May 31, 2017

Copper City Asphalt, LLC.
P.O. Box 269
Belgrade, MT 59714

Dear Mr. Leipheimer:

Montana Air Quality Permit #5179-00 is deemed final as of May 31, 2017, by the Department of Environmental Quality (Department). All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

Craig Henrikson P.E.
Environmental Engineer
Air Quality Bureau
(406) 444-6711

JM:CH
Enclosure

Montana Department of Environmental Quality
Air, Energy & Mining Division

Montana Air Quality Permit #5179-00

Copper City Asphalt, LLC
P.O. Box 269
Belgrade, MT 59714

May 31, 2017

MONTANA AIR QUALITY PERMIT

Issued To: Copper City Asphalt, LLC
P.O. Box 269
Belgrade, MT 59714

MAQP: #5179-00
Application Complete: 3/20/17
Preliminary Determination Issued: 4/12/17
Department Decision Issued: 5/15/17
Permit Final: 5/31/17

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Copper City Asphalt, LLC (CCA), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Permitted Equipment

CCA proposes to install and operate a portable drum mix-asphalt plant and associated equipment up to 200 tons per hour (TPH) maximum production capacity. A complete list of permitted equipment is contained in Section I.A of the permit analysis.

B. Plant Location

The CCA hot-mix asphalt plant will initially be located at Section 16, Township 3 North, Range 8 West, in Silver Bow County, Montana. However, MAQP #5179-00 applies while operating at any location within Montana, except within those areas having a Department of Environmental Quality (Department)-approved permitting program or tribal lands. *A Missoula County air quality permit will be required for locations within Missoula County.* Further, Addendum #1 and MAQP #5179-00 apply to the CCA facility while operating at any location in or within 10 kilometers (km) of any particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}) nonattainment area during the summer months (April 1 through September 30) and at approved locations in or within 10 km of certain PM_{10} nonattainment areas during the winter season (October 1 – March 31).

Section II: Conditions and Limitations

A. Operational and Emission Limitations

1. Asphalt plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic foot (gr/dscf) (ARM 17.8.752, ARM 17.8.340 and 40 Code of Federal Regulations (CFR) 60 Subpart I).

2. CCA shall not cause or authorize to be discharged into the atmosphere, from the asphalt plant, stack emissions that exhibit 20% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.752, ARM 17.8.340 and 40 CFR 60 Subpart I).

3. CCA shall not cause or authorize to be discharged into the atmosphere from systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems, any visible emissions that exhibit opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.752, ARM 17.8.340, and 40 CFR 60 Subpart I).

4. All visible emissions from any non-New Source Performance Standard (NSPS) affected equipment shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

5. CCA shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.752).

6. CCA shall treat all unpaved portions of the haul roads, access roads, aggregate piles, waste piles and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.5 (ARM 17.8.752).

7. CCA shall install, operate, and maintain a baghouse for control of particulate matter per the manufacturer's recommendations. A device to measure the pressure drop (magnahelic gauge, manometer etc.) on the control device (baghouse) must be installed and maintained. Pressure drop must be measured in inches of water (ARM 17.8.749 and ARM 17.8.752).

8. CCA shall be limited to a maximum of 200,000 tons of asphalt production during any rolling 12-month period (ARM 17.8.749 and ARM 17.8.1204).

9. The asphalt production rate shall be limited to the average production rate during the last source test demonstrating compliance (ARM 17.8.749).

10. CCA shall not operate, or have on site, more than two diesel-fired engine/generator sets at any given time (associated with this permit) and the maximum rated combined design capacity of the diesel engines driving the generator sets shall not exceed 806 brake-horsepower (bhp) (ARM 17.8.749).

11. Operation of the hot-mix asphalt plant, including each of the diesel-fired engine/generator sets, shall not exceed 1,000 hours during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

12. CCA shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart I, Standards of Performance for Hot Mix Asphalt Facilities (ARM 17.8.340 and 40 CFR 60, Subpart I).

13. CCA shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart IIII, Standards of Performance for Stationary

Compression Ignition Internal Combustion Engines and 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, for any applicable diesel-fired engine (ARM 17.8.340, 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

14. If the permitted equipment is used in conjunction with any other equipment owned or operated by CCA, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons of emissions during any rolling 12-month time period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).

B. Testing Requirements

1. Within 60 days after achieving maximum production, but no later than 180 days after initial start-up, an Environmental Protection Agency (EPA) Methods 1-5 source test shall be performed on the asphalt drum mix dryer exhaust stack to demonstrate compliance with Section II.A.1. An EPA Method 9 opacity test shall be performed in conjunction with all particulate tests to demonstrate compliance with the conditions specified in Section II.A.2, II.A.3, and II.A.4. Testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart I).

2. Since asphalt production will be limited to the average production rate during the compliance source test, it is suggested that the test be performed at the highest practical production rate (ARM 17.8.749).

3. Pressure across the baghouse must be recorded at least once daily whenever the asphalt plant is operated and kept on site according to Section II.A.7 (ARM 17.8.749).

4. Pressure drop across the baghouse must be recorded during the compliance source test and reported as part of the test results (ARM 17.8.749).

5. CCA may retest at any time in order to test at a higher production rate (ARM 17.8.749).

6. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

7. The Department may require further testing (ARM 17.8.105).

C. Operational Recordkeeping and Reporting Requirements

1. If the asphalt plant is moved to another location, an Intent to Transfer Form must be sent to the Department. In addition, a Public Notice Form for Change of Location must be published in a newspaper of general circulation in

the area where the transfer is to be made, at least 15 days prior to the move. The Intent to Transfer Form and the proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.765).

2. CCA shall maintain on-site records showing daily hours of operation, daily production rates, and daily pressure drop for the last 12-months. The records compiled in accordance with this permit shall be maintained by CCA as a permanent business record for at least 5 years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant for inspection by the Department (ARM 17.8.749).

3. CCA shall maintain on-site records showing any inspection, maintenance and repairs on the rotary drum baghouse (ARM 17.8.749).

4. CCA shall supply the Department with annual production information for all emission points, as required, by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources identified in the most recent emission inventory report and sources identified in Section I.A of the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in units, as required by the Department. This information may be used for calculating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

5. CCA shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745 that would include *the addition of a new emissions unit*, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

6. CCA shall document, by month, the total plant production of asphalt in tons. By the 25th day of each month, CCA shall total the production of asphalt for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.8. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. CCA shall document, by month, the hours of operation of the diesel engine/generator sets and hours of operation of the asphalt plant. By the 25th day of each month, CCA shall total the hours of operation of the engine/generator sets for the previous month. The monthly information will

be used to verify compliance with the rolling 12-month limitation in Section II.A.11. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

8. CCA shall annually certify that its emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emissions inventory information (ARM 17.8.749 and ARM 17.8.1204).

D. Notification

1. Within 30 days of commencement of construction of any New Source Performance Standard (NSPS)-affected equipment, CCA shall notify the Department of the date of commencement of construction of the affected equipment (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart I).

2. Within 15 days of the actual start-up date of any NSPS-affected equipment, CCA shall submit written notification to the Department of the initial start-up date of the affected equipment (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart I).

3. Within 15 days of the actual start-up date of any non-NSPS-affected equipment, CCA shall submit written notification to the Department of the initial start-up date of the affected equipment (ARM 17.8.749).

Section III: Addendum

CCA shall comply with all applicable conditions and limitations contained in Addendum #1 to MAQP #5179-00 (ARM 17.8.749).

Section IV: General Conditions

A. Inspection – CCA shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if CCA fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving CCA of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided for in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by CCA may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

I. The Department may modify the conditions of this permit based on local conditions of any future site. These factors may include, but are not limited to, local terrain, meteorological conditions, proximity to residences, etc.

J. CCA shall comply with the conditions contained in this permit while operating in any location in Montana, except within those areas that have a Department-approved permitting program or areas considered tribal lands.

Montana Air Quality Permit (MAQP) Analysis
Copper City Asphalt LLC
MAQP #5179-00

I. Introduction/Process Description

Copper City Asphalt LLC (CCA), proposes to install and operate a portable rotary drum mix asphalt plant with a maximum rated design capacity up to 200 tons per hour (TPH) of asphalt production.

A. Permitted Equipment

The following list of permitted equipment is provided for reference, as portions of MAQP #5179-00 are written de minimis friendly, whereby operational flexibility is provided so that alternate equipment may be utilized as long as maximum permitted capacities are not exceeded. See Section II of the MAQP for specific equipment limitations and/or conditions. Equipment permitted under this action includes, but is not limited to the following:

- 1982 Portable asphalt plant with baghouse for particulate control
- Two Diesel-Fired Engine/Generators Sets Totaling a combined 806 Brake-Horse Power
- Hot Oil Heater
- 3-Bin Cold Feeder
- 20,000 Gallon Asphalt Cement Tank
- Asphalt 60 Ton Silo
- 60 Ton Lime Silo with Feed Conveyor
- 8,700 Gallon Burner Fuel Tank
- 1,000 Gallon Diesel Fuel Tank
- 500 Gallon Hot Oil Fuel Tank
- Collecting Feed Conveyor
- Screen
- Plant Feed Conveyor
- Hot Bucket Elevator with Feed Chute
- And Associated Equipment

B. Source Description

For a typical operational set-up, aggregate materials are taken from the on-site aggregate stockpiles and dumped via a front end loader and dumped into the cold aggregate feed bins. The cold aggregate is then transferred from the cold aggregate feed bins via conveyor to the rotary drum. The cold aggregate is dried and heated within the drum mixer. The dryer exhaust vents to the baghouse. Hot asphalt is transferred to the asphalt silo and then loaded into trucks for transport to project sites.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies, where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

   CCA shall comply with all requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

CCA must comply with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions are taken to control emissions of airborne particulate matter. (2) Under this rule, CCA shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter in excess of the amount set forth in this section.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this section.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank truck or trailer is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). Based on the information submitted by CCA the portable drum mix-asphalt plant and associated equipment are subject to NSPS (40 CFR 60), as follows:

   a. 40 CFR 60, Subpart A – General Provisions. This subpart applies to all equipment or facilities subject to an NSPS subpart as listed below:

   b. 40 CFR 60, Subpart I – Standards of Performance of Hot Mix Asphalt Facilities. In order for an asphalt plant to be subject to this subpart, the facility must meet the definition of an affected facility and, the affected equipment must have been constructed, reconstructed, or modified after August 31, 1983. Based on the information submitted by CCA, the asphalt plant equipment to be used under MAQP #5179-00 may be subject to this subpart because the facility is a hot mix asphalt facility.

c. 40 CFR 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants. In order for screening equipment to be subject to this subpart, the facility must meet the definition of an affected facility and, the affected equipment must have been constructed, reconstructed, or modified after August 31, 1983. Based on the information submitted by CCA, the screening equipment to be used under MAQP #5179-00 is not subject to this subpart because the date of manufacture of the equipment was before August 31, 1983 and because the facility will not perform crushing and grinding.

d. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart.

Based on the information submitted by CCA, the CI ICE equipment to be used under MAQP #5179-00 is potentially subject to his subpart if it remains at a single location for more than 12 months.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories. Based on the information submitted by CCA the diesel-fired engine associated with MAQP #5179-00 is applicable to NESHAP (40 CFR 63), as follows:

a. 40 CFR 63, Subpart A – General Provisions. This subpart applies to all equipment or facilities subject to a NESHAP subpart as listed below:

b. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. A RICE is considered stationary if it remains or will remain at the permitted location for more than 12 months, or a shorter period of time for an engine located at a seasonal source. A seasonal source remains at a single location on a permanent basis (at least 2 years) and operates 3 months or more each year. Based on the information submitted by CCA, the RICE equipment to be used under this permit may be subject to this subpart because they are an area source of HAP emissions and the engine may remain at the same home pit location for more than 12 consecutive months.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. CCA shall submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. CCA submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an MAQP or permit modification to construct, modify, or use any asphalt plant, crusher or screen that has the potential to emit (PTE) greater than 15 tons per year (TPY) of any pollutant. CCA has a PTE greater than 15 TPY of oxides of nitrogen (NO_X), and CO, therefore, an MAQP is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit Program.

4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the MAQP program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. This rule requires that a permit application be submitted prior to installation, alteration or use of a source. CCA submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. CCA submitted an affidavit of publication of public notice for the February 19, 2017, issue of the *Montana Standard*, a newspaper of general circulation in the town of Butte, Silver Bow County.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving CCA of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An MAQP shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An MAQP may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An MAQP may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. (1) This rule states that an MAQP may be transferred from one location to another if the Department receives a complete notice of intent to transfer location, the facility will operate in the new location for less than 1 year, the facility will comply with the FCAA and the Clean Air Act of Montana, and the facility complies with other applicable rules. (2) This rule states that an MAQP may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modification--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

   This facility is not a major stationary source because it is not a listed source and the facility's PTE is less than 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule, or

   c. PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #5179-00 for CCA the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 TPY for any single HAP and less than 25 TPY of combined HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to a current NSPS (40 CFR 60, Subpart I and potentially subject to 40 CFR 60, Subpart IIII).

   e. This facility is potentially subject to a current NESHAP (40 CFR 63, Subpart ZZZZ).

   f. This source is not a Title IV affected source.

   g. This source is not a solid waste combustion unit.

   h. This source is not an EPA designated Title V source.

   CCA requested federally-enforceable permit limitations to remain a minor source of emissions with respect to Title V. Based on these limitations, the Department determined that this facility is not subject to the Title V Operating Permit Program. However, in the event that the EPA makes minor sources that are subject to NSPS obtain a Title V Operating Permit, this source will be subject to the Title V Operating Permit Program.

   i. ARM 17.8.1204(3). The Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's PTE.

      i. In applying for an exemption under this section the owner or operator of the facility shall certify to the Department that the source's PTE does not require the source to obtain an air quality operating permit.

      ii. Any source that obtains a federally enforceable limit on PTE shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal required by ARM 17.8.1204(3)(a) shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this subchapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

III. BACT Determination

A BACT determination is required for each new or modified source. CCA shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

A. Asphalt Drum Mixer

The Department reviewed relevant control options, as well as previous BACT determinations. The following control options were reviewed by the Department in order to make the following BACT determinations:

- Fabric Filter Baghouse
- Electrostatic Precipitator
- Cyclone
- Wet Scrubber

All of the listed technologies are deemed technically feasible for this application. Technical feasible control options, in order the highest control efficiency to the lowest control efficiency base on PM control are as follows:

1. Fabric Filter Baghouse (99 – 99.9% efficient) (EPA Fact Sheet EPA-452/F-03-025, 07/15/03)

2. Electrostatic Precipitator (99 – 99.9% efficient) (EPA Fact Sheet EPA-452/F-03-028, 07/15/03)

3. Cyclone (up to 99% efficient) (EPA Fact Sheet EPA-452/F-03-005, 07/15/03)

4. Wet Scrubber (70 – greater than 99% efficient) (EPA Fact Sheet EPA-452/F-03-0017, 07/15/03)

CCA has proposed to use a baghouse for the control of PM from the exhaust of the 1982 Barber Green portable drum mixer. Because CCA proposes to use the highest rated control device (baghouse), no further economic analysis is needed. The control option selected has control technology and a control cost comparable to other recently permitted similar sources and is capable of achieving the appropriate emissions standards. Operating and maintaining a baghouse will constitute BACT for the asphalt drum mixer. All asphalt drum mixer emissions are limited to 0.04 grains per dry standard cubic foot (gr/dscf) for particulate and 20 percent opacity in accordance with 40 CFR 60, Subpart I. While operating in or within 10 km of a PM_{10} nonattainment area, CCA must meet a 10 percent opacity limit. CCA shall install and operate a device to measure the pressure drop (magnehelic gauge, manometer, etc.) across the baghouse.

B. Diesel Generators

Due to the limited amount of emissions produced by the diesel-fired engines used in association with MAQP #5179-00 and the lack of cost effective add-on controls, such add-on controls would be cost prohibitive. Therefore, the Department determined that proper operation and maintenance with no add-on controls would constitute BACT for the diesel-fired engines.

In addition, any existing or new diesel-fired engine would likely be required to comply with the federal engine emission limitations including EPA Tiered emission standards for non-road engines (40 CFR Parts 89 and 1039), NSPS emission limitations for stationary compression ignition engines (40 CFR 60, Subpart IIII), or National Emissions Standards for Hazardous Air Pollutant Sources for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ). Therefore, the Department has determined that compliance with applicable federal standards and proper operation and maintenance of the engines constitutes BACT for this engine.

C. Fugitive Emissions

CCA must take reasonable precautions to limit the fugitive emissions of airborne particulate matter on haul roads, access roads, parking lots, and the general plant area. Reasonable precautions include treating all unpaved portions of the haul roads, access roads, parking lots, or the general plant area with water and/or chemical dust suppressant, as necessary. Using water and/or chemical dust suppressant to comply with the reasonable precautions limitation will be considered BACT.

The control options selected contain control equipment and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

	Emissions Tons/Year [PTE]							
Emission Source	PM	PM_{10}	$PM_{2.5}$	PM Cond.	CO	NOx	SO_2	VOC
Hot-Mix Asphalt Plant	4.50	2.30	2.23	1.94	13.00	5.50	5.80	3.20
Aggregate Handling & Storage Piles	1.00	0.47	0.07	--	--	--	--	--
Aggregate Conveying	0.03	0.08	0.00	--	--	--	--	--
Lime Silo transfer & Conveying	0.01	0.01	0.01	--	--	--	--	--
Asphalt Storage & Handling	0.06	0.06	0.06		0.12	--	--	1.22
Asphalt Tank Heater	0.02	0.02	0.02	0.01	0.03	0.73	0.73	0.00
Asphalt Load-Out	0.05	0.05	0.05		0.13	--		0.42
2 Cat Engines Total of 806 bhp	0.89	0.89	0.89	0.01	2.74	12.52	0.83	1.01
Screen	0.22	0.07	0.01					
Unpaved Roadways	10.98	3.03	0.30	--	--	--	--	
Emissions Excluding Roads	6.77	3.95	3.34	1.96	16.02	18.75	7.36	5.85

a. Emission Inventory reflects enforceable limits on hours of operation and production output.

CO, carbon monoxide

NO_X, oxides of nitrogen

PM, particulate matter

PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less

$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less

SO_2, oxides of sulfur

VOC, volatile organic compounds

PM Cond, Condensable Particulate matter

Hot Mix Asphalt Plant with Baghouse [SCC 3-05-002-55] 1752000 tons/year (Maximum)
200000 tons/year (Restricted Maximum)

Production Rate: 200 Tons/Hour (Maximum)

Operating Schedule: 1000 Hours/Year (Restricted Maximum)

Dryer fuel Configuration: #Waste Oil Assumed
Power Plant: 806 bhp Diesel Generator (Asphalt Plant)
Moisture estimated at 10%

Air Flow[Volume] 41,000.00 ACFM (Source: Application)
Temp = 150 Deg F, Rankine = 610, Pressure at 5580 Feet = 24.5 STP = 29.92 at 528 R, inches
Std. Volumetric Flow rate Correction (acfm → scfm) V1 = V2 * (P2/P1) * (T1/T2) 29059.8 scfm (wet)
Particulate Emissions: Dryer Stack NSPS Based 26153.81 dscfm

PM Emissions (controlled):

Emission Rate	0.04 gr/dscf [40 CFR 60 Subpart I, NSPS Limit]						
Calculations	(0.04 gr/dscf) * (26,153.81 dscfm) * (60 min/hr) * (0.000143 lb/gr) =			8.97	lbs/hr	107.6	lbs/day
	(8.97 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			4.48	TPY		
				49.00	lbs/day	0.5654	g/sec

Particulate Emissions: Emission Factor Determination

PM Emissions (controlled):

Emission Factor	0.045 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]						
Calculations	(0.045 lbs/ton) * (200 tons/hour) =			9.00	lbs/hr	108	lbs/day
	(9.00 lbs/hr) * (1000 hours/year) * (0.0005 tons/lbs) =			4.50	TPY		0.0005
				49.18	lbs/day	0.5675	g/sec

PM_{10} Emissions (controlled):

Emission Factor	0.023 lbs/ton Processed [AP-42 Table 11.1-3, 3/04 Used PM10 for Fabric Filter]						
Calculations	(0.023 lbs/ton) * (200 tons/hour) =		2.23	4.60	lbs/hr	55.2	
	(4.60 lbs/hr) * (1000 hours/year) * (0.0005 tons/lbs) =			2.30	TPY		
		(Corrected to Match PM2.5 Calculation)		25.14	lbs/day	0.2901	g/sec
Filterable PM (Controlled)		(Since PM2.5 cannot exceed PM10)					

Emission Factor	0.014 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]						
Calculations	(0.014 lbs/ton) * (200 tons/hour) =			2.80	lbs/hr		
	(2.80 lbs/hr) * (1000 hours/year) * (0.0005 tons/lbs) =			1.40	TPY		
				15.30	lbs/day		

Condensable PM (Controlled)

Emission Factor	0.0194 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]						
Calculations	(0.0194 lbs/ton) * (200 tons/hour) =			3.88	lbs/hr		
	(3.88 lbs/hr) * (1000 hours/year) * (0.0005 tons/lbs) =			1.94	TPY		
				21.20	lbs/day		

$PM_{2.5}$ Emissions (controlled): = (21 Percent of Filterable Plus Condensables) 21% From Fabric Filter Table 11.1-4

Emission	0.02234 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]						

Factor				
Calculations	(0.02234 lbs/ton) * (200 tons/hour) =		4.47	lbs/hr
	(4.47 lbs/hr) * (1000 hours/year) * (0.0005 tons/lbs) =		2.23	TPY
			24.42	lbs/day

CO Emissions:

Emission Factor	0.13	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]

Calculations	(0.13 lbs/ton) * (200 tons/hr) =	26.00	lbs/hr
	(26.00 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	13.00	TPY
		142.08	lbs/day

NO_X Emissions:

Emission Factor	0.055	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]

Calculations	(0.055 lbs/ton) * (200 tons/hr) =	11.00	lbs/hr
	(11.00 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	5.50	TPY
		60.11	lbs/day

SO_2 Emissions:

Emission Factor	0.0580	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]

Calculations	(0.058 lbs/ton) * (200 tons/hr) =	11.60	lbs/hr
	(11.60 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	5.80	TPY
		63.39	lbs/day

VOC Emissions:

Emission Factor	0.032	lbs/ton processed	[AP-42 Table 11.1-8, 3/04; EF based on Waste Oil]

Calculations	(0.032 lbs/ton) * (200 tons/hr) =	6.40	lbs/hr
	(6.40 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	3.20	TPY
		34.97	lbs/day

CH4 Emissions (Uncontrolled):

Emission Factor	0.012	lbs/ton Asphalt Product	[AP-42 Table 11.1-8, 3/04]

Calculations	(0.012 lbs/ton) * (200 tons/hr) =	2.40	lbs/hr
	(2.40 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	1.20	TPY
		13.11	lbs/day

CO2 Emissions (Uncontrolled):

Emission Factor	33.000	lbs/ton Asphalt Product	[AP-42 Table 11.1-7, 3/04]

Calculations	(33 lbs/ton) * (200 tons/hr) =	6600.00	lbs/hr
	(6,600.00 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	3300.00	TPY
		36065.57	lbs/day

CO2e Emissions (Uncontrolled):

Emission Factor	21.000	Global Warming Potential	(USEPA 40 CFR 98, Subpart A - Table A-1)

Calculations	(21 GWP) * (1.2 TPY) =	25.20	TPY
CO2 e Total	(3300 tpy) + (25.2 tpy) =	3325.20	TPY

HAP Emissions (Controlled)

Emission Factor	0.009	lbs/ton Asphalt Product	AP-42 Table 11.1-10, 3/04 - #2 Fabric Filter Factor

Calculations	(0.0087 lbs/ton) * (200 tons/hr) =	1.74	lbs/hr
	(1.74 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	0.87	TPY
		9.51	lbs/day

Aggregate Handling & Storage Piles

Process Rate:	200	tons/hour
Number of Piles:	2	pile Transfers [Pile formation Load-in & Pile Load-out to bins]
Operating Hours:	1000	hour/year

Particulate Emissions: [AP-42 13.2.4, 11/06]

Emission Factor: $EF = k (0.0032) * (U/5)^{1.3} / (M / 2)^{1.4}$

where:	EF, Emission Factor = lbs Emitted / ton Processed		
	k, Dimensionless Particle Size Multiplier PM =	0.74	[AP-42 13.2.4, 11/06]
	k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
	k, Dimensionless Particle Size Multiplier $PM_{2.5}$ =	0.053	[AP-42 13.2.4, 11/06]
	U, Mean Wind Speed (mph) =	9.3	[estimate]
	M, Material Moisture Content (%) =	2.1	[AP-42 13.2.4-1, 11/06]

PM Emissions:

Emission Factor	$EF = 0.74 * (0.0032) * (9.3/5)^{1.3} / (2.1 / 2)^{1.4}$ =	0.0050	lbs/ton	
Calculations	(0.0050 lbs/ton) * (200 tons/hr) * (2 pile) =		1.99	lbs/hr
	(1.99 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		1.00	TPY
			10.88	lbs/day

PM_{10} Emissions:

Emission Factor	$EF = 0.35 * (0.0032) * (9.3/5)^{1.3} / (2.1 / 2)^{1.4}$ =	0.0024	lbs/ton	
Calculations	(0.0024 lbs/ton) * (200 tons/hr) * (2 pile) =		0.94	lbs/hr
	(0.94 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.47	TPY
			5.14	lbs/day

$PM_{2.5}$ Emissions:

Emission Factor	$EF = 0.053 * (0.0032) * (9.3/5)^{1.3} / (2.1 / 2)^{1.4}$ =	0.0004	lbs/ton	
Calculations	(0.0004 lbs/ton) * (200 tons/hr) * (2 pile) =		0.14	lbs/hr
	(0.14 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.07	TPY
			0.78	lbs/day

Aggregate Conveying [SCC 3-05-020-06]

Process Rate:	200	tons/hour
Number of Transfers:	2	Conveyor Transfers [Based on process flow diagram]
Operating Hours:	1000	hours/year

PM Emissions (controlled):

Emission Factor	0.00014	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00014 lbs/ton) * (200 tons/hr) * (2 Transfers) =		0.06	lbs/hr
	(0.06 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.03	TPY
			0.31	lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00005	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000046 lbs/ton) * (200 tons/hr) * (2 Transfers) =		0.02	lbs/hr
	(0.02 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
			0.10	lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00001	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000013 lbs/ton) * (200 tons/hr) * (2 Transfers) =		0.01	lbs/hr
	(0.01 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.00	TPY
			0.03	lbs/day

Lime Silo Product transfer & Conveying SCC 3-05-016-24

Process Rate:	200	tons/hour
Operating Hours:	1000	hours/year

PM Emissions (controlled): (Fabric Filter on Lime Silo Assumed)

Emission Factor	0.000088	lbs/ton transferred	[AP-42 Table 11.17.-4-2, 8/04]	
Calculations	(0.000088 lbs/ton) * (200 tons/hr) =		0.02	lbs/hr
	(0.02 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
			0.10	lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.000088	lbs/ton transferred	[AP-42 Table 11.17.-4, 8/04]	
Calculations	(0.000088 lbs/ton) * (200 tons/hr) * (2 Transfers) =		0.02	lbs/hr
	(0.02 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
			0.10	lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000088	lbs/ton transferred	[AP-42 Table 11.17.-2, 8/04]	
Calculations	(0.000088 lbs/ton) * (200 tons/hr) * (2 Transfers) =		0.02	lbs/hr
	(0.02 lbs/hr) * (1000 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
			0.10	lbs/day

Asphalt Storage & Silo Filling [SCC 3-05-002-13]

Process Rate:	200	tons/hour
Operating Schedule:	1000	hours/year

Particulate Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (200 tons/hr) =	0.12	lbs/hr

	(0.12 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.06	TPY
		0.64	lbs/day

PM_{10} Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (200 tons/hr) =	0.12	lbs/hr
	(0.12 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.06	TPY
		0.64	lbs/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (200 tons/hr) =	0.12	lbs/hr
	(0.12 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.06	TPY
		0.64	lbs/day

CO Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor	EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) =	0.0012	lbs/ton HMA
Calculations	(0.0012 lbs/ton) * (200 tons/hr) =	0.24	lbs/hr
	(0.24 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.12	TPY
		1.29	lbs/day

VOC Emissions: [AP-42 Table 11.1-14, 3/04]

Emission Factor $EF = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor	EF = 0.0504 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.0122	lbs/ton HMA
Calculations	(0.0122 lbs/ton) * (200 tons/hr) =	2.44	lbs/hr
	(2.44 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	1.22	TPY
		13.32	lbs/day

Asphalt Heater [SCC 3-05-002-08]

Fuel Type: #2 Diesel, Natural Gas, or Propane
Burner Firing Rate: 1.41 mmBtu/hr (Maximum Design)
Fuel Rate (Diesel) 73.0 lb/hr 10.3 gallons/hr

PM Total

PM(Filterable) plus Condensable PM	0.03	lbs/hr
	0.02	TPY
PM (Filterable PM)	0.19	lbs/day

Emission Factor 2.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]

Calculations	(2 lbs/1000 gal) * (10.3 gals/hr) =	0.02	lbs/hr

	(0.02 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	0.01	TPY
		0.11	lbs/day

Condensable PM

Emission Factor	1.30 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(1.3 lbs/1000 gal) * (10.3 gals/hr) =	0.01	lbs/hr
	(0.01 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	0.01	TPY
		0.07	lbs/day

CO Emissions (uncontrolled)

Emission Factor	5.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(5 lbs/1000 gal) * (10.3 gals/hr) =	0.05	lbs/hr
	(0.05 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	0.03	TPY
		0.28	lbs/day

NO_X Emissions (uncontrolled)

Emission Factor	20.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(20 lbs/1000 gal) * (10.3 gals/hr) =	0.21	lbs/hr
	(0.21 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	0.10	TPY
		1.13	lbs/day

SO_2 Emissions (uncontrolled)

Emission Factor	142.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(142 lbs/1000 gal) *(0.05% S)* (10.3 gals/hr) =	1.46	lbs/hr
	(1.46 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	0.73	TPY
		7.99	lbs/day

VOC Emissions (uncontrolled)

Emission Factor	0.20 lb/1000 gallons [AP-42 Table 1.3-3, 5/10; EF based on Distillate oils]		
Calculations	(0.2 lbs/1000 gal))* (10.3 gals/hr) =	0.00	lbs/hr
	(0.00 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =	0.00	TPY
		0.01	lbs/day

Asphalt Plant Load-Out [SCC 3-05-002-14]

Process Rate:	200	tons/hour
Operating Schedule:	1000	hours/year

Particulate Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =	0.10	lbs/hr
	(0.10 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.05	TPY
		0.57	lbs/day

PM_{10} Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =	0.10	lbs/hr
	(0.10 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.05	TPY
		0.57	lbs/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =	0.10	lbs/hr
	(0.10 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.05	TPY
		0.57	lbs/day

CO Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

CO Emissions:

Emission Factor	EF = 0.00558 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00135	lbs/ton HMA
Calculations	(0.00135 lbs/ton) * (200 tons/hr) =	0.27	lbs/hr
	(0.27 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) =	0.13	TPY
		1.47	lbs/day

VOC Emissions: [AP-42 Table 11.1-14, 3/04]

Emission Factor EF = $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

VOC Emissions:

Emission Factor	EF = 0.0172 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	lbs/ton HMA produced	
Calculations	(0.00416 lbs/ton) * (200 tons/hr) =	0.83	lbs/hr
	(0.83 lbs/hr) * (1000 tons/year) * (0.0005 lbs/ton) = 0.00416	0.42	TPY
		4.55	lbs/day

Diesel Engines:

Diesel Generators (Total 806 bhp)

Engine Rating:	806	bhp		
Operating Hours:	1000	hrs/yr	2.45	MMBtu/hr

Particulate Emissions:

PM Emissions:

Emission	0.0022	lb/hp-hr	[CAT Spec Sheet]

Factor						
Calculations	(0.0022 lb/hp-hr) * (806 hp) =			1.77	lbs/hr	
	(1.77 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			0.89	TPY	
				9.69	lbs/day	

PM_{10} Emissions:

Emission Factor	0.002200	lb/hp-hr	[Cat Spec Sheet]				
Calculations	(0.0022 lb/hp-hr) * (806 hp) =			1.77	lbs/hr	21.2784	
	(1.77 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			0.89	TPY		
				9.69	lbs/day	0.11181	g/sec

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0022000	lb/hp-hr	[Cat Spec Sheet]				
Calculations	(0.0022 lb/hp-hr) * (806 hp) =			1.77	lbs/hr	21.2784	lbs/day
	(1.77 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			0.89	TPY		
				9.69	lbs/day	0.11181	g/sec

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077	MMBtu	[AP-42 3.4-1, 10/96]			
Calculations	(0.0077 lb/mmBtu) * (2.45mmBtu/hr) =			0.02	lbs/hr	
	(0.02 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			0.01	TPY	
				0.10	lbs/day	

CO
Emissions:

Emission Factor	0.00680	lb/hp-hr	[AP 42 3.3-1 10/96]			
Calculations	(0.0068 lb/hp-hr) * (806 hp) =			5.48	lbs/hr	
	(5.48 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			2.74	TPY	
				29.95	lbs/day	

NOx Emissions:

Emission Factor	0.0311	lb/hp-hr	[AP 42 3.3-1 10/96]			
Calculations	(0.03106 lb/hp-hr) * (806 hp) =			25.03	lbs/hr	
	(25.03 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			12.52	TPY	
				136.80	lbs/day	

SO_x Emissions:

Emission Factor	0.00205	lb/hp-hr	[AP-42 3.3-1, 10/96]			
Calculations	(0.0021 lb/hp-hr) * (806 hp) =			1.65	lbs/hr	
	(1.65 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			0.83	TPY	
				9.03	lbs/day	

VOC Emissions:

Emission Factor	0.00251	lb/hp-hr	[AP-42 3.3-1, 6/06]			
Calculations	(0.0025 lb/hp-hr) * (806 hp) =			2.02	lbs/hr	
	(2.02 lbs/hr) * (1000 hrs/yr) * (0.0005 tons/lb) =			1.01	TPY	
				11.06	lbs/day	

Unpaved Roadways (Haul Roads)
Miles Travelled: 5 Miles/Day [Estimate]

Vehicle Weight: < 50 Tons [AP-42 13.2.2.2, 11/06]

Emission Factor	EF = k(s/12)^a * (W/3)^b		4.9	[AP-42 Table 13.2.2-2, 11/06]
	where:	EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)	1.5	[AP-42 Table 13.2.2-2, 11/06]
		k, Empirical Constant PM =	0.15	[AP-42 Table 13.2.2-2, 11/06]
		k, Empirical Constant PM_{10} =	7.1	[AP-42 Table 13.2.2-1, 11/06]
		k, Empirical Constant $PM_{2.5}$ =	50	[Provided Data]
		s, Surface Material Silt Content (%) =	0.7	[AP-42 Table 13.2.2-2, 11/06]
		W, Mean Vehicle Weight (tons) =	0.9	[AP-42 Table 13.2.2-2, 11/06]
		a, Empirical Constant PM =	0.45	[AP-42 Table 13.2.2-2, 11/06]
		a, Empirical Constant PM_{10} /$PM_{2.5}$ =		
		b, Empirical Constant PM - $PM_{2.5}$ =		

PM Emissions: 12.04 lbs/VMT

Emission Factor Calculations	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =		
	(12.04 lbs/VMT) * (5 miles/day) =	60.18	lbs/day
	(60.18 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =	10.98	TPY
		60.2	lbs/day

PM_{10} Emissions: 3.32 lbs/VMT

Emission Factor Calculations	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =		
	(3.32 lbs/VMT) * (5 miles/day) =	16.59	lbs/day
	(16.59 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =	3.03	TPY
		16.6	lbs/day

$PM_{2.5}$ Emissions: 0.33 lbs/VMT

Emission Factor Calculations	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =		
	(0.33 lbs/VMT) * (5 miles/day) =	1.66	lbs/day
	(1.66 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =	0.30	TPY
		1.7	lbs/day

Screening

Process Rate: 200 ton/hr (One Screen)

Operating Hours 1000 hours/year

PM Emissions: (Screening controlled)

Emission Factor	0.0	lbs/ton	[AP-42 Table 11.19.2-2 8/04]	
Calculations	(0.0022 lbs/ton) * (1,000.00 ton/hour) =		0.44	lbs/hr
	(0.44 lbs/hr) * (1000 hrs/yr) *(0.0005 tons/lb) =		0.22	TPY
			1.21	lbs/day

PM10 Emissions:

Emission Factor	0.00074	lbs/ton	[AP-42 Table 11.19.2-2 8/04]	
Calculations	(0.00074 lbs/ton) * (1,000.00 ton/hour) =		0.148	lbs/hr
	(0.15 lbs/hr) * (1000 hrs/yr) *(0.0005 tons/lb) =		0.074	TPY

			0.41	lbs/day

PM2.5 Emissions:

Emission Factor	0.00005 lbs/ton	[AP-42 Table 11.19.2-2 8/04]	
Calculations	(0.00005 lbs/ton) * (1,000.00 ton/hour) =	0.01	lbs/hr
	(0.01 lbs/hr) * (1000 hrs/yr) *(0.0005 tons/lb) =	0.005	TPY
		0.03	lbs/day

V. Existing Air Quality

MAQP #5179-00 is issued for the operation of a portable batch mix asphalt plant to be initially located in Section 16, Township 3 North, Range 8 West, in Silver Bow County, Montana. The city of Butte and some of the immediate surrounding area is classified as nonattainment for the EPA-established National Ambient Air Quality Standards (NAAQS) for PM_{10}. A nonattainment classification means that an area does not meet one or more of the primary or secondary NAAQS for the criteria pollutants designated in the FCAA. CCA is located within 5 miles of Butte and is a source of PM_{10} emissions; however, the Department concludes that the PTE quantity of this pollutant is low enough that it does not negatively impact the ambient air quality in Butte. MAQP #5179-00 applies while operating at any location within Montana, except within those areas having a Department-approved permitting program or tribal lands. *A Missoula County air quality permit will be required for locations within Missoula County*. Further, Addendum #1 and MAQP #5179-00 apply to the CCA facility while operating at any location in or within 10 km of any PM_{10} nonattainment area during the summer months (April through September) and at approved locations in or within 10 km of certain PM_{10} nonattainment areas during the winter season (October 1- March 31).

VI. Ambient Air Quality Impact Analysis

MAQP #5179-00 applies while operating at any location within Montana, except within those areas having a Department-approved permitting program or tribal lands. *A Missoula County air quality permit will be required for locations within Missoula County*. Further, Addendum #1 and MAQP #5179-00 apply to the CCA facility while operating at any location in or within 10 km of any PM_{10} nonattainment area during the summer months (April through September) and approved locations in or within 10 km of certain PM_{10} nonattainment areas during the winter season (October 1- March 31). Addendum 1 includes more stringent conditions and limits that are protective of the PM_{10} nonattainment areas. In the view of the Department, the amount of controlled emissions (Permitted Allowable Emissions) generated by this facility will not exceed any set ambient standard in any given area of operations.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?

YES	NO	
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

Permit Analysis Prepared By: Craig Henrikson
Date: April 5, 2017

Addendum #1
Copper City Asphalt LLC
Montana Air Quality Permit (MAQP) #5179-00

An addendum to MAQP #5179-00 is hereby granted to CCA Asphalt LLC (CCA) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.765, as amended, for the following:

I. Permitted Equipment:

The facility is permitted to operate a hot mix asphalt plant with a maximum operating capacity of 200 tons per hour (TPH). The facility is also permitted to operate up to two diesel-fired engines totaling 806 brake horsepower, and associated conveyors, bins, silos and associated equipment.

II. Seasonal and Site Restrictions – **Winter and Summer Seasons**

Addendum 1 applies to the CCA facility while operating at any location in or within 10 kilometer (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. Additionally, seasonal and site restrictions apply to the facility as follows:

A. During the winter season (October 1-March 31), the only location in or within 10 km of a PM_{10} nonattainment area CCA is allowed to operate at is:

1. Section 16, Township 3 North, Range 8 West, in Silver Bow County, Montana. This location has specifically been modeled for the permitted equipment.

2. Any other site that may be approved, in writing, by the Department of Environmental Quality.

B. During the summer season (April 1-September 30), CCA may operate at any location in or within 10 km of the Libby, Thompson Falls, Kalispell, Whitefish, Columbia Falls, and Butte PM_{10} nonattainment areas.

C. CCA shall comply with the limitations and conditions contained in Addendum 1 to MAQP #5179-00 while operating in or within 10 km of any of the previously listed PM_{10} nonattainment areas. Addendum 1 shall be valid until revoked or modified. The Department reserves the authority to modify Addendum 1 at any time based on local conditions of any future site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

A. Operational Limitations and Conditions – **Summer Season** (April 1- September 30)

1. CCA shall not cause or authorize to be discharged into the atmosphere, from the asphalt plant, stack emissions that exhibit 10% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.749).

2. CCA shall not cause or authorize to be discharged into the atmosphere from systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems, any visible emissions that exhibit opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

3. CCA shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property any visible fugitive emissions that exhibit an opacity of 10% or greater (ARM 17.8.749).

4. CCA shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the 10% opacity limitation in Section III.A.3 (ARM 17.8.749).

B. Operational Limitations and Conditions – **Winter Season** (October 1- March 31)

1. CCA shall not cause or authorize to be discharged into the atmosphere, from the asphalt plant, stack emissions that exhibit 10% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.749).

2. CCA shall not cause or authorize to be discharged into the atmosphere from systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems, any visible emissions that exhibit opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

3. CCA shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property any visible fugitive emissions that exhibit an opacity of 10% or greater (ARM 17.8.749).

4. CCA shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the 10% opacity limitation in Section III.B.3 (ARM 17.8.749).

5. CCA shall be limited to a maximum of 1,600 tons of asphalt production per day (ARM 17.8.749).

6. CCA shall be limited to operating the two diesel-fired engine/generator sets to no more than 8 hours per day when the hot mix plant is operating. If the hot mix plant is not operating, there is no restriction on the hours of the diesel-fired engines (ARM 17.8.749)

C. Operational Reporting Requirements

1. If this asphalt plant is moved to another nonattainment location, an Intent to Transfer form must be sent to the Department and a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area to which the transfer is to be made, at least 15 days prior to the move. The proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.749 and ARM 17.8.765).

2. Production information for the sites covered by this addendum must be maintained for five years and submitted to the Department upon request. The information must include (ARM 17.8.749):

   a. Daily tons of asphalt produced. CCA shall document, by day, the total asphalt production. CCA shall sum the total asphalt production for the previous day to demonstrate compliance with the limitation in Section III.B.5.

   b. Daily hours of operation;

   c. Daily hours of operation and the hp for each engine at the site.

   d. Fugitive dust information consisting of the daily total miles driven on unpaved roads within the operating site for all plant vehicles.

Addendum #1 Analysis
Copper City Asphalt LLC
Montana Air Quality Permit (MAQP) #5179-00

I. Permitted Equipment

Copper City Asphalt LLC (CCA) owns and operates a portable asphalt plant (maximum capacity 200 tons per hour (TPH)). Equipment used at the facility includes, but is not limited to the following:

a. A 200 TPH Barber Green hot mix dryer (batch mix) with baghouse (fired on natural gas, diesel fuel oil, or waste oil),

b. A one (1) Million British Thermal Units per hour (MMBTU)/hour asphalt electric heater,

c. Up to two diesel-fired engine/generator sets with a total combined brake horsepower not to exceed 806 hp, and

d. Associated equipment (elevator, single screen, silos, bins, mixer, conveyors, etc.).

II. Source Description

For a typical operational set-up, aggregate materials are taken from the on-site aggregate stockpiles and dumped via a front end loader and dumped into the cold aggregate feed bins. The cold aggregate is then transferred from the cold aggregate feed bins via conveyor to the rotary drum. The cold aggregate is dried and heated within the drum mixer. The dryer exhaust vents to the baghouse. Hot asphalt is transferred to the asphalt silo and then loaded into trucks for transport to project sites.

III. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

ARM 17.8, Subchapter 7 - Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

A. ARM 17.8.749 Conditions for Issuance of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

B. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or

stack that do not result in an increase of emissions as a result of those changed conditions. A source may not increase its emissions beyond those found in its permit unless the source applies for and receives another permit.

C. ARM 17.8.765 Transfer of Permit. An air quality permit may be transferred from one location to another if:

1. Written notice of intent to transfer location and proof of public notice are sent to the Department;

2. The source will operate in the new location for a period of less than 1 year; and

3. The source will not have any significant impact on any nonattainment area or any Class I area.

IV. Emission Inventory

Summer

	Emissions lbs/Day [PTE]							
Emission Source	PM	PM_{10}	$PM_{2.5}$	PM Cond.	CO	NOx	SO_2	VOC
Hot-Mix Asphalt Plant	216.00	110.40	4.47	67.20	624.00	264.00	278.40	153.60
Aggregate Handling & Storage Piles	15.92	7.53	1.14	--	--	--	--	--
Aggregate Conveying	0.45	0.15	0.04	--	--	--	--	--
Lime Silo transfer & Conveying	0.84	0.84	0.14	--	--	--	--	--
Asphalt Storage & Handling	2.81	2.81	2.81		5.66	--	--	0.03
Asphalt Tank Heater	0.49	0.49	0.49	0.32	1.24	4.94	35.10	0.05
Asphalt Load-Out	2.51	2.51	2.51		6.48	--		19.96
2 Cat Engines Total of 806 bhp	42.56	42.56	42.56	0.45	129.22	600.82	39.66	48.57
Screen	10.56	3.55	0.24					
Unpaved Roadways	60.18	16.59	1.66	--	--	--	--	
Emissions Excluding Roads	292.15	170.84	54.40	67.97	766.59	869.77	353.16	222.21

a. Emission Inventory reflects enforceable limits on hours of operation and production output.

CO, carbon monoxide

NO_X, oxides of nitrogen

PM, particulate matter

PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less

$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less

SO_2, oxides of sulfur

VOC, volatile organic compounds

PM Cond, Condensable Particulate matter

Hot Mix Asphalt Plant with Baghouse [SCC 3-05-002-55] tons/year (Maximum)

Production Rate: 200 Tons/Hour (Maximum)

Operating Schedule: 24 Hours/Day (Restricted Maximum)

Dryer fuel Configuration: #Waste Oil Assumed
Power Plant: 806 bhp Diesel Generator (Asphalt Plant)
Moisture estimated at 10% Modeling g/sec 0.8037 g/sec

Air Flow[Volume] 41,000.00 ACFM (Source: Application)
Temp = 150 Deg F, Rankine = 610, Pressure at 5580 Feet = 24.5 STP = 29.92 at 528 R, inches
Std. Volumetric Flow rate Correction (acfm → scfm) V1 = V2 * (P2/P1) * (T1/T2) 29059.8 scfm (wet)
26153.81 dscfm

Particulate Emissions: Dryer Stack NSPS Based

PM Emissions (controlled):

Emission Rate	0.04	gr/dscf	[40 CFR 60 Subpart I, NSPS Limit]	
Calculations	(0.04 gr/dscf) * (26,153.81 dscfm) * (60 min/hr) * (0.000143 lb/gr) =		8.97	lbs/hr
	(8.97 lbs/hr) * (24 hrs/day) =		215.21	lbs/day

Particulate Emissions: Emission Factor Determination

PM Emissions (controlled):

Emission Factor	0.045	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.045 lbs/ton) * (200 tons/hour) =		9.00	lbs/hr
	(9.00 lbs/hr) * (24 hours/day) =		216.00	lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.023	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04 Used PM10 for Fabric Filter]	
Calculations	(0.023 lbs/ton) * (200 tons/hour) =		4.60	lbs/hr
	(4.60 lbs/hr) * (24 hours/day) =		110.40	lbs/day
			0.58	g/sec

Filterable PM (Controlled)

Emission Factor	0.014	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.014 lbs/ton) * (200 tons/hour) =		2.80	lbs/hr
	(2.80 lbs/hr) * (24 hours/day) =		67.20	lbs/day

Condensable PM (Controlled)

Emission Factor	0.0194	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.0194 lbs/ton) * (200 tons/hour) =		3.88	lbs/hr
	(3.88 lbs/hr) * (24 hours/day) =		93.12	lbs/day

$PM_{2.5}$ Emissions (controlled): = (21 Percent of Filterable Plus Condensables) 21% From Fabric Filter Table 11.1-4

Emission Factor	0.02234	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.02234 lbs/ton) * (200 tons/hour) =		4.47	lbs/hr
	(4.47 lbs/hr) * (24 hours/day) =		0.05	lbs/day

CO Emissions:

Emission Factor	0.13	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]	
Calculations	(0.13 lbs/ton) * (200 tons/hr) =		26.00	lbs/hr
	(26.00 lbs/hr) * (24 hrs/day) =		624.00	lbs/day

NO_X Emissions:

Emission Factor	0.055	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]

Calculations	(0.055 lbs/ton) * (200 tons/hr) =		11.00	lbs/hr
	(11.00 lbs/hr) * (24 hrs/day) =		264.00	lbs/day

SO_2 Emissions:

Emission Factor	0.0580	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]	
Calculations	(0.058 lbs/ton) * (200 tons/hr) =		11.60	lbs/hr
	(11.60 lbs/hr) * (24 hrs/yr) =		278.40	lbs/day

VOC Emissions:

Emission Factor	0.032	lbs/ton processed	[AP-42 Table 11.1-8, 3/04; EF based on Waste Oil]	
Calculations	(0.032 lbs/ton) * (200 tons/hr) =		6.40	lbs/hr
			153.60	lbs/day

CH4 Emissions (Uncontrolled):

Emission Factor	0.012	lbs/ton Asphalt Product	[AP-42 Table 11.1-8, 3/04]	
Calculations	(0.012 lbs/ton) * (200 tons/hr) =		2.40	lbs/hr
	(2.40 lbs/hr) * (24 hrs/day) =		57.60	lbs/day

CO2 Emissions (Uncontrolled):

Emission Factor	33.000	lbs/ton Asphalt Product	[AP-42 Table 11.1-7, 3/04]	
Calculations	(33 lbs/ton) * (200 tons/hr) =		6600.00	lbs/hr
	(6,600.00 lbs/hr) * (24 hrs/day) =		158400.00	lbs/day

CO2e Emissions (Uncontrolled):

Emission Factor	21.000	Global Warming Potential	(USEPA 40 CFR 98, Subpart A - Table A-1)	
Calculations	(21 GWP) * (57.6 TPY) =		1209.60	TPY

CO2 e Total	(158400 tpy) + (1209.6 tpy) =	159609.60	TPY

HAP Emissions (Controlled)

Emission Factor	0.009	lbs/ton Asphalt Product	AP-42 Table 11.1-10, 3/04 - #2 Fabric Filter Factor	
Calculations	(0.0087 lbs/ton) * (200 tons/hr) =		1.74	lbs/hr
	(1.74 lbs/hr) * (24 hrs/day) =		41.76	lbs/day

Aggregate Handling & Storage Piles

Process Rate:	200	tons/hour
Number of Piles:	2	pile Transfers [Pile formation Load-in & Pile Load-out to bins]
Operating Hours:	8	hours/day

Particulate Emissions: [AP-42 13.2.4, 11/06]

Emission Factor $EF = k\ (0.0032) * (U/5)^{\wedge 1.3} / (M / 2)^{\wedge 1.4}$

where: EF, Emission Factor = lbs Emitted / ton Processed

k, Dimensionless Particle Size Multiplier PM =	0.74	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier $PM_{2.5}$ =	0.053	[AP-42 13.2.4, 11/06]
U, Mean Wind Speed (mph) =	9.3	[estimate]
M, Material Moisture Content (%) =	2.1	[AP-42 13.2.4-1, 11/06]

PM Emissions:

Emission Factor	EF = 0.74 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0050	lbs/ton	
Calculations	(0.0050 lbs/ton) * (200 tons/hr) * (2 pile) =		1.99	lbs/hr
	(1.99 lbs/hr) * (24 hrs/day) =		15.92	lbs/day

PM_{10} Emissions:

Emission Factor	EF = 0.35 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0024	lbs/ton	
Calculations	(0.0024 lbs/ton) * (200 tons/hr) * (2 pile) =		0.94	lbs/hr
	(0.94 lbs/hr) * (24 hrs/day) =		7.53	lbs/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.053 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0004	lbs/ton	
Calculations	(0.0004 lbs/ton) * (200 tons/hr) * (2 pile) =		0.14	lbs/hr
	(0.14 lbs/hr) * (24 hrs/day) =		1.14	lbs/day

Aggregate Conveying [SCC 3-05-020-06]

Process Rate:	200	tons/hour
Number of Transfers:	2	Conveyor Transfers [Based on process flow diagram]
Operating Hours:	8	hours/day

PM Emissions (controlled):

Emission Factor	0.00014	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.00014 lbs/ton) * (200 tons/hr) * (2 Transfers) =			0.06	lbs/hr
	(0.06 lbs/hr) * (24 hrs/day) =			0.45	lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00005	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.000046 lbs/ton) * (200 tons/hr) * (2 Transfers) =			0.02	lbs/hr
	(0.02 lbs/hr) * (24 hrs/day) =			0.15	lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00001	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.000013 lbs/ton) * (200 tons/hr) * (2 Transfers) =			0.01	lbs/hr
	(0.01 lbs/hr) * (24 hrs/day) =			0.04	lbs/day

SCC 3-05-016-24

Lime Silo Product transfer & Conveying

Process Rate: 200 tons/hour
Operating Hours: 24 hours/day

PM Emissions (controlled): (Fabric Filter on Lime Silo Assumed)

Emission Factor 0.000088 lbs/ton transferred [AP-42 Table 11.17.-4-2, 8/04]

Calculations (0.000088 lbs/ton) * (200 tons/hr) = 0.04 lbs/hr
(0.04 lbs/hr) * (24 hrs/day) = 0.84 lbs/day

PM_{10} Emissions (controlled):

Emission Factor 0.000088 lbs/ton transferred [AP-42 Table 11.17.-4, 8/04]

Calculations (0.000088 lbs/ton) * (200 tons/hr) * (2 Transfers) = 0.04 lbs/hr
(0.04 lbs/hr) * (24 hrs/day) = 0.84 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor 0.000088 lbs/ton transferred [AP-42 Table 11.17.-2, 8/04]

Calculations (0.000088 lbs/ton) * (200 tons/hr) * (2 Transfers) = 0.02 lbs/hr
(0.02 lbs/hr) * (24 hrs/day) = 0.14 lbs/day

Asphalt Storage & Silo Filling [SCC 3-05-002-13]

Process Rate: 200 tons/hour
Operating Schedule: 24 hours/day

Particulate Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor $EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43)$ = 0.00059 lbs/ton HMA

Calculations (0.00059 lbs/ton) * (200 tons/hr) = 0.12 lbs/hr
(0.12 lbs/hr) * (24 hrs/day) = 2.81 lbs/day

PM_{10} Emissions:

Emission Factor $EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43)$ = 0.00059 lbs/ton HMA

Calculations (0.00059 lbs/ton) * (200 tons/hr) = 0.12 lbs/hr
(0.12 lbs/hr) * (24 hrs/day) = 2.81 lbs/day

$PM_{2.5}$ Emissions:

Emission Factor $EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43)$ = 0.00059 lbs/ton HMA

Calculations	(0.00059 lbs/ton) * (200 tons/hr) =	0.12	lbs/hr
	(0.12 lbs/hr) * (24 hrs/day) =	2.81	lbs/day

CO Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor	EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) =	0.0012	lbs/ton HMA
Calculations	(0.0012 lbs/ton) * (200 tons/hr) =	0.24	lbs/hr
	(0.24 lbs/hr) * (24 hrs/day) =	5.66	lbs/day

VOC Emissions: [AP-42 Table 11.1-14, 3/04]

Emission Factor $EF = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor	EF = 0.0504 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.0122	lbs/ton HMA
Calculations	(0.0122 lbs/ton) * (200 tons/hr) =	2.44	lbs/hr
	(2.44 lbs/hr) * (24 hrs/day) =	0.03	lbs/day

Asphalt Heater [SCC 3-05-002-08]

Fuel Type: #2 Diesel, Natural Gas, or Propane
Burner Firing Rate: 1.41 mmBtu/hr (Maximum Design)
Fuel Rate (Diesel) 73.0 lb/hr 10.3 gallons/hr

PM Total

PM(Filterable) plus Condensable PM	0.03	lbs/hr
	0.82	lbs/day

PM (Filterable PM)

Emission Factor 2.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]

Calculations	(2 lbs/1000 gal) * (10.3 gals/hr) =	0.02	lbs/hr
	(0.02 lbs/hr) * (24 hrs/day) =	0.49	lbs/day

Condensable PM

Emission Factor 1.30 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]

Calculations	(1.3 lbs/1000 gal) * (10.3 gals/hr) =	0.01	lbs/hr
	(0.01 lbs/hr) * (24 hrs/day) =	0.32	lbs/day

CO Emissions (uncontrolled)

Emission Factor 5.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]

Calculations	(5 lbs/1000 gal) * (10.3 gals/hr) =	0.05	lbs/hr
	(0.05 lbs/hr) * (24 hrs/day) =	1.24	lbs/day

NO_X Emissions (uncontrolled)

Emission Factor	20.00	lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]

Calculations	(20 lbs/1000 gal) * (10.3 gals/hr) =	0.21	lbs/hr
	(0.21 lbs/hr) * (24 hrs/day) =	4.94	lbs/day

SO_2 Emissions (uncontrolled)

Emission Factor	142.00	lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]

Calculations	(142 lbs/1000 gal) *(0.05% S)* (10.3 gals/hr) =	1.46	lbs/hr
	(1.46 lbs/hr) * (24 hrs/day) =	35.10	lbs/day

VOC Emissions (uncontrolled)

Emission Factor	0.20	lb/1000 gallons [AP-42 Table 1.3-3, 5/10; EF based on Distillate oils]

Calculations	(0.2 lbs/1000 gal))* (10.3 gals/hr) =	0.002	lbs/hr
	(0.00 lbs/hr) * (24 hrs/day) =	0.05	lbs/day

Asphalt Plant Load-Out [SCC 3-05-002-14]

Process Rate:	200	tons/hour
Operating Schedule:	24	hours/day

Particulate Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =	0.10	lbs/hr
	(0.10 lbs/hr) * (24 hrs/day) =	2.51	lbs/day

PM_{10} Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =	0.10	lbs/hr
	(0.10 lbs/hr) * (24 hrs/day) * =	2.51	TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =	0.10	lbs/hr
	(0.10 lbs/hr) * (24 hrs/day) =	2.51	lbs/day

CO Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

CO Emissions:

Emission Factor	EF = 0.00558 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00135	lbs/ton HMA
Calculations	(0.00135 lbs/ton) * (200 tons/hr) =	0.27	lbs/hr
	(0.27 lbs/hr) * (24 hrs/day) =	6.48	lbs/day

VOC Emissions: [AP-42 Table 11.1-14, 3/04]

Emission Factor: $EF = 0.0172(-V)e^{((0.0251)(T+460)-20.43)}$

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

VOC Emissions:

Emission Factor	EF = 0.0172 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =		lbs/ton HMA produced	
Calculations	(0.00416 lbs/ton) * (200 tons/hr) =		0.83	lbs/hr
	(0.83 lbs/hr) * (24 hrs/day) =	0.00416	19.96	lbs/day

Diesel Engines:

Diesel Generators (Total 806 bhp)

Engine Rating:	806	bhp				
Operating Hours:	24	hrs/day	24	Hrs/Day	2.45	MMBtu/hr

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022	lb/hp-hr	[CAT Spec Sheet]		
Calculations	(0.0022 lb/hp-hr) * (806 hp) =			1.77	lbs/hr
	(1.77 lbs/hr) * (24 hrs/Day) =			42.56	Lbs/day

PM_{10} Emissions:

Emission Factor	0.002200	lb/hp-hr	[Cat Spec Sheet]				
Calculations	(0.0022 lb/hp-hr) * (806 hp) =			1.77	lbs/hr	42.5568	lb/day
	(1.77 lbs/hr) * (24 hrs/day) =			42.56	lbs/day		
				0.2236	g/sec	0.22362	g/sec

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0022000	lb/hp-hr	[Cat Spec Sheet]			
Calculations	(0.0022 lb/hp-hr) * (806 hp) =			1.77	lbs/hr	lbs/day
	(1.77 lbs/hr) * (24 hrs/day) =			42.56	lbs/day	

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077	MMBtu	[AP-42 3.4-1, 10/96]		
Calculations	(0.0077 lb/mmBtu) * (2.45mmBtu/hr) =			0.02	lbs/hr
	(0.02 lbs/hr) * (24 hrs/day) =			0.45	lbs/day

CO Emissions:

Emission Factor	0.00668	lb/hp-hr	[AP-42 3.3-1 10/96]		
Calculations	(0.00668 lb/hp-hr) * (806 hp) =			5.38	lbs/hr
	(5.38 lbs/hr) * (24 hrs/day) =			129.22	lbs/day

NOx Emissions:

Emission Factor	0.0311	lb/hp-hr	[AP42 3.3-1 10/96]		
Calculations	(0.03106 lb/hp-hr) * (806 hp) =			25.03	lbs/hr
	(25.03 lbs/hr) * (24 hrs/day) =			600.82	lbs/day

SO_x Emissions:

Emission Factor	0.00205	lb/hp-hr	[AP-42 3.3-1, 10/96]		
Calculations	(0.0021 lb/hp-hr) * (806 hp) =			1.65	lbs/hr
	(1.65 lbs/hr) * (24 hrs/day) =			39.66	lbs/day

VOC Emissions:

Emission Factor	0.00251	lb/hp-hr	[AP-42 3.3-1, 10/96]		
Calculations	(0.0025 lb/hp-hr) * (806 hp) =			2.02	lbs/hr
	(2.02 lbs/hr) * (24 hrs/day) =			48.57	lbs/day

Unpaved Roadways (Haul Roads)

Miles Travelled:	5	Miles/Day	[Estimate]
Vehicle Weight:	< 50	Tons	[AP-42 13.2.2.2, 11/06]

Emission Factor	EF = $k(s/12)^{a} * (W/3)^{b}$		4.9	[AP-42 Table 13.2.2-2, 11/06]
	where:	EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)	1.5	[AP-42 Table 13.2.2-2, 11/06]
		k, Empirical Constant PM =	0.15	[AP-42 Table 13.2.2-2, 11/06]
		k, Empirical Constant PM_{10} =	7.1	[AP-42 Table 13.2.2-1, 11/06]
		k, Empirical Constant $PM_{2.5}$ =	50	[Provided Data]
		s, Surface Material Silt Content (%) =	0.7	[AP-42 Table 13.2.2-2, 11/06]
		W, Mean Vehicle Weight (tons) =	0.9	[AP-42 Table 13.2.2-2, 11/06]
		a, Empirical Constant PM =	0.45	[AP-42 Table 13.2.2-2, 11/06]
		a, Empirical Constant PM_{10} /$PM_{2.5}$ =		
		b, Empirical Constant PM - $PM_{2.5}$ =		

PM Emissions:		12.04	lbs/VMT		
Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =	12.036			
Calculations	(12.04 lbs/VMT) * (5 miles/day) =			60.18	lbs/day
PM_{10} Emissions:		3.32	lbs/VMT		
Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =	3.317			
Calculations	(3.32 lbs/VMT) * (5 miles/day) =			16.59	lbs/day
$PM_{2.5}$ Emissions:		0.33	lbs/VMT		
Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =	0.332			
Calculations	(0.33 lbs/VMT) * (5 miles/day) =			1.66	lbs/day

Screening

Process Rate:	200	ton/hr	(One Screen)		
Operating Hours	24		hrs/day		
PM Emissions:			(Screening controlled)		
Emission Factor	0.002	lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.0022 lbs/ton) * (200.00 ton/hour) =			0.44	lbs/hr
	(0.44 lbs/hr) * (24 hrs/day) =			10.56	lbs/day
PM10 Emissions:					
Emission Factor	0.00074	lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.00074 lbs/ton) * (200.00 ton/hour) =			0.148	lbs/hr
	(0.15 lbs/hr) * (24 hrs/day) =			3.552	TPY
PM2.5 Emissions:					
Emission Factor	0.00005	lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.00005 lbs/ton) * (200.00 ton/hour) =			0.01	lbs/hr
	(0.01 lbs/hr) * (24 hrs/day) =			0.24	TPY

Winter

Emission Source	Emissions lbs/Day [PTE] PM	PM_{10}	$PM_{2.5}$	PM Cond.	CO	NOx	SO_2	VOC
Hot-Mix Asphalt Plant	72.00	36.80	4.47	22.40	208.00	88.00	92.80	51.20
Aggregate Handling & Storage Piles	15.92	7.53	1.14	--	--	--	--	--
Aggregate Conveying	0.45	0.15	0.04	--	--	--	--	--
Lime Silo transfer & Conveying	0.28	0.28	0.14	--	--	--	--	--
Asphalt Storage & Handling	0.94	0.94	0.94		1.89	--	--	0.01
Asphalt Tank Heater	0.16	0.16	0.16	0.11	0.41	1.65	11.70	0.02
Asphalt Load-Out	0.84	0.84	0.84		2.16	--		6.65
2 Cat Engines Total of 806 bhp	14.19	14.19	14.19	0.15	43.07	200.27	13.22	16.19
Screen	3.52	1.18	0.08					
Unpaved Roadways	60.18	16.59	1.66	--	--	--	--	
Emissions Excluding Roads	108.30	62.07	21.99	22.66	255.53	289.92	117.72	74.07

a. Emission Inventory reflects enforceable limits on hours of operation and production output.

CO, carbon monoxide

NO_X, oxides of nitrogen

PM, particulate matter

PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less

$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less

SO_2, oxides of sulfur

VOC, volatile organic compounds

PM Cond, Condensable Particulate matter

Hot Mix Asphalt Plant with Baghouse [SCC 3-05-002-55] tons/year (Maximum)

Production Rate: 200 Tons/Hour (Maximum)

Operating Schedule: 8 Hours/Day (Restricted Maximum)

Dryer fuel Configuration: #Waste Oil Assumed
Power Plant: 806 bhp Diesel Generator (Asphalt Plant)
Moisture estimated at 10% Modeling g/sec 0.2679 g/sec

Air Flow[Volume] 41,000.00 ACFM (Source: Application)
Temp = 150 Deg F, Rankine = 610, Pressure at 5580 Feet = 24.5 STP = 29.92 at 528 R, inches
Std. Volumetric Flow rate Correction (acfm → scfm) V1 = V2 * (P2/P1) * (T1/T2) 29059.8 scfm (wet)
Particulate Emissions: Dryer Stack NSPS Based 26153.81 dscfm

PM Emissions (controlled):

Emission Rate 0.04 gr/dscf [40 CFR 60 Subpart I, NSPS Limit]
Calculations (0.04 gr/dscf) * (26,153.81 dscfm) * (60 min/hr) * (0.000143 lb/gr) = 8.97 lbs/hr
(8.97 lbs/hr) * (8 hrs/day) = 71.74 lbs/day

Particulate Emissions: Emission Factor Determination

PM Emissions (controlled):

Emission Factor 0.045 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]
Calculations (0.045 lbs/ton) * (200 tons/hour) = 9.00 lbs/hr
(9.00 lbs/hr) * (8 hours/day) = 72.00 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.023	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04 Used PM10 for Fabric Filter]		
Calculations	(0.023 lbs/ton) * (200 tons/hour) =			4.60	lbs/hr
	(4.60 lbs/hr) * (8 hours/day) =			36.80	lbs/day
				0.19	g/sec

Filterable PM (Controlled)

Emission Factor	0.014	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]		
Calculations	(0.014 lbs/ton) * (200 tons/hour) =			2.80	lbs/hr
	(2.80 lbs/hr) * (8 hours/day) =			22.40	lbs/day

Condensable PM (Controlled)

Emission Factor	0.0194	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]		
Calculations	(0.0194 lbs/ton) * (200 tons/hour) =			3.88	lbs/hr
	(3.88 lbs/hr) * (8 hours/day) =			31.04	lbs/day

$PM_{2.5}$ Emissions (controlled): = (21 Percent of Filterable Plus Condensables) 21% From Fabric Filter Table 11.1-4

Emission Factor	0.02234	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]		
Calculations	(0.02234 lbs/ton) * (200 tons/hour) =			4.47	lbs/hr
	(4.47 lbs/hr) * (8 hours/day) =			0.02	lbs/day

CO Emissions:

Emission Factor	0.13	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]		
Calculations	(0.13 lbs/ton) * (200 tons/hr) =			26.00	lbs/hr
	(26.00 lbs/hr) * (8 hrs/day) =			208.00	lbs/day

NO_X Emissions:

Emission Factor	0.055	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]		
Calculations	(0.055 lbs/ton) * (200 tons/hr) =			11.00	lbs/hr
	(11.00 lbs/hr) * (8 hrs/day) =			88.00	lbs/day

SO_2 Emissions:

Emission Factor	0.0580	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on Waste Oil]		
Calculations	(0.058 lbs/ton) * (200 tons/hr) =			11.60	lbs/hr
	(11.60 lbs/hr) * (8 hrs/yr) =			92.80	lbs/day

VOC Emissions:

Emission Factor	0.032	lbs/ton processed	[AP-42 Table 11.1-8, 3/04; EF based on Waste Oil]		
Calculations	(0.032 lbs/ton) * (200 tons/hr) =			6.40	lbs/hr
				51.20	lbs/day

CH4 Emissions (Uncontrolled):

Emission Factor	0.012	lbs/ton Asphalt Product	[AP-42 Table 11.1-8, 3/04]		
Calculations	(0.012 lbs/ton) * (200 tons/hr) =			2.40	lbs/hr
	(2.40 lbs/hr) * (8 hrs/day) =			19.20	lbs/day

CO2 Emissions (Uncontrolled):

Emission Factor	33.000	lbs/ton Asphalt Product	[AP-42 Table 11.1-7, 3/04]		
Calculations	(33 lbs/ton) * (200 tons/hr) =			6600.00	lbs/hr
	(6,600.00 lbs/hr) * (8 hrs/day) =			52800.00	lbs/day

CO2e Emissions (Uncontrolled):

Emission Factor	21.000	Global Warming Potential	(USEPA 40 CFR 98, Subpart A - Table A-1)		
Calculations	(21 GWP) * (19.2 TPY) =			403.20	TPY
CO2 e Total	(52800 tpy) + (403.2 tpy) =			53203.20	TPY

HAP Emissions (Controlled)

Emission Factor	0.009	lbs/ton Asphalt Product	AP-42 Table 11.1-10, 3/04 - #2 Fabric Filter Factor		
Calculations	(0.0087 lbs/ton) * (200 tons/hr) =			1.74	lbs/hr
	(1.74 lbs/hr) * (8 hrs/day) =			13.92	lbs/day

Aggregate Handling & Storage Piles

Process Rate:	200	tons/hour
Number of Piles:	2	pile Transfers [Pile formation Load-in & Pile Load-out to bins]
Operating Hours:	8	hours/day

Particulate Emissions: [AP-42 13.2.4, 11/06]

Emission Factor: $EF = k\ (0.0032) * (U/5)^{\wedge 1.3} / (M / 2)^{\wedge 1.4}$

where:

EF, Emission Factor = lbs Emitted / ton Processed		
k, Dimensionless Particle Size Multiplier PM =	0.74	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier $PM_{2.5}$ =	0.053	[AP-42 13.2.4, 11/06]
U, Mean Wind Speed (mph) =	9.3	[estimate]
M, Material Moisture Content (%) =	2.1	[AP-42 13.2.4-1, 11/06]

PM Emissions:

Emission Factor	$EF = 0.74 * (0.0032) * (9.3/5)^{\wedge 1.3} / (2.1 / 2)^{\wedge 1.4}$ =			0.0050	lbs/ton
Calculations	(0.0050 lbs/ton) * (200 tons/hr) * (2 pile) =			1.99	lbs/hr
	(1.99 lbs/hr) * (8 hrs/day) =			15.92	lbs/day

PM_{10} Emissions:

Emission Factor	$EF = 0.35 * (0.0032) * (9.3/5)^{\wedge 1.3} / (2.1 / 2)^{\wedge 1.4}$ =			0.0024	lbs/ton

Calculations	(0.0024 lbs/ton) * (200 tons/hr) * (2 pile) =	0.94	lbs/hr
	(0.94 lbs/hr) * (8 hrs/day) =	7.53	lbs/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.053 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0004	lbs/ton
Calculations	(0.0004 lbs/ton) * (200 tons/hr) * (2 pile) =	0.14	lbs/hr
	(0.14 lbs/hr) * (8 hrs/day) =	1.14	lbs/day

Aggregate Conveying [SCC 3-05-020-06]

Process Rate:	200	tons/hour
Number of Transfers:	2	Conveyor Transfers [Based on process flow diagram]
Operating Hours:	8	hours/day

PM Emissions (controlled):

Emission Factor	0.00014	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.00014 lbs/ton) * (200 tons/hr) * (2 Transfers) =			0.06	lbs/hr
	(0.06 lbs/hr) * (8 hrs/day) =			0.45	lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00005	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.000046 lbs/ton) * (200 tons/hr) * (2 Transfers) =			0.02	lbs/hr
	(0.02 lbs/hr) * (8 hrs/day) =			0.15	lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00001	lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.000013 lbs/ton) * (200 tons/hr) * (2 Transfers) =			0.01	lbs/hr
	(0.01 lbs/hr) * (8 hrs/day) =			0.04	lbs/day

Lime Silo Product transfer & Conveying SCC 3-05-016-24

Process Rate:	200	tons/hour
Operating Hours:	8	hours/day

PM Emissions (controlled): (Fabric Filter on Lime Silo Assumed)

Emission Factor	0.000088	lbs/ton transferred	[AP-42 Table 11.17.-4-2, 8/04]		
Calculations	(0.000088 lbs/ton) * (200 tons/hr) =			0.04	lbs/hr
	(0.04 lbs/hr) * (8 hrs/day) =			0.28	lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.000088	lbs/ton transferred	[AP-42 Table 11.17.-4, 8/04]		
Calculations	(0.000088 lbs/ton) * (200 tons/hr) * (2 Transfers) =			0.04	lbs/hr
	(0.04 lbs/hr) * (8 hrs/day) =			0.28	lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000088	lbs/ton transferred	[AP-42 Table 11.17.-2, 8/04]	
Calculations	(0.000088 lbs/ton) * (200 tons/hr) * (2 Transfers) =		0.02	lbs/hr
	(0.02 lbs/hr) * (8 hrs/day) =		0.14	lbs/day

Asphalt Storage & Silo Filling [SCC 3-05-002-13]

Process Rate:	200	tons/hour
Operating Schedule:	8	hours/day

Particulate Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (200 tons/hr) =	0.12	lbs/hr
	(0.12 lbs/hr) * (8 hrs/day) =	0.94	lbs/day

PM_{10} Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (200 tons/hr) =	0.12	lbs/hr
	(0.12 lbs/hr) * (8 hrs/day) =	0.94	lbs/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (200 tons/hr) =	0.12	lbs/hr
	(0.12 lbs/hr) * (8 hrs/day) =	0.94	lbs/day

CO Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor	EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) =	0.0012	lbs/ton HMA
Calculations	(0.0012 lbs/ton) * (200 tons/hr) =	0.24	lbs/hr
	(0.24 lbs/hr) * (8 hrs/day) =	1.89	lbs/day

[AP-42 Table 11.1-14, 3/04]

VOC Emissions:

Emission Factor: $EF = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor	EF = 0.0504 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.0122	lbs/ton HMA
Calculations	(0.0122 lbs/ton) * (200 tons/hr) =	2.44	lbs/hr
	(2.44 lbs/hr) * (8 hrs/day) =	0.01	lbs/day

Asphalt Heater [SCC 3-05-002-08]

Fuel Type: #2 Diesel, Natural Gas, or Propane
Burner Firing Rate: 1.41 mmBtu/hr (Maximum Design)
Fuel Rate (Diesel) 73.0 lb/hr 10.3 gallons/hr

PM Total

PM(Filterable) plus Condensable PM	0.03	lbs/hr
	0.27	lbs/day

PM (Filterable PM)

Emission Factor	2.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(2 lbs/1000 gal) * (10.3 gals/hr) =	0.02	lbs/hr
	(0.02 lbs/hr) * (8 hrs/day) =	0.16	lbs/day

Condensable PM

Emission Factor	1.30 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(1.3 lbs/1000 gal) * (10.3 gals/hr) =	0.01	lbs/hr
	(0.01 lbs/hr) * (8 hrs/day) =	0.11	lbs/day

CO Emissions (uncontrolled)

Emission Factor	5.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(5 lbs/1000 gal) * (10.3 gals/hr) =	0.05	lbs/hr
	(0.05 lbs/hr) * (8 hrs/day) =	0.41	lbs/day

NO_X Emissions (uncontrolled)

Emission Factor	20.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(20 lbs/1000 gal) * (10.3 gals/hr) =	0.21	lbs/hr
	(0.21 lbs/hr) * (8 hrs/day) =	1.65	lbs/day

SO_2 Emissions (uncontrolled)

Emission Factor	142.00 lb/1000 gallons [AP-42 Table 1.3-1, 5/10; EF based on Distillate oils]		
Calculations	(142 lbs/1000 gal) *(0.05% S)* (10.3 gals/hr) =	1.46	lbs/hr
	(1.46 lbs/hr) * (8 hrs/day) =	11.70	lbs/day

VOC Emissions (uncontrolled)

Emission Factor	0.20	lb/1000 gallons [AP-42 Table 1.3-3, 5/10; EF based on Distillate oils]		
Calculations	(0.2 lbs/1000 gal))* (10.3 gals/hr) =		0.002	lbs/hr
	(0.00 lbs/hr) * (8 hrs/day) =		0.02	lbs/day

Asphalt Plant Load-Out [SCC 3-05-002-14]

Process Rate: 200 tons/hour
Operating Schedule: 8 hours/day

Particulate Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =		0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =		0.10	lbs/hr
	(0.10 lbs/hr) * (8 hrs/day) =		0.84	lbs/day

PM_{10} Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =		0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =		0.10	lbs/hr
	(0.10 lbs/hr) * (8 hrs/day) * =		0.84	TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =		0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (200 tons/hr) =		0.10	lbs/hr
	(0.10 lbs/hr) * (8 hrs/day) =		0.84	lbs/day

CO Emissions: [AP-42 Table 11.1-14, 3/04]

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

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

CO Emissions:

Emission Factor	EF = 0.00558 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =		0.00135	lbs/ton HMA
Calculations	(0.00135 lbs/ton) * (200 tons/hr) =		0.27	lbs/hr
	(0.27 lbs/hr) * (8 hrs/day) =		2.16	lbs/day

VOC Emissions: [AP-42 Table 11.1-14, 3/04]

Emission Factor: $EF = 0.0172(-V)e^{((0.0251)(T+460)-20.43)}$

Factor

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

VOC Emissions:

Emission Factor	EF = 0.0172 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =			lbs/ton HMA produced	
Calculations	(0.00416 lbs/ton) * (200 tons/hr) =		0.83	lbs/hr	
	(0.83 lbs/hr) * (8 hrs/day) =	0.00416	6.65	lbs/day	

Diesel Engines:

Diesel Generators (Total 806 bhp)

Engine Rating:	806	bhp					
Operating Hours:	8	hrs/day	8	Hrs/Day	2.45	MMBtu/hr	

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022	lb/hp-hr	[CAT Spec Sheet]		
Calculations	(0.0022 lb/hp-hr) * (806 hp) =		1.77	lbs/hr	
	(1.77 lbs/hr) * (8 hrs/Day) =		14.19	lbs/day	

PM_{10} Emissions:

Emission Factor	0.002200	lb/hp-hr	[Cat Spec Sheet]			
Calculations	(0.0022 lb/hp-hr) * (806 hp) =		1.77	lbs/hr	14.1856	lb/day
	(1.77 lbs/hr) * (8 hrs/day) =		14.19	lbs/day		
			0.0745	g/sec	0.07454	g/sec

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0022000	lb/hp-hr	[Cat Spec Sheet]		
Calculations	(0.0022 lb/hp-hr) * (806 hp) =		1.77	lbs/hr	lbs/day
	(1.77 lbs/hr) * (8 hrs/day) =		14.19	lbs/day	

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077	MMBtu	[AP-42 3.4-1, 10/96]		
Calculations	(0.0077 lb/mmBtu) * (2.45mmBtu/hr) =		0.02	lbs/hr	
	(0.02 lbs/hr) * (8 hrs/day) =		0.15	lbs/day	

CO
Emissions:

Emission Factor	0.00668	lb/hp-hr	[AP-42 3.3-1 10/96]		

Calculations	(0.00668 lb/hp-hr) * (806 hp) =	5.38	lbs/hr
	(5.38 lbs/hr) * (8 hrs/day) =	43.07	lbs/day

NOx Emissions:

Emission Factor	0.0311	lb/hp-hr	[AP42 3.3-1 10/96]
Calculations	(0.03106 lb/hp-hr) * (806 hp) =	25.03	lbs/hr
	(25.03 lbs/hr) * (8 hrs/day) =	200.27	lbs/day

SO_x Emissions:

Emission Factor	0.00205	lb/hp-hr	[AP-42 3.3-1, 10/96]
Calculations	(0.0021 lb/hp-hr) * (806 hp) =	1.65	lbs/hr
	(1.65 lbs/hr) * (8 hrs/day) =	13.22	lbs/day

VOC Emissions:

Emission Factor	0.00251	lb/hp-hr	[AP-42 3.3-1, 10/96]
Calculations	(0.0025 lb/hp-hr) * (806 hp) =	2.02	lbs/hr
	(2.02 lbs/hr) * (8 hrs/day) =	16.19	lbs/day

Unpaved Roadways (Haul Roads)

Miles Travelled:	5	Miles/Day	[Estimate]
Vehicle Weight:	< 50	Tons	[AP-42 13.2.2.2, 11/06]

Emission Factor	EF = k(s/12)^a * (W/3)^b		4.9	[AP-42 Table 13.2.2-2, 11/06]
	where:	EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)	1.5	[AP-42 Table 13.2.2-2, 11/06]
		k, Empirical Constant PM =	0.15	[AP-42 Table 13.2.2-2, 11/06]
		k, Empirical Constant PM_{10} =	7.1	[AP-42 Table 13.2.2-1, 11/06]
		k, Empirical Constant $PM_{2.5}$ =	50	[Provided Data]
		s, Surface Material Silt Content (%) =	0.7	[AP-42 Table 13.2.2-2, 11/06]
		W, Mean Vehicle Weight (tons) =	0.9	[AP-42 Table 13.2.2-2, 11/06]
		a, Empirical Constant PM =	0.45	[AP-42 Table 13.2.2-2, 11/06]
		a, Empirical Constant PM_{10} /$PM_{2.5}$ =		
		b, Empirical Constant PM - $PM_{2.5}$ =		

PM Emissions:		12.04	lbs/VMT
Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =	12.036	
Calculations	(12.04 lbs/VMT) * (5 miles/day) =	60.18	lbs/day

PM_{10} Emissions:		3.32	lbs/VMT
Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =	3.317	
Calculations	(3.32 lbs/VMT) * (5 miles/day) =	16.59	lbs/day

$PM_{2.5}$ Emissions:		0.33	lbs/VMT
Emission	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =	0.332	

Factor Calculations	(0.33 lbs/VMT) * (5 miles/day) =			1.66	lbs/day

Screening

Process Rate:	200	ton/hr	(One Screen)
Operating Hours	8		hrs/day

PM Emissions: (Screening controlled)

Emission Factor	0.002	lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.0022 lbs/ton) * (200.00 ton/hour) =			0.44	lbs/hr
	(0.44 lbs/hr) * (8 hrs/day) =			3.52	lbs/day

PM10 Emissions:

Emission Factor	0.00074	lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.00074 lbs/ton) * (200.00 ton/hour) =			0.148	lbs/hr
	(0.15 lbs/hr) * (8 hrs/day) =			1.184	TPY

PM2.5 Emissions:

Emission Factor	0.00005	lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.00005 lbs/ton) * (200.00 ton/hour) =			0.01	lbs/hr
	(0.01 lbs/hr) * (8 hrs/day) =			0.08	TPY

Note: Since the source did not request a significant number of operating hours and the asphalt plant is relatively small, summer time operation has no limit on the daily hours of operation. However, during the winter, the facility is limited to no more than 8 hours of operation per 24 hour period.

As per Department policy based on the Memo titled "Modeling for Portable Sources In or Near Nonattainment Areas" dated October 14, 2005, the Department conducted a screening level air dispersion modeling analysis on point source emissions to verify that the maximum combined 24-hour impact would be less than 5 micrograms per cubic meter ($\mu g/m^3$) while operating during winter months in PM_{10} nonattainment areas. In order to model both the baghouse exhaust and engine exhaust, the combined PM_{10} emissions from all three sources, were modeled at a stack height of 19.74 feet. This number represents the interpolation of the volume of exhaust air discharged from the engines versus the volume discharged from the baghouse stack. The majority of the PM_{10} emissions and largest share of the total exhaust flow are due to the baghouse stack. The equipment was conservatively modeled to demonstrate that 5 $\mu g/m^3$ would not be exceeded. The modeling inputs and results are shown below.

```
  09:59:09
  ***  SCREEN3 MODEL RUN  *** Run on 3/28/17
  *** VERSION DATED 13043 ***

 C:\Lakes\Screen View\CopperCity.scr


 SIMPLE TERRAIN INPUTS:
    SOURCE TYPE            =        POINT
    EMISSION RATE (G/S)    =     0.267900
    STACK HEIGHT (M)       =       6.0168
    STK INSIDE DIAM (M)    =       1.1186
    STK EXIT VELOCITY (M/S)=      21.9471
    STK GAS EXIT TEMP (K)  =     399.8167
    AMBIENT AIR TEMP (K)   =     293.0000
    RECEPTOR HEIGHT (M)    =       0.0000
    URBAN/RURAL OPTION     =        RURAL
    BUILDING HEIGHT (M)    =       0.0000
    MIN HORIZ BLDG DIM (M) =       0.0000
    MAX HORIZ BLDG DIM (M) =       0.0000

 THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS
ENTERED.

    STACK EXIT VELOCITY WAS CALCULATED FROM
    VOLUME FLOW RATE =   21.568922     (M**3/S)

 BUOY. FLUX =   17.987 M**4/S**3;  MOM. FLUX =  110.424 M**4/S**2.

 *** FULL METEOROLOGY ***

 **********************************
 *** SCREEN AUTOMATED DISTANCES ***
 **********************************

 *** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING
DISTANCES ***

   DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA
SIGMA
    (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z
(M)  DWASH
 -------  ----------  ----  -----  -----  ------  ------  ------  ----
--  -----
      1.    0.000        1     1.0    1.0   320.0  193.14    3.80
3.78    NO
    100.    1.188        4    20.0   20.0  6400.0   14.47    8.30
4.83    NO
    200.    7.894        4    20.0   20.0  6400.0   14.47   15.70
8.74    NO
    300.    7.639        4    20.0   20.0  6400.0   14.47   22.77
12.38    NO
    400.    6.134        4    15.0   15.0  4800.0   18.41   29.67
15.68    NO
    500.    5.277        4    10.0   10.0  3200.0   24.73   36.54
19.06    NO
```

```
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
    236.    8.257        4    20.0   20.0  6400.0   14.47   18.34
10.11    NO

  DWASH=   MEANS NO CALC MADE (CONC = 0.0)
  DWASH=NO MEANS NO BUILDING DOWNWASH USED
  DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
  DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
  DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

      **************************************
      *** SUMMARY OF SCREEN MODEL RESULTS ***
      **************************************

  CALCULATION        MAX CONC    DIST TO   TERRAIN
   PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
--------------    -----------   ---------   -------
SIMPLE TERRAIN       8.257          236.        0.
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The model result was a maximum 1-hr impact of 8.26 $\mu g/m^3$ at a distance of 236 meters. In accordance with established modeling guidance this 1-hr maximum impact is multiplied by 0.4 for an estimate of a corresponding maximum 24-hr impact concentration. In this instance the estimated maximum 24-hr impact is 3.3 $\mu g/m^3$ which is less than 5 $\mu g/m^3$ providing a maximum of 8-hours of winter time operation. Based on this result and in accordance with Department policy, the operation of the point sources at the facility is not expected to cause or contribute to further degradation of the ambient concentration of PM_{10}.

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}). Due to exceedances of the national standards for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, the EPA required the Department and the City-County Health Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies identified these sources to be the major contributors to PM_{10} emissions.

Addendum 1 to MAQP #5179-00 is for a portable asphalt plant that will locate at sites in or within 10 kilometers (km) of certain PM_{10} nonattainment areas during the summer season (April through September) and the winter season (October through March). The more stringent operating conditions contained in the addendum will minimize any potential impact on the nonattainment areas and will protect the national ambient air quality standards. Also, this facility is a portable source that would be expected to operate on an intermittent and temporary basis and any effects on air quality would be expected to be minor and short-lived.

VI. Air Quality Impacts

MAQP #5179-00 and Addendum 1 will cover the operations of this portable asphalt plant while operating at any location within Montana, excluding those counties that have a

Department approved permitting program and those areas that are tribal lands. Addendum 1 will cover the operations of this portable asphalt plant, while operating in or within 10 km of PM_{10} nonattainment areas during the summer months (April 1 through September 30) and during the winter season (October through March).

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted the following private property taking and damaging assessment:

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

Addendum Analysis Prepared By: Craig Henrikson, PE
Date: April 5, 2017

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air, Energy, & Mining Division
Air Quality Bureau
1520 East Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901
(406) 444-3490

ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Copper City Asphalt, LLC

Montana Air Quality Permit (MAQP) Number: #5179-00
EA Draft: 4/12/2017
EA Final: 5/15/2017
Permit Final: 5/31/2017

1. *Legal Description of Site:* The Copper City Asphalt, LLC (CCA) proposed to operate at a location currently used for asphalt production. The legal site description is Section 16, Township 3 North, Range 8 West in Silver Bow County.

2. *Description of Project:* CCA is proposing to add a portable drum mix operation with baghouse and initially operate the batch plant at an existing pit. The permit would include two diesel-fired engines, a hot oil heater, bins, a single screen, conveyors, silos, and fuel tanks. A complete list of the permitted equipment is included in Section I.A of the permit analysis.

3. *Objectives of Project:* Increased business and revenue. The new facility would provide for asphalt production. It is likely the new permitted equipment will replace the current asphalt plant located at the same location.

4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the "no action" alternative. The "no action" alternative would deny the issuance of the MAQP to the facility. CCA would lack the equipment to for creating additional product and could potentially lose business to competitors. Any potential air emission increases that would be authorized by issuing the MAQP would not occur. However, the Department does not consider the "no action" alternative to be appropriate because CCA has demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no action" alternative was eliminated from further consideration. Other alternatives considered were discussed in the Best Available Control Technology analysis.

5. *A listing of mitigation, stipulations, and other controls:* A list of enforceable conditions, including a BACT analysis, would be included in MAQP #5179-00.

6. *Regulatory effects on private property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

The proposed project would allow for a portable asphalt plant to including two diesel-fired engines and associated equipment. Conditions requiring control mechanisms have been placed within MAQP #5179-00 to ensure that only minor air quality impacts would occur. Additionally, limitations established within MAQP #5179-00 would minimize air pollution. Overall, any adverse impact on terrestrial and aquatic life and habitats is anticipated to be minor.

B. Water Quality, Quantity, and Distribution

This permitting action would have little or no effect on the water quality, water quantity, and distribution, as there would be no discharge to groundwater or surface water associated with the completed project. Therefore, the project would have minor, if any, impacts to water quality, quantity or distribution in the area.

C. Geology and Soil Quality, Stability, and Moisture

This permitting action would have a minor effect on geology and soil properties with land disturbances as the operation will initially be located in an existing pit. The Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants, the atmosphere, and conditions that would be placed in MAQP #5179-00.

D. Vegetation Cover, Quantity, and Quality

The proposed project would have minor impacts on the surrounding vegetation because the initial location will be at a location currently established for asphalt production. The existing surrounding land is currently industrial in nature. The PM, PM_{10}, and $PM_{2.5}$ emissions from this project may have a minor effect on the surrounding vegetation; however, the air quality permit associated with this project would contain limitations to minimize the effect of the emissions on the surrounding environment. Overall, this project would have minor effects on the vegetation cover, quantity and quality.

E. Aesthetics

Addition of the portable asphalt plant, two diesel-fired engines and associated equipment would have minor impacts on the surrounding property from both the visual perspective, as well as noise pollution. The second asphalt plant will be located at a location currently used for asphalt production so there are no aesthetic changes.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because the facility would emit the following air pollutants: PM, PM_{10}, $PM_{2.5}$, NOx, SO_2, CO and VOCs. These emissions would be minimized by limitations and conditions that would be included in MAQP #5179-00. While deposition of pollutants would occur as a

result of the new equipment, the Department determined that the impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants, the atmosphere (wind speed, wind direction, ambient temperature, etc.), and conditions that would be placed in MAQP #5179-00. The air concentration of pollutants would be relatively small, and the corresponding deposition of those air pollutants would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Search results identified a number of species within the search radius. Species of concern include Hoary Bat, Brewers, Sparrow, Clark's Nutcracker, Ferruginous Hawk, Franklin's Gull, Golden Eagle, Golden Eagle, Great Blue Heron, Northern Goshawk, Sage Thrasher, Greater Short-horned Lizard, Western Toad and Westslope Cutthroat Trout. Because potential emission levels are minor, and disturbance is limited, the Department has determined that there will be a minor disturbance to unidentified unique, endangered, fragile, or limited environmental resources in the area.

H. Demands on Environmental Resource of Water, Air, and Energy

The proposed project would have minor impacts on the demands for the environmental resources of air and water because the facility would be a source of air pollutants. Deposition of pollutants would occur as a result of operating the facility; however, as explained in Section 7.F of this EA, the Department determined that any impacts on air and water resources from the pollutants (including deposition) would be minor. The Department determined that controlled emissions from the source would not cause or contribute to a violation of any ambient air quality standard. Therefore, any impacts to air quality from the addition of the new equipment would be minor.

The proposed project would be expected to have minor impacts on the demand for the environmental resource of energy because of additional energy usage would be required at the site. The impact on the demand for the environmental resource of energy would be minor because the equipment is planned to go to a site currently used for asphalt production and this project expands and/or replaces the current asphalt capacity. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

Since the planned initial site is a location used for asphalt production, on an existing pad site, the Department determined that the chance of the new equipment impacting any historical and archaeological sites in the area would be minor.

J. Cumulative and Secondary Impacts

The proposed project would cause minor effects on the physical and biological aspects of the human environment because the project would cause a slight increase in emissions

of PM, PM_{10}, $PM_{2.5}$, and NOx and SO_2 in the proposed area. However, conditions have been placed in MAQP #5179-00 to ensure that only minor air quality impacts would occur. Limitations would be established in the permit to minimize air pollution. Overall, any impacts to the physical and biological environment would be minor.

SUMMARY OF COMMENTS ON POTENTIAL SOCIAL AND ECONOMIC EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed project would not cause disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the proposed project would be located at a site currently used for asphalt production. The proposed addition of the new equipment would not change the predominant use of the facility since it is already an operating asphalt plant site.

B. Cultural Uniqueness and Diversity

Only minor impacts to the cultural uniqueness and diversity of the area would be anticipated as the location is already industrial. Operation of the new equipment is expected to require additional approximately 3 to 4 employees. In addition, no new disturbance is planned as materials will be hauled by truck to the site. Therefore, the cultural uniqueness and diversity of the area would not likely be affected.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor impacts to the local and state tax base and tax revenue as a result of the proposed project. However, the proposed project would necessitate raw material transportation activities. Overall, any impacts to the local and state tax base and tax revenue would be minor.

D. Agricultural or Industrial Production

The land at the proposed location is currently used for industrial purposes. The proposed project would not have any minor impact on agricultural production. However, because the facility expansion would be relatively small by industrial standards, only minor impacts to industrial production would be expected.

E. Human Health

The proposed project would result in minor, if any, impacts to human health. As explained in Section 7.F of this EA, deposition of pollutants would occur; however, the Department determined that the proposed project would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health. Overall any impacts to public health would be minor. The Department believes this asphalt plant will replace the current asphalt plant located at the initial location and that both units will not operate at this location in the future.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would be implemented within an area currently utilized for asphalt production. No impacts to access and quality of recreational and wilderness activities in the project area are anticipated.

G. Quantity and Distribution of Employment

The proposed project would have minor impacts on the quantity and distribution of employment as 3 to 4 new employees may be required to operate the proposed plant. Any impacts to the quantity and distribution of employment would be minor due to the relatively small size of the facility.

H. Distribution of Population

The proposed project would have minor impacts on the employment and population of the area as several new employees would be required for the addition of the new equipment. However, any impacts to the quantity and distribution of employment from construction related employment would be minor due to the relatively small size of the facility. Overall, any impacts to the distribution of population in the area would be minor.

I. Demands of Government Services

There would be minor impacts on the demands for government services because additional time would be required by government agencies to issue MAQP #5179-00 and, in the future, to assure compliance with applicable rules, standards, and conditions that would be contained in MAQP #5179-00. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the relatively small size of the facility.

J. Industrial and Commercial Activity

Only minor impacts would be expected on local industrial and commercial activity because the proposed project would represent only a minor increase in the industrial and commercial activity in the area. The addition of the asphalt plant would be a relatively small expansion and would take place at the existing facility location.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals affected by issuing MAQP #5179-00. This permit would contain limits for protecting air quality and keeping facility emissions in compliance with any applicable ambient air quality standards. Because the project is small, any impacts from the facility would be minor.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social aspects of the human environment in the immediate

area. Due to the relatively small size of the asphalt plant, the industrial production, employment, and tax revenue (etc.) impacts resulting from the proposed project would be minor. In addition, the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in MAQP #5179-00.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the addition of an asphalt plant at a location currently used for asphalt production, two –diesel-fired engines and associated equipment. MAQP #5179-00 would include conditions and limitations to ensure the facility would operate in compliance with all applicable air quality rules and regulations. In addition, there are no major or unknown effects associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Natural Heritage Program and the Montana Historical Society.

Individuals or groups contributing to this EA: Montana Department of Environmental Quality, Montana Natural Heritage Program, Montana Historical Society.

EA prepared by: C. Henrikson
Date: April 5, 2017