.20

HAP Total

	lb/hr	tons/yr
VOC HAPs	2.60	2.34
Metal HAPs	0.0313	0.0280
Total HAPs	2.63	2.37

Metals Emissions

Emission Type	All Fuel Types			
	Batch Emission Factor [3] lb/ton HMA	Drum Emission Factor [4] lb/ton HMA	Emissions lb/hr	Emissions tons/yr
Antimony		**1.80E-07**	0.0001	0.0001
Arsenic	4.60E-07	**5.60E-07**	0.0001	0.0001
Barium	1.50E-06	**5.80E-06**	0.0015	0.0013
Beryllium	1.50E-07		0.0001	0.0001
Cadmium	**6.10E-07**	4.10E-07	0.0002	0.0001
Cobalt		**2.60E-08**	0.0001	0.0001
Chromium	5.70E-07	**5.50E-06**	0.0014	0.0012
Hexavalent Chromium	4.80E-08	**4.50E-07**	0.0002	0.0002
Copper	2.80E-06	**3.10E-06**	0.0008	0.0007
Lead	8.90E-07	**1.50E-05**	0.0038	0.0034
Manganese	6.90E-06	**7.70E-06**	0.0019	0.0017
Mecury	4.10E-07	**2.60E-06**	0.0007	0.0006
Nickel	3.00E-06	**6.30E-05**	0.0158	0.0142
Phosphorus	4.90E-07	**2.80E-05**	0.0070	0.0063
Silver		**4.80E-07**	0.0001	0.0001
Selenium	**4.90E-07**	3.50E-07	0.0001	0.0001
Thallium		**4.10E-09**	0.0001	0.0001
Zinc	6.80E-06	**6.10E-05**	0.0153	0.0137
		HAP Metals	0.0313	0.0280
		Total Metals	0.0806	0.0441

Rounding to 4

1. Emission factors taken from AP-42 Tables 11.1-9 and 11.1-10. Highest value between natural gas, No.2 fuel , and waste oil fired dryers shown. Waste oil emission factors used when No. 4 and No. 6 fuel oil emission factors were not listed.
2. Includes HAPs not shown in the table. Highest value between natural gas, No.2 fuel , and waste oil fired dryers shown.
3. AP42 Table 11.1-11.
4. AP42 Table 11.1-12. Highest value between natural gas, No.2 fuel , and waste oil fired dryers shown.
5. PM2.5 conversion factor calculated based on AP-42 Section 11.1-2 (Batch) and 11.1-4 (Drum) Summary of Particle Size Distribution:

	Controlled		Uncontrolled	
	Batch	Drum	Batch	Drum
$PM_{2.5}$ (% of PM)	33%	21%	0.83%	5.5%

6. PM and PM10 based on AP42 Tables 11.1-1 and 11.1-3.

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Asphalt Heater (H1)

Permitted emission levels of each pollutant will be the higher emission value between the fuel types.

Design Heat Input	2	MMBtu/hour
Fuel Usage:	0.002	MMscf/hr Natural Gas
	0.014	1,000 gal/hour No. 2 Fuel Oil (Heating Value 140,000 Btu/gal)
	0.013	1,000 gal/hour Recycled Oil, No. 4 and No. 6 Fuel Oil (Heating Value 150,000 Btu/gal)
Hours of operation:	6,048	hr/yr
% Sulfur:	0.5	No. 2 Fuel Oil and Recycled Oil
	2.0	No. 4 Fuel Oil
	2.0	No. 6 Fuel Oil

Criteria Air Pollutants

	Emission Factor				
Emission Type	Natural Gas (lb/MM scf gas)	No. 2 Fuel Oil (lb/1,000 gal)	No. 4 Fuel Oil (lb/1,000 gal)	No. 6 Fuel Oil (lb/1,000 gal)	Recycled Oil (lb/1,000 gal)
PM	7.6	2.00	7.00	10.00	**51.20**
$PM_{10}/PM_{2.5}$	7.6	1.08	1.08	4.81	**40.8**
VOC	**5.5**	0.34	0.34	1.13	0.34
SO_2	0.6	71	300	**314**	73.5
NO_x	**100**	20	20	55	19
CO	**84**	5	5	5	5

Rounding to 2

Emission Type	Emissions	
	lb/hr	tons/yr
PM	0.67	2.01
$PM_{10}/PM_{2.5}$	0.53	1.60
VOC	0.01	0.03
SO_2	4.08	12.34
NO_x	0.20	0.60
CO	0.17	0.51

Hazardous Air Pollutants Rounding to 3

Emission Type	Natural Gas Emission Factor (lb/MM scf gas)	No. 2/4/6 Fuel Oil and Recycled Oil Emission Factor (lb/1,000 gal)	Emissions	
			lb/hr	tons/yr
Benzene	**0.0021**	0.000214	0.001	0.001
Ethylbenzene	NA	**0.0000636**	0.001	0.001
Toluene	0.0034	**0.0062**	0.001	0.001
Xylene	NA	**0.000109**	0.001	0.001
Formaldehyde	**0.075**	0.033	0.001	0.001
		Total	0.005	0.005

If calculated value is < 0.001, number is rounded up to 0.001, to avoid reporting zero.

Emission Factors for Natural Gas from AP-42 Section 1.4.
Emission Factors for No. 2, 4, 6 Fuel Oil from AP-42 Section 1.3.
Emission Factors for Recycled Oil from AP-42 Sections 1.11 and 1.3.
Assume PM2.5 = PM10.

Silo Filling

Emission Factor (EF) Calculations for silo filling from AP42 Table 11.1-14 (March, 2004).

V = -0.5 asphalt volatility
T = 325 degrees Fahrenheit HMA mix temperature

PM Emission Factor: $EF = 0.000332 + 0.00105\ (-V)\ e^{((0.0251)(T+460)-20.43)}$

PM EF = 0.000586 lb/ton

PM_{10} Emission Factor is 23% of PM Table 11.1-4 Particle Size Distribution

PM_{10} EF = 0.000135 lb/ton

$PM_{2.5}$ Emission Factor is 5.5% of PM Table 11.1-4 Particle Size Distribution

PM_{10} EF = 0.000032 lb/ton

VOC Emission Factor: $VOC\ EF = TOC\ EF = 0.0504\ (-V)\ e^{((0.0251)(T+460)-20.43)}$
(VOC EF = TOC EF from AP42 Table 11.1-16, footnote a.)
VOC EF = 0.012187 lb/ton

CO Emission Factor: $CO\ EF = 0.00488\ (-V)\ e^{((0.0251)(T+460)-20.43)}$

CO EF = 0.001180 lb/ton

AP42 Table 11.1-16 referenced for HAP emission factors and calculated according to footnote a.

Rounding to 3
or 2

Emission Type	ID	Number of Transfers	Transfer Capacities tons/hour	Transfer Capacities tons/year	EF lb/T	Control Device Type	Control Device Effic(%)	Emissions Uncontrolled (lb/hr)	Emissions Uncontrolled (tpy)	Emissions Controlled (lb/hr)	Emissions Controlled (tpy)
PM	TP17, 18, and 19	3	250	450,000	0.000586	PE/PE/FE*	60	0.44	0.40	0.18	0.16
PM_{10}	TP17, 18, and 19	3	250	450,000	0.000135	PE/PE/FE*	60	0.10	0.09	0.04	0.04
$PM_{2.5}$	TP17, 18, and 19	3	250	450,000	0.000032	PE/PE/FE*	60	0.02	0.02	0.01	0.01
VOC	TP17, 18, and 19	3	250	450,000	0.012187	N	0	9.14	8.23	9.14	8.23
CO	TP17, 18, and 19	3	250	450,000	0.001180	N	0	0.88	0.80	0.88	0.80
Hazardous Air Pollutants (HAPs)											
Benzene	TP17, 18, and 19	3	250	450,000	3.90E-06	N	0	0.003	0.003	0.003	0.003
Ethylbenzene	TP17, 18, and 19	3	250	450,000	4.63E-06	N	0	0.003	0.003	0.003	0.003
Toluene	TP17, 18, and 19	3	250	450,000	7.56E-06	N	0	0.006	0.005	0.006	0.005
Xylene	TP17, 18, and 19	3	250	450,000	3.13E-05	N	0	0.023	0.021	0.023	0.021
Formaldehyde	TP17, 18, and 19	3	250	450,000	8.41E-05	N	0	0.063	0.057	0.063	0.057
Total HAPs	TP17, 18, and 19	3	250	450,000	1.58E-04	N	0	0.119	0.107	0.119	0.107

*The control efficiencies (PE = 50%, FE = 80%) are averaged over the 3 transfer points.

TOTALS FOR SILO FILLING AND LOADOUT

Emission Type	Emissions Uncontrolled (lb/hr)	Emissions Uncontrolled (tpy)	Emissions Controlled (lb/hr)	Emissions Controlled (tpy)
PM	0.70	0.52	0.31	0.22
PM_{10}	0.16	0.12	0.07	0.06
$PM_{2.5}$	0.03	0.03	0.02	0.02
VOC	11.09	9.11	11.09	9.11
CO	1.55	1.10	1.55	1.10
HAPS				
Benzene	0.004	0.004	0.004	0.004
Ethylbenzene	0.009	0.006	0.009	0.006
Toluene	0.010	0.007	0.010	0.007
Xylene	0.033	0.026	0.033	0.026
Formaldehyde	0.065	0.058	0.065	0.058
Total HAPs	0.142	0.119	0.142	0.119

Plant Loadout

Emission Factor (EF) Calculations for loadout from AP11.1-14 (March, 2004).

V = -0.5 asphalt volatility
T = 325 degrees Fahrenheit HMA mix temperature

PM Emission Factor: $EF = 0.000181 + 0.00141 (-V) e^{((0.0251)(T+460)-20.43)}$

PM EF = 0.00052194 lb/ton

PM_{10} Emission Factor is 23% of PM Table 11.1-4 Particle Size Distribution

PM_{10} EF = 0.000120 lb/ton

$PM_{2.5}$ Emismission Factor is 5.5% of PM Table 11.1-4 Particle Size Distribution

$PM_{2.5}$ EF = 0.000029 lb/ton

VOC Emission Factor: $VOC\ EF = 0.94 * TOC\ EF = 0.94 * (0.0172 (-V) e^{((0.0251)(T+460)-20.43)})$
TOC EF = 0.00416 lb/ton
VOC EF = 0.00391 lb/ton

CO Emission Factor: $CO\ EF = 0.00558 (-V) e^{((0.0251)(T+460)-20.43)}$

CO EF = 0.00135 lb/ton

AP42 Table 11.1-16 referenced for HAP emission factors and calculated according to footnote a.

Rounding to 3
or 2

Emission Type	ID	Number of Transfers[1]	Transfer Capacities		EF	Control Device		Emissions			
								Uncontrolled		Controlled	
			tons/hour	tons/year	lb/T	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	TP16 and 20	2	250	450,000	0.000522	PE	50	0.26	0.12	0.13	0.06
PM_{10}	TP16 and 20	2	250	450,000	0.000120	PE	50	0.06	0.03	0.03	0.02
$PM_{2.5}$	TP16 and 20	2	250	450,000	0.000029	PE	50	0.01	0.01	0.01	0.01
VOC	TP16 and 20	2	250	450,000	0.00391	N	0	1.95	0.88	1.95	0.88
CO	TP16 and 20	2	250	450,000	0.00135	N	0	0.67	0.30	0.67	0.30
Hazardous Air Pollutants (HAPs)											
Benzene	TP16 and 20	2	250	450,000	0.000002	N	0	0.001	0.001	0.001	0.001
Ethylbenzene	TP16 and 20	2	250	450,000	0.000012	N	0	0.006	0.003	0.006	0.003
Toluene	TP16 and 20	2	250	450,000	0.000009	N	0	0.004	0.002	0.004	0.002
Xylene	TP16 and 20	2	250	450,000	0.000020	N	0	0.010	0.005	0.010	0.005
Formaldehyde	TP16 and 20	2	250	450,000	0.000004	N	0	0.002	0.001	0.002	0.001
							Total HAPs	0.023	0.012	0.023	0.012

1. There are two possible loadouts: TP16 batch and TP20 silo loadout for hourly emissions; however, full facility yearly throughput is through one transfer.
If calculated value is < 0.001, number is rounded up to 0.001, to avoid reporting zero.

Kelly Paving, Inc.
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By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

Vehicle Activity (VT)

Unpaved Haulroads

Emission Factor Equation from AP-42 Section 13.2.2, Unpaved Roads (November 2006):
$e = k\,(s/12)^a\,(W/3)^b\,[(365-p)/365]$

	PM	PM10	PM2.5	
k =	4.9	1.5	0.15	constant, AP-42 Table 13.2.2-2 (dimensionless)
s =	5	5	5	%, surface material silt content
W =	28	28	28	tons, mean vehicle weight
a =	0.7	0.9	0.9	constant, AP-42 Table 13.2.2-2 (dimensionless)
b =	0.45	0.45	0.45	constant, AP-42 Table 13.2.2-2 (dimensionless)
p =	157	157	157	no. days/year with at least 0.01in of rain
e =	4.13	1.06	0.11	lb/VMT

Rounding to 2

Pollutant	No. of Vehicles		Miles Per Trip	Control Device		Emissions			
						Uncontrolled		Controlled	
	Per Hour	Per Year	(mi)	Type	Effic(%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	27	53,760	0.71	WT	70	78.84	78.49	23.65	23.55
PM10	27	53,760	0.71	WT	70	20.24	20.15	6.07	6.05
PM2.5	27	53,760	0.71	WT	70	2.10	2.09	0.63	0.63

Material transported:

	Aggregates/ RAP	Product	Endloader	Total/Mean
TPH	250	250	250	750
TPY	450,000	450,000	450,000	1,350,000
Load Weight (tons)	20	20	14	N/A
Trucks Per Hour	13	13	1	27
Trucks Per Year	22,500	22,500	8,760	53,760
Mean Vehicle Weight (tons)	25	25	37	28
Trip Distance	0.65	0.65	1	0.71
Roundup to =	0	Assuming no partial loads.		

Asphalt and RAP trucks have a load weight of 20 tons and empty weight of 15 tons; therefore, the mean weight of vehicle is 25 tons.
Endloader has a load weight of 14 tons and and empty weight of 30 tons; therefore the mean weight of endloader is 37 tons.
Endloader is estimated to travel one mile per hour for emission estimate purposes.

Stockpiles

Reference: DAQ G10-D Emissions Spreadsheet.

$$E = 1.7 (s/1.5) ((365-p)/235) (f/15)$$

E =	?	Emissions factor, pound per day per acre, (lb/day/acre)
s =	5	Silt content of material (%)
p =	157	number of days with at least 0.254 mm (0.01 in.) of precipitation per year
f =	10	Time wind speed exceeds 12 mph (%)
E =	**3.344**	lb/day/acre

Rounding to 2

Stockpile ID	Stockpile Material	Base Area (acres)	Control Device	Control Eff. (%)	Uncontrolled Emissions lb/hr	Uncontrolled Emissions tpy	Controlled Emissions lb/hr	Controlled Emissions tpy
OS1	Aggregate, RAP	3.7	N	0	0.52	2.26	0.52	2.26
				PM	0.52	2.26	0.52	2.26
				PM10	0.25	1.08	0.25	1.08
				PM2.5	0.12	0.51	0.12	0.51

TANKS

TK1 and TK2 are asphaltic cement tanks. The emissions are negligible due to the low volatilization of liquid. TK 3 and 4 will store No. 2, 4, and 6 Fuel Oil and Recycled Oil for heater and dryer. Emissions were estimated by the EPA Tanks 4.0 program.

ID	Material Stored	Capacity gallons	VOC Emissions lb/hr	VOC Emissions ton/yr
TK1	Asphaltic Cement	30,000	Negligible	Negligible
TK2	Asphaltic Cement	18,500	Negligible	Negligible
TK3	Fuel Tank	12,000	0.0001	0.0038
TK4	Fuel Tank	10,000	0.0001	0.0034
		Total	0.0002	0.007

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

Summary of CO2e Emissions

The facility has two (2) combustion sources: Dryer (AP1) and Asphalt Heater (H1). Both are capable of combusting multiple fuels.

Facility Emissions

Emission Unit	CO2e (metric tons)	CO2 (short tons)	Exceed 25,000 metric tons CO2e?	Exceed 100,000 tons CO2e?	Short tons/metric ton
AP1 (NG)	9,171	10,109.02	NO	NO	1.1023
AP1 (2FO)	12,823	14,135.14	NO	NO	
AP1 (4FO)	13,010	14,340.86	NO	NO	
AP1 (6FO)	**13,020**	**14,352.28**	NO	NO	
AP1 (UO)	12,830	14,142.76	NO	NO	
H1 (NG)	660	727.44	NO	NO	
H1 (2FO)	867	955.82	NO	NO	
H1 (4FO)	864	952.66	NO	NO	
H1 (6FO)	**889**	**979.54**	NO	NO	
H1 UO)	788	868.72	NO	NO	
Worst Case	**13,909**	**15,332**	NO	NO	

NG = natural gas
2FO = No. 2 fuel oil
UO = Used oil

Kelly Paving, Inc.
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Potesta & Associates, Inc.
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By: JJD
Date: 09/23/15

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CO2e Emissions from Natural Gas

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Natural Gas	9,161.86	0.17	0.02	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	9,161.86	3.63	5.36	**9,171**

AP1 Burner	
168,093,385	scf of natural gas burned per year
93,385	scf of natural gas burned per hour
384,000	btu per ton of asphalt
1,028	btu/scf

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Natural Gas Combustion

1.00E-03	conversion factor from kilograms to metric tons	
168,093,385	cubic feet of natural gas burned annually	
1.028E-03	HHV MMBtu/scf	natural gas high heating value (HHV) from Table C-1
53.02	kg CO2/MMBtu	natural gas emission factor from Table C-1
1.00E-03	kg CH4/MMBtu	natural gas emission factor from Table C-2
1.00E-04	kg N2O/MMBtu	natural gas emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

Kelly Paving, Inc.
HMA Plant 14

Potesta & Associates, Inc.
Project Number 0101-15-0319

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

CO2e Emissions from No. 2 Fuel Oil Combustion

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
No. 2 Fuel	12,780.29	0.52	0.10	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	12,780.29	10.89	32.14	**12,823**

AP1 Burner	
1,252,174	gallons burned per year
696	gallons burned per hour
384,000	btu per ton of asphalt
138,000	btu/gallon

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

No. 2 Fuel Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
1,252,174	gallons of No. 2 fuel oil burned	
0.138	HHV MMBtu/gal	No. 2 fuel oil high heating value (HHV) from Table C-1
73.96	kg CO2/MMBtu	No. 2 fuel oil emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	No. 2 fuel oil emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	No. 2 fuel oil emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

CO2e Emissions from No.4 Fuel Oil Combustion

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Used Oil	12,966.91	0.52	0.10	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	12,966.91	10.89	32.14	**13,010**

AP1 Burner	
1,183,562	gallons burned per year
658	gallons burned per hour
384,000	btu per ton of asphalt
146,000	btu/gallon

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Used Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
1,183,562	gallons of used oil burned annually	
0.146	HHV MMBtu/gal	high heating value (HHV) from Table C-1
75.04	kg CO2/MMBtu	emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

CO2e Emissions from No.6 Fuel Oil Combustion

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Used Oil	12,977.28	0.52	0.10	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	12,977.28	10.89	32.14	**13,020**

AP1 Burner	
1,152,000	gallons burned per year
640	gallons burned per hour
384,000	btu per ton of asphalt
150,000	btu/gallon

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Used Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
1,152,000	gallons of used oil burned annually	
0.150	HHV MMBtu/gal	used oil high heating value (HHV) from Table C-1
75.10	kg CO2/MMBtu	used oil emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	used oil emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	used oil emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

Kelly Paving, Inc.
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CO2e Emissions from Used Oil Combustion

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Used Oil	12,787.20	0.52	0.10	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	12,787.20	10.89	32.14	**12,830**

AP1 Burner	
1,280,000	gallons burned per year
711	gallons burned per hour
384,000	btu per ton of asphalt
135,000	btu/gallon

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Used Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
1,280,000	gallons of used oil burned annually	
0.135	HHV MMBtu/gal	used oil high heating value (HHV) from Table C-1
74.00	kg CO2/MMBtu	used oil emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	used oil emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	used oil emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

Kelly Paving, Inc.
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CO2e Emissions from Natural Gas

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Natural Gas	659.29	0.01	0.00	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	659.29	0.26	0.39	**660**

H1
12,096,000 scf of natural gas burned per year

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Natural Gas Combustion

1.00E-03	conversion factor from kilograms to metric tons	
12,096,000	cubic feet of natural gas burned annually	
1.028E-03	HHV MMBtu/scf	natural gas high heating value (HHV) from Table C-1
53.02	kg CO2/MMBtu	natural gas emission factor from Table C-1
1.00E-03	kg CH4/MMBtu	natural gas emission factor from Table C-2
1.00E-04	kg N2O/MMBtu	natural gas emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

Kelly Paving, Inc.
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Date: 09/23/15

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CO2e Emissions from No. 2 Fuel Oil Combustion

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
No. 2 Fuel	864.20	0.04	0.01	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	864.20	0.74	2.17	**867**

H1
84,672 gallons No. 2 fuel oil burned per year

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

No. 2 Fuel Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
84,672	gallons of No. 2 fuel oil burned	
0.138	HHV MMBtu/gal	No. 2 fuel oil high heating value (HHV) from Table C-1
73.96	kg CO2/MMBtu	No. 2 fuel oil emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	No. 2 fuel oil emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	No. 2 fuel oil emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

Kelly Paving, Inc.
HMA Plant 14

Potesta & Associates, Inc.
Project Number 0101-15-0319

By: JJD
Date: 09/23/15

Checked By: PEW
Date: 10/12/15

CO2e Emissions from No. 4 Fuel Oil Combustion

H1
78,624 gallons burned per year

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Used Oil	861.39	0.03	0.01	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	861.39	0.72	2.14	**864**

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Used Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
78,624	gallons of used oil burned annually	
0.146	HHV MMBtu/gal	high heating value (HHV) from Table C-1
75.04	kg CO2/MMBtu	emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

Kelly Paving, Inc.
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Potesta & Associates, Inc.
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By: JJD
Date: 09/23/15

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CO2e Emissions from No. 6 Fuel Oil Combustion

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Used Oil	885.70	0.04	0.01	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	885.70	0.74	2.19	**889**

H1
78,624 gallons burned per year

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Used Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
78,624	gallons of used oil burned annually	
0.150	HHV MMBtu/gal	high heating value (HHV) from Table C-1
75.10	kg CO2/MMBtu	emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

Kelly Paving, Inc.
HMA Plant 14

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CO2e Emissions from No. Used Oil Combustion

H1
78,624 gallons burned per year

Potential Emissions (Metric Tons)				
Fuel Type	CO2	CH4	N2O	
Used Oil	785.45	0.03	0.01	
100 yr GWP*	1	21	310	**Total CO2e**
CO2e	785.45	0.67	1.97	**788**

*Global Warming Potentials (GWP) Referenced from 40CFR§98 Subpart A Table A-1

CO2 = 1 x10-3*mass of fuel*HHV*EF (Eq. C-2a)
CH4 or N2O = 1 x10-3*mass of fuel*HHV*EF (Eq. C-9a)

Used Oil Combustion

1.00E-03	conversion factor from kilograms to metric tons	
78,624	gallons of used oil burned annually	
0.135	HHV MMBtu/gal	high heating value (HHV) from Table C-1
74.00	kg CO2/MMBtu	emission factor from Table C-1
3.00E-03	kg CH4/MMBtu	emission factor from Table C-2
6.00E-04	kg N2O/MMBtu	emission factor from Table C-2

Equations, HHV, and emission factors from 40CFR§98 Subpart C unless otherwise noted.

ATTACHMENT O

MONITORING/RECORDKEEPING/REPORTING/TESTING PLANS

ATTACHMENT O

MONITORING/RECORDKEEPING/ REPORTING/TESTING PLANS

Kelly Paving, Inc. plans to follow the monitoring, recordkeeping, reporting, and testing required by the issued permit.

ATTACHMENT P

PUBLIC NOTICE

Attachment P – Public Notice

AIR QUALITY PERMIT NOTICE

Notice of Application

Notice is given that Kelly Paving, Inc. has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a modification to Regulation 13 Permit R13-2340C to revise a Hot Mix Asphalt plant located on WV Route 2 near St. Mary's, Pleasants County, West Virginia. The latitude and longitude coordinates are: 39.4434 and -81.1296.

The applicant estimates the increased potential to discharge the following Regulated Air Pollutants from the facility will be: PM of 2.58 tons per year (tpy), PM10 of 1.63 tpy, and PM2.5 of 0.28 tpy.

Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, 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 (PLEASE INSERT DAY) day of November, 2015.

By: Kelly Paving, Inc.
Wade Hamm
Executive Vice President
3570 South River Road
PO Box 1585
Zanesville, Ohio 43702-1585