DEQ
Montana Department
of Environmental Quality

October 21, 2016

Susan Lasher
Hollow Contracting, Inc.
404 Greenwood Ave,
Butte, MT 59701

Dear Ms. Lasher

Montana Air Quality Permit #3320-04 is deemed final as of October 18, 2016, by the Department of Environmental Quality (Department). This permit is for a portable asphalt plant. 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 Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

Rhonda Payne
Environmental Science Specialist
Air Quality Bureau
(406) 444-5287

JM:RP
Enclosure

Montana Department of Environmental Quality
Air, Energy, and Mining Division

Montana Air Quality Permit #3320-04

Hollow Contracting, Inc.
404 Greenwood Ave,
Butte, MT 59701

October 18, 2016

MONTANA AIR QUALITY PERMIT

Issued To: Hollow Contracting, Inc.
404 Greenwood Ave,
Butte, MT 59701

MAQP: #3320-04
Administrative Amendment (AA)
Request Received: 09/01/2016
Department's Decision on AA: 09/30/2016
Permit Final: 10/18/2016
State ID#: 777-3320

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

Section I: Permitted Facilities

A. Plant Location

Hollow operates a portable drum mix asphalt plant at various locations throughout Montana. MAQP #3320-04 applies while operating at any location within Montana, except within those areas having a Department of Environmental Quality (Department) approved permitting program, those areas considered to be tribal lands, or those areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. Addendum #5 applies to those areas in or within 10 km of certain PM_{10} nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.*

B. Current Permit Action

On September 1, 2016, the Department received a request to administratively amend MAQP #3320-03 to transfer ownership from Asphalt LLC to Hollow Contracting, Inc. The contact information, including address, remains unchanged. This permitting action amends MAQP #3320-03 to reflect the name change and updates the permit format and language to reflect current Department practices. **MAQP #3320-04** replaces MAQP #3320-03 and **Addendum #5** replaces Addendum #4.

Section II: Conditions and Limitations

A. Emission Limitations

1. Hollow plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

2. Hollow 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 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

3. Hollow 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 an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

4. Hollow 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).

5. Hollow shall treat 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, to maintain compliance with the reasonable precautions limitation in Section II.A.4 (ARM 17.8.752).

6. A baghouse for air pollution control, with a device to measure the pressure drop (magnehelic gauge, manometer, etc.), must be installed and maintained on the asphalt drum and lime silo. Pressure drop must be measured in inches of water. Temperature indicators at the control device inlet and outlet must be installed and maintained (ARM 17.8.752).

7. Once a stack test is performed, the asphalt production rate shall be limited to the average production rate during the last source test demonstrating compliance (ARM 17.8.749).

8. Hollow shall only use natural gas, propane, or fuel oil to fire the hot mix dryer (ARM 17.8.749).

9. Hollow plant production shall not exceed 675,000 tons during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

10. The hours of operation for each of the diesel generators shall not exceed 4,500 hours during any rolling 12-month time period (ARM 17.8.1204).

11. The two diesel generators used with this facility shall not have a combined capacity greater than 875 horsepower (ARM 17.8.749).

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

13. Hollow shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR Part 60, Subpart I, *Standards of Performance for Hot Mix Asphalt Facilities* as it applies to this asphalt operation (ARM 17.8.340 and 40 CFR 60, Subpart I).

14. Hollow shall comply with all applicable standards and limitation, 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 engine (ARM 17.8.340; 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up, an Environmental Protection Agency (EPA) Methods 1-5 and 9 source test shall be performed on the asphalt plant to demonstrate compliance with Section II.A.1, Section II.A.2 and Section II.A.3, respectively. 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 and ARM 17.8.749).

2. Pressure drop on the control device and temperature must be recorded daily and kept on site according to Section II.C.2 (ARM 17.8.749).

3. Pressure drop on the control device and temperatures must be recorded during the compliance source test and reported as part of the test results (ARM 17.8.749).

4. All compliance source tests must be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

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

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

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

C. Operational Reporting Requirements

1. If this 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 upon request (ARM 17.8.765).

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

3. Hollow 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 of emissions 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 the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

4. Hollow shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a 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 or the addition of a new emission unit. This 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).

5. Hollow shall document, by month, the asphalt production of the facility. By the 25th day of each month, Hollow shall calculate the total asphalt production for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation contained in Section II.A.9. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

6. Hollow shall document, by month, the combined hours of operation of the two diesel generators. By the 25th day of each month, Hollow shall calculate the total combined hours of operation of the diesel generators for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation contained in Section II.A.10. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

7. Hollow shall annually certify that its actual 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 with the annual emissions inventory information (ARM 17.8.1204).

Section III: General Conditions

A. Inspection - Hollow 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 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 Hollow fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Hollow 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.* (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, as amended by the 1991 Legislature, failure to pay the annual operation fee by Hollow may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement - Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (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. Hollow shall comply with the conditions contained in this permit while operating in any location in Montana, except within those areas having a Department-approved permitting program.

Montana Air Quality Permit Analysis
Hollow Contracting, Inc.
MAQP #3320-04

I. Introduction/Process Description

A. Permitted Equipment

Hollow, LLC (Hollow) owns and operates a portable 1997 Gencor counterflow drum mix asphalt plant (maximum capacity 150-tons per hour (TPH)). Equipment used at the facility includes, but is not limited to the following:

- 1997 Gencor counterflow drum mix asphalt plant (up to 150 TPH) with baghouse (fired on natural gas, propane, or fuel oil)
- (1) Diesel Generator (up to 75 horsepower) used to fire the asphalt heater
  (1) Diesel Generator (up to 800 horsepower) used to fire the asphalt plant
- Associated equipment (lime silo, elevator, screens, bins, mixer, conveyors, etc.)
- Fuel Oil Storage Tank (up to 10,000 gallons)

B. Source Description

For a typical operational set-up, stockpiled aggregate is loaded into the cold feeder. The aggregate is dispensed from the bins, and dumped onto feeder conveyors that transfer the aggregate to the drum mix dryer. The aggregate travels through the rotating drum where asphalt oil and lime is added to the dryer. The dryer drum mixes the asphalt oil, lime, and the aggregate. The resulting hot-mix asphalt is loaded into a hot mix asphalt storage silo where it is stored until the asphalt is dumped into trucks for transport to the project site.

C. Home Pit

When not in use elsewhere, the equipment for Hollow will be located at 404 Greenwood Avenue, Butte, MT. The approximate township range section location is Township 3 North, Range 8 West Section 23.

D. Permit History

On August 5, 2004, AggQuip, LLC (AggQuip) was issued **MAQP #3320-00** to operate a portable drum mix asphalt plant (maximum capacity up to 150 TPH), two generators (combined maximum capacity 650 kW), and associated equipment.

On August 18, 2006, the Department of Environmental Quality (Department) received a notification that AggQuip had transferred ownership to Asphalt LLC (Asphalt). This permitting action transferred ownership of MAQP #3320-01 from AggQuip to Asphalt and updated the permit to reflect current permit language and format. **MAQP #3320-01** replaced MAQP #3320-00 and **Addendum #2** replaced Addendum #1.

On March 12, 2007, the Department received a request from Asphalt for a modification to MAQP #3320-01 for the addition of a diesel fuel storage tank and to include an option to use alternative fuels to fire the drum-mix asphalt plant. The Department modified MAQP #3320-01 as requested. **MAQP #3320-02** replaced MAQP #3320-01 and **Addendum #3** replaced Addendum #2.

On January 7, 2012, the Department received a request to administratively amend MAQP #3320-02 to change existing federally enforceable limits. Asphalt's request was made as part of a project undertaken by the Department to address those sources with existing federally enforceable permit limits that were established to keep potential emissions below the 100 ton per year major source Title V Operating Permit thresholds. The Department encouraged synthetic minor sources to take new permit limits to further reduce emissions from just below 100 tons per year to just below 80 tons per year. The permit limit change consequently altered the oversight category for this facility to a level that is only subject to the State Compliance Monitoring Strategy. This permitting action amended MAQP #3320-02 to further limit hours of operation to maintain potential emissions below 80 tpy. In addition, this permit action updated rule references, permit format, and the emissions inventory. **MAQP #3320-03** replaced MAQP #3320-02 and **Addendum #4** replaced Addendum #3.

E. Current Permit

On September 1, 2016, the Department received a request to administratively amend MAQP #3320-03 to transfer ownership from Asphalt LLC to Hollow Contracting, Inc. The contact information, including address, remains unchanged. This permitting action amends MAQP #3320-03 to reflect the name change and updates the permit format and language to reflect current Department practices. **MAQP #3320-04** replaces MAQP #3320-03 and **Addendum #5** replaces Addendum #4.

F. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

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 Administrative Rules of Montana (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 includes 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).

   Hollow shall comply with the 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 of 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 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
5. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

Hollow must maintain compliance 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 be taken to control emissions of airborne particulate matter (PM). (2) Under this rule, Hollow 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 rule.

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 rule.

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 17.8.340 Standard of Performance for New Stationary Sources and Emissions Guidelines for Existing Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). Hollow is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

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

   b. 40 CFR 60, Subpart I (Standards of Performance for 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 Hollow, the asphalt plant equipment to be used under MAQP #3320-04 is subject to this subpart because the facility is a hot mix asphalt facility.

   c. 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 CIE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. The CI ICE equipment to be used at Hollow under MAQP #3320-04 is potentially subject to this Subpart if it stays in a location for twelve consecutive months. Hollow may substitute compression ignition internal combustion engine(s), therefore applicability to this subpart may apply to engines in the future and shall be dependent upon the date of construction and/or manufacture of the diesel-fired engine utilized.

7. 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. Hollow is potentially considered a NESHAP-affected facility under 40 CFR Part 63 and is subject to the requirements of the following subparts.

   a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAPs Subpart as listed below.

   b. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (HAPs) 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. As the Hollow is considered an area source of HAP emissions and operates RICE equipment, the engine is potentially subject to this subpart depending upon the location, nature, and duration of operation. Since the RICE to be used under MAQP 3320-04 is intended to be portable, Hollow may not be required to comply with the applicable requirements of 40 CFR 63, Subpart ZZZZ. However, this subpart would become applicable if Hollow constructed and operated a RICE that remains in a location for more than 12 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. This rule requires that Hollow 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. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change.

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 air quality 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 facility to obtain an air quality permit or permit alteration to construct, modify, or use any asphalt plant, crusher or screen that has the Potential to Emit (PTE) greater than 15 tons per year of any pollutant. Hollow has a PTE greater than 15 tons per year of PM, particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), nitrogen oxides (NO_X), carbon monoxide (CO), oxides of sulfur (SO_2) and volatile organic compounds (VOC); therefore, an air quality permit 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 Permit--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that are not subject to the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (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. A permit application was not required for the current permit action because the permit change is considered an administrative permit change.

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 Hollow 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 air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered 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 air quality permit 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 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. 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 air quality permit 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 air quality permit 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 (excluding fugitive emissions) of any air pollutant.

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 particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) 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 #3320-04 for Hollow, 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 tons/year for any one HAP and less than 25 tons/year of all HAPs.

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

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

   e. This facility is potentially subject to a current National Emission Standards for Hazardous Air Pollutants (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.

Hollow has accepted 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.

a. 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.

The Department has determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement.

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 altered source. Hollow shall install on the new or altered source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT determination was not required for the current permit action because the permit change is considered an administrative permit change.

IV. Emission Inventory

Emission Source	Emissions Tons/Year [PTE] PM	PM_{10}	$PM_{2.5}$	CO	NOx	SO_2	VOC
1997 Gencor Asphalt Plant with Baghouse	12.36	8.39	8.39	43.88	18.56	18.83	10.80
Aggregate Handling & Storage Piles	1.68	0.79	0.12	--	--	--	--
Aggregate Conveying	0.09	0.03	0.01	--	--	--	--
Lime Silo transfer & Conveying	0.03	0.01	0.01	--	--	--	--
Asphalt Storage & Handling	0.20	0.20	0.20	0.40	--	--	4.11
Asphalt Load-Out	0.18	0.18	0.18	0.46	--	--	1.40
Generator Totals 875 hp	4.33	4.33	0.77	13.15	61.03	4.04	4.95
Unpaved Roadways	10.98	3.03	0.30	--	--	--	--
Diesel Fuel Storage Tank	--	--	--	--	--	--	negl.
TOTAL EMISSIONS >	29.85	16.96	9.97	57.88	79.59	22.87	21.27

a. Emission Inventory reflects enforceable limits on hours of operation and production output to keep allowable emissions below the Title V threshold as well as below 80 tpy level.

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

TPY, tons per year

VOC, volatile organic compounds

1997 Gencor Asphalt Plant with Baghouse

Production Rate:	150	Tons/Hour (Maximum)	1314000	tons/year (Maximum)
			675000	tons/year (Restricted Maximum)
Operating Schedule:	4500	Hours/Year (Restricted Maximum)		
Power Plant:	800	hp Diesel Generator (Asphalt Plant)		
	75	hp Diesel Generator (Supplemental Power)		
		Note: Asphalt plant may operate on utility/commercial power		

Air Flow[Volume]	16,026.00	dscfm [corrected]
Stack Test Results		gr/dscf
Test Throughput Demonstrated	N/A	tons/hour

Particulate Emissions: Dryer Stack NSPS Based

PM Emissions (controlled):

Emission Rate	0.04 gr/dscf	[40 CFR NSPS, Subpart I Limit]	
Calculations	(0.04 gr/dscf) * (16026 dscfm) * (60 min/hr) * (0.000143 lb/gr) =	5.49	lbs/hr
	(5.49 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	12.36	TPY

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) * (150 tons/hour) =	6.75	lbs/hr
	(6.75 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	15.19	TPY

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) * (150 tons/hour) =		3.45	lbs/hr
	(3.45 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		7.76	TPY
		8.39	(Corrected to match $PM_{2.5}$ calculation)	
Filterable PM (Controlled)			(Since $PM_{2.5}$ cannot exceed PM_{10})	

Emission Factor	0.026	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.026 lbs/ton) * (150 tons/hour) =		3.90	lbs/hr
	(3.90 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		8.78	TPY

Condensable PM (Controlled)

Emission Factor	0.0194	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.0194 lbs/ton) * (150 tons/hour) =		2.91	lbs/hr
	(2.91 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		6.55	TPY

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

Emission Factor	0.02486	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.02486 lbs/ton) * (150 tons/hour) =		3.73	lbs/hr
	(3.73 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		8.39	TPY

CO Emissions:

Emission Factor	0.13	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on fuel oil]	
Calculations	(0.13 lbs/ton) * (150 tons/hr) =		19.50	lbs/hr
	(19.50 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		43.88	TPY

NO_X Emissions:

Emission Factor	0.055	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on fuel oil]	
Calculations	(0.055 lbs/ton) * (150 tons/hr) =		8.25	lbs/hr
	(8.25 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		18.56	TPY

SO_2 Emissions:

Emission Factor	0.0558	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on waste oil]	
Calculations	(0.0558 lbs/ton) * (150 tons/hr) =		8.37	lbs/hr
	(8.37 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		18.83	TPY

VOC Emissions:

Emission Factor	0.032	lbs/ton processed	[AP-42 Table 11.1-8, 3/04; EF based on fuel oil]	
Calculations	(0.032 lbs/ton) * (150 tons/hr) =		4.80	lbs/hr
	(4.80 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		10.80	TPY

Aggregate Handling & Storage Piles

Process Rate:	150	tons/hour
Number of Piles:	1	pile Transfers [Pile formation Load-in & Pile Load-out to bins]
Operating Hours:	4500	hour/year

Particulate Emissions:

Emission Factor: EF = k (0.0032) * (U/5)^1.3 / (M / 2)^1.4 [AP-42 13.2.4, 11/06]

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 Calculations	EF = 0.74 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0050	lbs/ton
	(0.0050 lbs/ton) * (150 tons/hr) * (1 pile) =	0.75	lbs/hr
	(0.75 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	1.68	TPY

PM_{10} Emissions:

Emission Factor Calculations	EF = 0.35 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0024	lbs/ton
	(0.0024 lbs/ton) * (150 tons/hr) * (1 pile) =	0.35	lbs/hr
	(0.35 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.79	TPY

$PM_{2.5}$ Emissions:

Emission Factor Calculations	EF = 0.053 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0004	lbs/ton
	(0.0004 lbs/ton) * (150 tons/hr) * (1 pile) =	0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.12	TPY

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

Process Rate:	150	tons/hour
Number of Transfers:	2	Conveyor Transfers [Based on process flow diagram]
Operating Hours:	4500	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) * (150 tons/hr) * (2 Transfers) =	0.04	lbs/hr
	(0.04 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.09	TPY

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) * (150 tons/hr) * (2 Transfers) =	0.01	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.03	TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00001 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000013 lbs/ton) * (150 tons/hr) * (2 Transfers) =	0.00	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.01	TPY

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

Process Rate: 150 tons/hour
Operating Hours: 4500 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.000088 lbs/ton material transferred [AP-42 Table 11.17-4, 2/98]		
Calculations	(0.000088 lbs/ton) * (150 tons/hr) =	0.013	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.03	TPY

PM_{10} Emissions (controlled):

Emission Factor	0.000044 lbs/ton material transferred [AP-42 Table 11.17-4, 2/98] 50% of PM		
Calculations	(0.000044 lbs/ton) * (150 tons/hr) =	0.007	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.01	TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000026 lbs/ton material transferred [AP-42 Table 11.17-4, 2/98] 30% of PM		
Calculations	(0.000026 lbs/ton) * (150 tons/hr) =	0.00	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.01	TPY

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

Process Rate: 150 tons/hour
Operating Schedule: 4500 tons/year

Particulate Emissions:

Emission Factor $EF = 0.000332+0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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) * (150 tons/hr) =	0.09	lbs/hr	
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY	

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) * (150 tons/hr) =	0.09	lbs/hr	
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY	

$PM_{2.5}$ 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) * (150 tons/hr) =	0.09	lbs/hr	
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY	

CO Emissions:

Emission Factor EF = 0.00488(-V)$e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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 Calculations	EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) =	0.0012	lbs/ton HMA
	(0.0012 lbs/ton) * (150 tons/hr) =	0.18	lbs/hr
	(0.18 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.40	TPY

VOC Emissions:

Emission Factor EF = 0.0504(-V)e$^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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 Calculations	EF = 0.0504 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.0122	lbs/ton HMA
	(0.0122 lbs/ton) * (150 tons/hr) =	1.83	lbs/hr
	(1.83 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	4.11	TPY

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

Process Rate:	150	tons/hour
Operating Schedule:	4500	hours/year

Particulate Emissions:

Emission Factor EF = 0.000181+0.00141(-V)$e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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 Calculations	EF = 0.000181 + 0.00141 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY

PM_{10} Emissions:

Emission Factor Calculations	EF = 0.000181 + 0.00141 * (0.05) * e ((0.0251) * (325 + 460) - 20.43)=	0.00052	lbs/ton HMA
	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY

$PM_{2.5}$ Emissions:

Emission Factor Calculations	EF = 0.000181 + 0.00141 * (0.05) * e ((0.0251) * (325 + 460) - 20.43)=	0.00052	lbs/ton HMA
	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY

CO Emissions:

Emission Factor EF = 0.00558(-V)$e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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) * (150 tons/hr) =	0.20	lbs/hr
	(0.20 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.46	TPY

VOC Emissions:

Emission Factor EF = $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

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) =	0.00416	lbs/ton HMA produced
Calculations	(0.00416 lbs/ton) * (150 tons/hr) =	0.62	lbs/hr
	(0.62 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	1.40	TPY

Diesel Engines:

Primary Diesel Engine Generator

Engine Rating Total	875	hp
Hours of Operation:	4500	hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0479 lb/MMBtu) * (0.00 MMBtu/hr) =	0.29	lbs/hr
	(0.29 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.66	TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0077 lb/MMBtu) * (6.125 MMBtu/hr) =	0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.11	TPY

CO Emissions:

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

Calculations	(0.00668 lb/hp-hr) * (875 hp) =	5.85	lbs/hr
	(5.85 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	13.15	TPY

NOx Emissions:

Emission Factor	0.031 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.031 lb/hp-hr) * (875 hp) =	27.13	lbs/hr
	(27.13 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	61.03	TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0021 lb/hp-hr) * (875 hp) =	1.79	lbs/hr
	(1.79 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.04	TPY

VOC Emissions:

Emission Factor	0.00251 4 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0025 lb/hp-hr) * (875 hp) =	2.20	lbs/hr
	(2.20 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.95	TPY

Unpaved Roadways (Haul Roads)

Miles Travelled: 5 Miles/Day [Estimate]
Vehicle Weight: < 50 Tons

Emission Factor EF = k(s/12)^a * (W/3)^b [AP-42 13.2.2.2, 11/06]

where: EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)

k, Empirical Constant PM =	4.9	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant PM_{10} =	1.5	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant $PM_{2.5}$ =	0.15	[AP-42 Table 13.2.2-2, 11/06]
s, Surface Material Silt Content (%) =	7.1	[AP-42 Table 13.2.2-1, 11/06]
W, Mean Vehicle Weight (tons) =	50	[Provided Data]
a, Empirical Constant PM =	0.7	[AP-42 Table 13.2.2-2, 11/06]
a, Empirical Constant PM_{10} /$PM_{2.5}$ =	0.9	[AP-42 Table 13.2.2-2, 11/06]
b, Empirical Constant PM - $PM_{2.5}$ =	0.45	[AP-42 Table 13.2.2-2, 11/06]

PM Emissions:

Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =	12.04	lbs/VMT	
Calculations	(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

PM_{10} Emissions:

Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =	3.32	lbs/VMT	
Calculations	(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

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =	0.33	lbs/VMT		
Calculations	(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

Diesel Fuel Storage Tank

VOC Emissions
(Taken from previous emission inventory)

190875	BTU
1.003E+11	MM BTU/yr
771722.3	Gallons Diesel Fuel

EPA Tanks Model Negligible

V. Existing Air Quality

MAQP #3320-04 is issued for the operation of a portable drum mix asphalt plant to be initially located in Section 31, Township 28 North, Range 21 West, in Yellowstone County, Montana. MAQP #3320-04 will also cover the plant while operating at any location within Montana, excluding those counties that have a Department-approved permitting program, those areas considered tribal lands, or those areas in or within 10 kilometers (km) of certain PM_{10} nonattainment areas (where Addendum #5 will apply). In the view of the Department, the amount of controlled emissions generated by this facility will not exceed any set ambient standard. In addition, this source is portable and any air quality impacts will be minimal.

VI. Air Quality Impacts

MAQP #3320-04 will cover the operations of this portable drum mix asphalt plant while operating in those areas within Montana, classified as being in attainment with federal ambient air quality standards, and those areas still undefined (not yet classified). Additionally, Addendum #5 will cover the asphalt plant operations during the summer months (April 1-September 30) at, in or within 10 km of certain PM_{10} nonattainment areas. Based on the information provided, the amount of controlled emissions generated by this facility will not exceed any set ambient air quality standard for operations in these areas. In addition, this source is portable and any air quality impacts will be minor and short-lived.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

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)

VIII. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an environmental assessment is not required.

Addendum #5
Hollow Contracting, Inc.
Montana Air Quality Permit (MAQP) #3320-04

An addendum to MAQP #3320-04 is hereby granted to Hollow Contracting, Inc. (Hollow) pursuant to Sections 75-2-204 and 75-2-211 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:

Hollow operates a portable drum mix asphalt plant at various locations throughout Montana. Equipment includes a 1997 Gencor asphalt plant with baghouse, two diesel generators, a diesel fuel storage tank and associated equipment including lime silo, screens, bins, mixer, conveyors, etc.

II. Seasonal and Site Restrictions

Addendum #5 applies to the Hollow facility while operating at any location in or within 10 km of certain PM_{10} nonattainment areas (Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte). Additionally, seasonal and site restrictions apply to the facility as follows:

A. During the winter season (October 1-March 31), Hollow would not be allowed to operate in or within 10 km of the listed PM_{10} nonattainment areas.

B. During the summer season (April 1-September 30), Hollow 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. Hollow shall comply with the limitations and conditions contained in Addendum #5 to MAQP #3320-04 while operating in or within 10 km of any of the previously listed PM_{10} nonattainment areas. Addendum #5 shall be valid until revoked or modified. The Department of Environmental Quality (Department) reserves the authority to modify Addendum #5 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 Conditions

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

2. All visible emissions from the asphalt plant stack shall not exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

3. Hollow shall not cause or authorize to be discharged into the atmosphere from any equipment, such as 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 an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

4. Hollow shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant area, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

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

6. Hollow plant production shall not exceed 3,600 tons during any rolling 24-hour time period (ARM 17.8.1204).

B. Operational Reporting Requirements

1. Hollow shall provide the Department with written notification of job completion within 10 working days of job completion (ARM 17.8.749).

2. If the 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).

3. Production information for the sites covered by this addendum must be submitted to the Department within 30 days of completion of the project. The information shall include (ARM 17.8.749):

   a. Tons of asphalt produced

   b. Daily hours of operation

   c. Type and amount of fuel used for the asphalt plant (hot mix dryer)

   d. Gallons of diesel fuel used for each of the two diesel generators (including the asphalt heater)

   e. Fugitive dust information consisting of a listing of all plant vehicles, including the following for each vehicle type:

i. Number of vehicles
ii. Vehicle type
iii. Vehicle weight, loaded
iv. Vehicle weight, unloaded
v. Number of tires on vehicle
vi. Average trip length
vii. Number of trips per day per vehicle
viii. Average vehicle speed
ix. Area of activity
x. Vehicle fuel usage (gasoline and diesel) annual total

f. Fugitive dust control for haul roads and general plant area:

i. Hours of operation of water trucks
ii. Application schedule for chemical dust suppressant, if applicable

4. Hollow shall document, by day, the total asphalt production. Hollow shall sum the total asphalt production during the previous 24 hours to verify compliance with the limitation in Section III.A.6. A written report of compliance and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted and may be submitted along with the annual emissions inventory (ARM 17.8.752).

Addendum #5 Analysis
Hollow, LLC
Montana Air Quality Permit (MAQP) #3320-04

I. Permitted Equipment

Hollow, LLC (Hollow) owns and operates a portable asphalt plant (maximum capacity 150 tons per hour (TPH)). Equipment used at the facility includes, but is not limited to the following:

- 1997 Gencor counterflow drum mix asphalt plant (up to 150 TPH) with baghouse (fired on natural gas, propane, or fuel oil)
- (1) Diesel Generator (up to 75 horsepower) used to fire the asphalt heater
- (1) Diesel Generator (up to 800 horsepower) used to fire the asphalt plant
- Associated equipment (lime silo, elevator, screens, bins, mixer, conveyors, etc.)
- Fuel Oil Storage Tank (up to 10,000 gallons)

II. Source Description

For a typical operational set-up, stockpiled aggregate is loaded into the cold feeder. The aggregate is dispensed from the bins, and dumped onto feeder conveyors that transfer the aggregate to the drum mix dryer. The aggregate travels through the rotating drum where asphalt oil and lime is added to the dryer. The dryer drum mixes the asphalt oil, lime, and the aggregate. The resulting hot-mix asphalt is loaded into a hot mix asphalt storage silo where it is stored until the asphalt is dumped into trucks for transport to the project site.

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 of 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 in emissions because of the 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 public notice is sent to the Department

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

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

IV. Emission Inventory

	Emissions Lbs/Day [PTE]						
Emission Source	PM	PM_{10}	$PM_{2.5}$	CO	NOx	SO_2	VOC
1997 Gencor Asphalt Plant with Baghouse	131.87	89.50	89.50	468.00	198.00	200.88	115.20
Aggregate Handling & Storage Piles	17.91	5.30	1.28	--	--	--	--
Aggregate Conveying	1.01	0.33	0.09	--	--	--	--
Lime Silo transfer & Conveying	0.32	0.16	0.10	--	--	--	--
Asphalt Storage & Handling	2.11	2.11	2.11	4.25	--	--	43.87
Asphalt Load-Out	1.88	1.88	1.88	4.86	--	--	14.97
Generator Totals 875 hp	28.88	46.20	8.17	140.28	651.00	43.05	52.80
Unpaved Roadways	60.18	16.59	1.66	--	--	--	--
Diesel Fuel Storage Tank	--	--	--	--	--	--	Negl.
TOTAL EMISSIONS >	244.15	162.06	104.79	617.39	849.00	243.93	226.84

a. Emission Inventory reflects enforceable limits on hours of operation and production output to keep allowable emissions below the Title V threshold as well as below 80 tpy level.

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
TPY, tons per year
VOC, volatile organic compounds

1997 Gencor Asphalt Plant with Baghouse

Production Rate: 150 Tons/Hour (Maximum) 1314000 tons/year (Maximum)
675000 tons/year (Restricted Maximum)

Operating Schedule: 4500 Hours/Year (Restricted Maximum)
Power Plant: 800 hp Diesel Generator (Asphalt Plant)
75 hp Diesel Generator (Supplemental Power)
Note: Asphalt Plant May Operate On Utility/commercial Power

Air Flow[Volume] 16,026.00 dscfm [corrected]
Stack Test Results gr/dscf
Test Throughput Demonstrated N/A tons/hour

Particulate Emissions: Dryer Stack NSPS Based

PM Emissions (controlled):

Emission Rate 0.04 gr/dscf [40 CFR NSPS, Subpart I Limit]
Calculations (0.04 gr/dscf) * (16026 dscfm) * (60 min/hr) * (0.000143 lb/gr) = 5.49 lbs/hr

	(5.49 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	12.36	TPY
	Daily Calculations (5.49 lbs/hr) * (24 hrs/day) =	131.9	lb/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) * (150 tons/hour) =	6.75	lbs/hr
	(6.75 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	15.19	TPY
	Daily Calculations (6.75 lbs/hr) * (24 hrs/day) =	162.0	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) * (150 tons/hour) =	3.45	lbs/hr
	(3.45 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	7.76	TPY
	Daily Calculations (3.45 lbs/hr) * (24 hrs/day) =	89.5	lb/day
		(Since $PM_{2.5}$ cannot exceed PM_{10})	

Filterable PM (Controlled)

Emission Factor	0.026 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]		
Calculations	(0.026 lbs/ton) * (150 tons/hour) =	3.90	lbs/hr
	(3.90 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	8.78	TPY
	Daily Calculations (3.90 lbs/hr) * (24 hrs/day) =	93.6	lb/day

Condensable PM (Controlled)

Emission Factor	0.0194 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]		
Calculations	(0.0194 lbs/ton) * (150 tons/hour) =	2.91	lbs/hr
	(2.91 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	6.55	TPY
	Daily Calculations (2.91 lbs/hr) * (24 hrs/day) =	69.8	lb/day

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

Emission Factor	0.02486 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]		
Calculations	(0.02486 lbs/ton) * (150 tons/hour) =	3.73	lbs/hr
	(3.73 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	8.39	TPY
	Daily Calculations (3.73 lbs/hr) * (24 hrs/day) =	89.5	lb/day

CO Emissions:

Emission Factor	0.13 lbs/ton processed [AP-42 Table 11.1-7, 3/04; EF based on fuel oil]		
Calculations	(0.13 lbs/ton) * (150 tons/hr) =	19.50	lbs/hr
	(19.50 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	43.88	TPY
	Daily Calculations (19.50 lbs/hr) * (24 hrs/day) =	468.0	lb/day

NO_X Emissions:

Emission Factor	0.055 lbs/ton processed [AP-42 Table 11.1-7, 3/04; EF based on fuel oil]		
	(0.055 lbs/ton) * (150 tons/hr) =	8.25	lbs/hr
Calculations			
	(8.25 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	18.56	TPY
	Daily Calculations (8.25 lbs/hr) * (24 hrs/day) =	198.0	lb/day

SO_2 Emissions:

Emission Factor	0.0558 lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on waste oil]		
Calculations	(0.0558 lbs/ton) * (150 tons/hr) =		8.37	lbs/hr
	(8.37 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		18.83	TPY
	Daily Calculations (8.37 lbs/hr) * (24 hrs/day) =		200.9	lb/day

VOC Emissions:

Emission Factor	0.032 lbs/ton processed	[AP-42 Table 11.1-8, 3/04; EF based on fuel oil]		
Calculations	(0.032 lbs/ton) * (150 tons/hr) =		4.80	lbs/hr
	(4.80 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		10.80	TPY
	Daily Calculations (4.80 lbs/hr) * (24 hrs/day) =		115.2	lb/day

Aggregate Handling & Storage Piles

Process Rate:	150	tons/hour
Number of Piles:	1	pile
		Transfer
Operating Hours:	4500	hour/year

Particulate Emissions:

Emission Factor EF = k (0.0032) * (U/5)^1.3 / (M / 2)^1.4 [AP-42 13.2.4, 11/06]

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) * (150 tons/hr) * (1 pile) =		0.75	lbs/hr
	(0.75 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		1.68	TPY
	Daily Calculations (0.75 lbs/hr) * (24 hrs/day) =		17.9	lb/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) * (150 tons/hr) * (1 pile) =		0.35	lbs/hr
	(0.35 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.79	TPY
	Daily Calculations (0.35 lbs/hr) * (24 hrs/day) =		8.5	lb/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) * (150 tons/hr) * (1 pile) =		0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.12	TPY
	Daily Calculations (0.05 lbs/hr) * (24 hrs/day) =		1.3	lb/day

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

Process Rate:	150	tons/hour
Number of Transfers:	2	Conveyor Transfers [Based on process flow diagram]
Operating Hours:	4500	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) * (150 tons/hr) * (2 Transfers) =		0.04	lbs/hr
	(0.04 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.09	TPY
	Daily Calculations (0.04 lbs/hr) * (24 hrs/day) =		1.0	lb/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) * (150 tons/hr) * (2 Transfers) =		0.01	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.03	TPY
	Daily Calculations (0.01 lbs/hr) * (24 hrs/day) =		0.3	lb/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) * (150 tons/hr) * (2 Transfers) =		0.0039	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
	Daily Calculations (0.00 lbs/hr) * (24 hrs/day) =		0.1	lb/day

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

Process Rate:	150	tons/hour
Operating Hours:	4500	hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.000088 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98]		
Calculations	(0.000088 lbs/ton) * (150 tons/hr) =		0.013	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.03	TPY
	Daily Calculations (0.01 lbs/hr) * (24 hrs/day) =		0.3	lb/day

PM_{10} Emissions (controlled):

Emission Factor	0.000044 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98] 50% of PM		
Calculations	(0.000044 lbs/ton) * (150 tons/hr) =		0.007	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
	Daily Calculations (0.01 lbs/hr) * (24 hrs/day) =		0.2	lb/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000026 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98] 30% of PM		
Calculations	(0.000026 lbs/ton) * (150 tons/hr) =		0.004	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
	Daily Calculations (0.00 lbs/hr) * (24 hrs/day) =		0.1	lb/day

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

Process Rate: 150 tons/hour
Operating Schedule: 4500 tons/year

Particulate Emissions:

Emission Factor $EF = 0.000332+0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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) * (150 tons/hr) =	0.09	lbs/hr
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY
	Daily Calculations (0.09 lbs/hr) * (24 hrs/day) =	2.1	lb/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) * (150 tons/hr) =	0.09	lbs/hr
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY
	Daily Calculations (0.09 lbs/hr) * (24 hrs/day) =	2.1	lb/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) * (150 tons/hr) =	0.09	lbs/hr
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY
	Daily Calculations (0.09 lbs/hr) * (24 hrs/day) =	2.1	lb/day

CO Emissions:

Emission Factor $EF = 0.00488(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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]

EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) = 0.0012 lbs/ton HMA

Calculations	(0.0012 lbs/ton) * (150 tons/hr) =	0.18	lbs/hr
	(0.18 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.40	TPY
	Daily Calculations (0.18 lbs/hr) * (24 hrs/day) =	4.2	lb/day

VOC Emissions:

Emission Factor $EF = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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) * (150 tons/hr) =	1.83	lbs/hr
	(1.83 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	4.11	TPY
	Daily Calculations (1.83 lbs/hr) * (24 hrs/day) =	43.9	lb/day

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

Process Rate: 150 tons/hour
Operating Schedule: 4500 hours/year

Particulate Emissions:

Emission Factor EF = $0.000181+0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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 = 325°F [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) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY
	Daily Calculations (0.08 lbs/hr) * (24 hrs/day) =	1.9	lb/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) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY
	Daily Calculations (0.08 lbs/hr) * (24 hrs/day) =	1.9	lb/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) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY
	Daily Calculations (0.08 lbs/hr) * (24 hrs/day) =	1.9	lb/day

CO Emissions:

Emission Factor EF = $0.00558(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
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 = 325°F [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) * (150 tons/hr) =	0.20	lbs/hr
	(0.20 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.46	TPY
	Daily Calculations (0.20 lbs/hr) * (24 hrs/day) =	4.9	lb/day

VOC Emissions:

Emission Factor EF = $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

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 = 325°F [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) =	0.00416	lbs/ton HMA produced
Calculations	(0.00416 lbs/ton) * (150 tons/hr) =	0.62	lbs/hr
	(0.62 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	1.40	TPY
	Daily Calculations (0.62 lbs/hr) * (24 hrs/day) =	15.0	lb/day

Diesel Engines:

Primary Diesel Engine Generator

Engine Rating Total	875	hp
Hours of Operation:	4500	hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY
	Daily Calculations (1.93 lbs/hr) * (15 hrs/day) =	28.9	lb/day

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY
	Daily Calculations (1.93 lbs/hr) * (24 hrs/day) =	46.2	lb/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0479 lb/MMBtu) * (0.00 MMBtu/hr) =	0.29	lbs/hr
	(0.29 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.66	TPY
	Daily Calculations (0.29 lbs/hr) * (24 hrs/day) =	7.0	lb/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0077 lb/MMBtu) * (6.125 MMBtu/hr) =	0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.11	TPY
	Daily Calculations (0.05 lbs/hr) * (24 hrs/day) =	1.1	lb/day

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (875 hp) =	5.85	lbs/hr
	(5.85 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	13.15	TPY
	Daily Calculations (5.85 lbs/hr) * (24 hrs/day) =	140.3	lb/day

NOx Emissions:

Emission Factor	0.031 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.031 lb/hp-hr) * (875 hp) =	27.13	lbs/hr
	(27.13 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	61.03	TPY
	Daily Calculations (27.13 lbs/hr) * (24 hrs/day) =	651.0	lb/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (875 hp) =	1.79	lbs/hr
	(1.79 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.04	TPY
	Daily Calculations (1.79 lbs/hr) * (24 hrs/day) =	43.1	lb/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (875 hp) =	2.20	lbs/hr
	(2.20 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.95	TPY
	Daily Calculations (2.20 lbs/hr) * (24 hrs/day) =	52.8	lb/day

Unpaved Roadways (Haul Roads)

Miles Travelled: 5 Miles/Day [Estimate]
Vehicle Weight: < 50 Tons

Emission Factor $EF = k(s/12)^{a} * (W/3)^{b}$ [AP-42 13.2.2.2, 11/06]
where:

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

PM Emissions:

Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =	12.04	lbs/VMT
Calculations	(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
	Daily Calculations (60.18 lbs/day) * (1 day) =	60.2	lb/day

PM_{10} Emissions:

Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =	3.32	lbs/VMT

Calculations	(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
	Daily Calculations (16.59 lbs/day) * (1 day) =	16.6	lb/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =	0.33	lbs/VMT
Calculations	(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
	Daily Calculations (1.66 lbs/day) * (1 day) =	1.7	lb/day

Diesel Fuel Storage Tank

VOC Emissions
(Taken from previous emission inventory = EPA Tanks Model Negligible

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for PM_{10}. Due to exceedances of the NAAQS 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, 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 determined these sources to be the major contributors to PM_{10} emissions.

Addendum #5 to MAQP #3320-04 is for a portable asphalt plant to be located in or within 10 km of certain PM_{10} nonattainment areas during the summer season (April 1 through September 30). Summertime operations may include areas in or within 10 km of certain PM_{10} nonattainment areas, including, but not limited to Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte.

VI. Air Quality Impacts

The amount of controlled emissions generated by the operation will not exceed any set ambient standard. In addition, Addendum #5 to MAQP #3320-04 contains operational limitations and conditions that will be protective of the PM_{10} nonattainment areas.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined that there are no taking or damaging implications.

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)

VIII. Environmental Assessment

This permitting action will result in a decrease in potential emissions from the facility and is considered an administrative action; therefore, an environmental assessment is not required.

Addendum Analysis Prepared by: Rhonda Payne
Date: September 26, 2016