



Montana Department of
ENVIRONMENTAL **Q**UALITY

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May 29, 2013

Sam Weyers
P.O. Box 5370
Kalispell, MT 59903

Dear Mr. Weyers:

Montana Air Quality Permit #4522-01 is deemed final as of May 29, 2013, by the Department of Environmental Quality (Department). This permit is for a portable drum mix 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 A. Merkel
Air Permitting Supervisor
Air Resources Management Bureau
(406) 444-3626

Tashia Love
Environmental Science Specialist
Air Resources Management Bureau
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JM:TL
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4522-01

Nelcon, Inc.
P.O. Box 5370
Kalispell, MT 59903

May 29, 2013



MONTANA AIR QUALITY PERMIT

Issued To: Nelcon, Inc.
P.O. Box 5370
Kalispell, MT 59903

MAQP: #4522-01
Administrative Amendment (AA)
Received: 04/10/2013
Department Decision on AA: 05/10/2013
Permit Final: 05/29/2013
AFS #: 777-4522

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Nelcon, Inc. (Nelcon) 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. Plant Location

Nelcon operates a portable drum mix asphalt plant located in Section 36, Township 30 North, Range 21 West, in Flathead County, Montana. However, MAQP #4522-01 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality – Air Resources Management Bureau (Department)-approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.* An addendum will be required for locations in or within 10 km of certain PM₁₀ nonattainment areas.

Addendum #2 applies to the Nelcon facility while operating at any location in or within 10 km of certain PM₁₀ nonattainment areas during the summer season (April 1 – September 30) and at sites approved by the Department during the winter season (October 1 – March 31).

B. Current Permit Action

On April 10, 2013, the Department received a request from Nelcon for the addition of a 70 horsepower (hp) diesel-fired generator engine to the permit. The current permit action reflects this addition and updates the homepit location.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Asphalt plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) from the asphalt drum mix dryer exhaust (ARM 17.8.340, ARM 17.8.752, and 40 Code of Federal Regulations (CFR) 60, Subpart I).
2. All visible emissions from any non-New Source Performance Standards (NSPS) affected equipment shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
3. Nelcon shall not cause or authorize to be discharged into the atmosphere from the asphalt plant stack any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60, Subpart I).

4. Nelcon shall not cause or authorize to be discharged into the atmosphere from dryers; 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 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).
5. Nelcon 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).
6. Nelcon 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 and 5 (ARM 17.8.749).
7. A device to measure the pressure drop (magnehelic gauge, manometer, etc.) on the control device (baghouse) must be installed and maintained. Pressure drop must be measured in inches of water. Temperature indicators at the control device inlet and outlet must be installed and maintained (ARM 17.8.749).
8. 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).
9. Hours of operation of the asphalt plant (including the engines/generators) shall be limited to 4,000 hours per rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).
10. Asphalt production is limited to 1,000,000 tons per year during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).
11. Nelcon shall not operate more than three diesel engine/generators at any given time and the engines shall not have a combined maximum capacity greater than 1,092 hp (ARM 17.8.749).
12. The 70 hp diesel-fired generator engine shall be Environmental Protection Agency (EPA) Tier 3 certified or higher under 40 CFR Part 89 (ARM 17.8.749).
13. If the permitted equipment is used in conjunction with any other equipment owned or operated by Nelcon, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons of a pollutant during any rolling 12-month period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).
14. Nelcon shall comply with all applicable standards and limitations, monitoring, 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).
15. Nelcon shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart III, *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 III; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Within 60 days after achieving maximum production, but no later than 180 days after initial start-up, an EPA Methods 1-5 source tests shall be performed on the asphalt plant 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 Sections II.A.2 and II.A.3. Testing shall continue on an every-four-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. 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).
3. Pressure drop on the control device and temperature must be recorded daily and kept on site according to Section II.C.4 (ARM 17.8.749).
4. 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).
5. Nelcon 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 Reporting Requirements

1. If this portable asphalt plant is moved to another 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. Nelcon 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 not be limited to, all sources of emissions identified in the emission inventory contained in 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).

3. Nelcon 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 startup 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(l)(d) (ARM 17.8.745).
4. Nelcon 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 Nelcon as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).
5. Nelcon shall document, by month, the hours of operation of the facility and each associated generator engine. By the 25th day of each month, Nelcon shall calculate the hours of operation of the facility for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.9. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
6. Nelcon shall document, by month, the asphalt production from the facility. By the 25th day of each month, Nelcon shall calculate the asphalt production from the facility for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.10. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
7. Nelcon shall annually certify that its emissions are less than those that would require the facility 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 NSPS-affected equipment, Nelcon 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, Nelcon 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, Nelcon shall submit written notification to the Department of the initial start-up date of the affected equipment (ARM 17.8.749).

SECTION III: Addendum

Nelcon shall comply with all conditions in Addendum #2 to MAQP #4522-01, as applicable (ARM 17.8.749).

SECTION IV: General Conditions

- A. Inspection – Nelcon 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 Nelcon fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Nelcon 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. Air Quality Operation Fees – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Nelcon 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. Nelcon shall comply with the conditions contained in this permit while operating in any location in Montana, except areas considered tribal lands.

Montana Air Quality Permit (MAQP) Analysis
Nelcon, Inc.
MAQP #4522-01

I. Introduction/Process Description

Nelcon, Inc. (Nelcon) owns and operates a portable drum mix asphalt plant and associated equipment.

A. Permitted Equipment

1. A portable drum mix asphalt plant and associated equipment with a maximum production capacity of 250 tons per hour (TPH).
2. Three diesel-fired engine/generators with a combined maximum capacity of up to 1,092 horsepower (hp).

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 into the cold aggregate feed bins. The cold aggregate is then transferred from the cold aggregate feed bins via conveyor to the drum mixer. The cold aggregate is dried and heated within the drum mixer which is fired with number 2 fuel oil and exhausts through the primary baghouse. Mineral filler and asphalt oil are then introduced into the drum mixer. Mineral filler is delivered from a lime storage guppy to the drum via an enclosed lime silo/feed auger system. Particulate emissions from the mineral filler storage and feeder system are routed to the primary baghouse. Asphalt oil is delivered through hoses from the portable hot oil heater tank. Once all the raw materials have been introduced into the drum mixer they are continuously mixed and heated by the drum mixer burner. A primary diesel-fired generator powers the operation. The hot oil heater tank uses its own smaller diesel-fired generator to provide electricity to the heating system.

After heating and mixing is completed, the asphalt product is transferred from the drum mixer to the asphalt product silo via a conveyor. The asphalt remains in the asphalt silo until it is loaded into trucks for transport to a given job location.

C. Permit History

On January 29, 2010, Nelcon submitted a complete permit application to operate a portable drum mix asphalt plant. Equipment included a drum mix asphalt plant with a maximum production capacity of 250 TPH, two diesel-fired engine/generators with a combined maximum capacity of up to 1,021 hp, and associated equipment. In addition, Nelcon also requested an addendum to operate in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) nonattainment areas. The application was assigned **MAQP #4522-00** and **Addendum #1** was established. The facility homepit was in Section 29, Township 27 North, Range 3 West, in Pondera County, Montana.

D. Current Permit Action

On April 10, 2013, the Department of Environmental Quality – Air Resources Management Bureau (Department) received a request from Nelcon for the addition of a 70 hp diesel engine generator to the permit. The engine added will be Environmental Protection Agency (EPA) Tier 3 rated and will result in less than 5 tons per year (TPY) of emissions of any pollutant. The permit is being amended under ARM 17.8.764 as an administrative amendment authorized by ARM 17.8.745(2). The current permit action reflects this addition and updates the homepit location. **MAQP #4522-01** replaces MAQP#4522-00 and **Addendum #2** replaces Addendum #1.

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 location 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).

Nelcon 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 as to create a public nuisance.

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 17.8.213 Ambient Air Quality Standard for Ozone
5. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
6. ARM 17.8.221 Ambient Air Quality Standard for Visibility
7. ARM 17.8.223 Ambient Air Quality Standard for Particulate Matter with an Aerodynamic Diameter of 10 Microns or Less (PM₁₀)

Nelcon 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. (2) Under this rule, Nelcon 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 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Nelcon 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 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 Nelcon, the asphalt plant equipment to be used under MAQP #4522-01 is subject to this subpart because the facility is a hot mix asphalt facility.

- c. 40 CFR 60, Subpart III – 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 Nelcon, some of the CI ICE equipment to be used under MAQP #4522-01 may be subject to this subpart if they remain at a single location long enough to meet the definition of a stationary source.
7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below.
- a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a National Emission Standard for Hazardous Air Pollutants (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. Based on the information submitted by Nelcon, the RICE equipment to be used under MAQP #4522-01 may be subject to this subpart if they remained at the same location for 12 months or longer.
- 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 an applicant 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; the 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 person to obtain an air quality permit or permit modification to construct, modify, or use any asphalt plant, crusher or screen that has the potential to emit (PTE) greater than 15 TPY of any pollutant. Nelcon has a PTE greater than 15 TPY of particulate matter, PM₁₀, nitrogen oxides, carbon monoxide, and volatile organic compounds; 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 Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under 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, modification, or use of a source. Nelcon 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. Nelcon was not required to notify the public of the current permit action because the current action is considered an administrative action.
 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 Nelcon 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 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 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
13. 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).
14. 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.
15. 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 TPY 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 TPY of any pollutant;
 - b. PTE > 10 TPY of any one HAP, PTE > 25 TPY of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 TPY of PM₁₀ in a serious PM₁₀ 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 #4522-01 for Nelcon, the following conclusions were made:
 - a. The facility's PTE is less than 100 TPY for any pollutant. Nelcon has accepted federally-enforceable permit operating limits to maintain the facility's PTE to less than 100 TPY for any pollutant.
 - b. The facility's PTE is less than 10 TPY for any one HAP and less than 25 TPY of all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is subject to a current NSPS (40 CFR 60, Subpart I and Subpart III).
 - e. This facility is subject to area source provisions of a current NESHAP (40 CFR 63, Subpart ZZZZ).
 - f. This source is not a Title IV affected source or a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.
 - h. 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 by ARM 17.8.1204(3) 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.

Based on these facts, the Department has determined that Nelcon will be a minor source of emissions as defined under Title V because Nelcon requested to take federally enforceable limitations to keep them out of 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.

III. BACT Determination

A BACT determination is required for each new or modified source. Nelcon 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. Nelcon was not required to submit a BACT analysis as the current permit action is considered an administrative amendment. However, the EPA Tier 3 certified 70 hp engine without additional controls is consistent with other similar BACT determinations.

IV. Emission Inventory

Emission Source	TPY						
	PM	PM ₁₀	PM _{2.5}	NO _x	CO	VOC	SO ₂
Cold Aggregate Storage Piles	1.65	0.78	0.12	--	--	--	--
Cold Aggregate Handling/Conveyors	0.14	0.05	0.01	--	--	--	--
250 TPH Drum Mix Asphalt Plant Dryer	17.63	8.82	3.70	27.50	65.00	16.00	4.35
Asphalt Product Silo Filling	0.30	0.30	0.30	--	0.59	6.09	--
Plant Load-Out	0.26	0.26	0.26	--	0.67	1.95	--
Haul Roads / Vehicle Traffic	2.60	0.72	0.07	--	--	--	--
986 hp Diesel Engine Main Generator	4.34	4.34	4.34	61.13	13.17	4.96	4.04
36 hp Diesel Engine: Asphalt Oil Heater	0.16	0.16	0.16	2.23	0.48	0.18	0.15
70 hp Diesel Engine Generator (Tier 3)	0.09	0.09	0.09	1.08	1.14	0.35	0.29
Total Emissions	27.17	15.52	9.05	91.94	81.05	29.53	8.83

NOTES:

PM_{2.5} Particulate matter with an aerodynamic diameter of 2.5 microns or less

NO_x Nitrogen oxides

CO Carbon monoxide

VOC Volatile organic compounds

SO₂ Sulfur dioxide

PM, PM₁₀, and PM_{2.5} emissions presented in the table represent the sum of the filterable and condensable particulate matter (CPM) fractions. All CPM is considered to be PM_{2.5}.

Hours of operation are restricted to 4,400 hours per year by federally enforceable permit conditions to limit the potential emissions below the major source threshold.

Maximum Process Rate = 250 ton/hr (Maximum plant process rate)

Maximum Hours of Operation = 4,000 hrs/yr

Maximum Annual Production = 1,000,000 TPY

Operating Parameters:

Plant Elevation:	3800	ft.	(estimate)
Actual Pressure:	26.12	in. Hg	(estimate)
Standard Pressure:	29.92	in. Hg	
Actual Flowrate (V2):	45,000	acfm	(Company Information)
Standard Temp:	68	F	(528 R)
Assumed Stack Temp.	250	F	(710 R)
Standard Volumetric Flowrate	V1 = V2 (P2/P1) (T1/T2)		
Correction:			
Standard Volumetric Flowrate:	V1=45000 acfm * (26.12 in. Hg / 29.92 in. Hg) * (528 R / 710 R)		
Standard Volumetric Flowrate (V1):	29,215	scfm	

Stack Gas Moisture Content (M): 12 % (estimate)
 Dry Standard Volumetric Flowrate: $=V_1 \cdot (1 - M/100) = 29,215 \text{ scfm} \cdot (1 - 12/100)$
 Dry Standard Volumetric Flowrate: 25,709 dscfm

Cold Aggregate Storage Piles

Filterable PM Emissions:

Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.

Emission Factor = $k (0.0032) \cdot (U/5)^{1.3} \cdot (M / 2)^{-1.4} = 0.00331 \text{ lb/ton}$

Where: k = particle size multiplier = 0.74 (Value for PM < 30 microns per AP 42, Sec. 13.2.4.3, 11/06)

U = mean wind speed = 10 mph (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

M = material moisture content = 3% (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

Calculation: $(250 \text{ ton/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.00331 \text{ lb/ton}) \cdot (\text{ton}/2000 \text{ lb}) \cdot (1 \text{ piles}) = 1.65 \text{ ton/yr}$

Filterable PM₁₀ Emissions:

Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.

Emission Factor = $k (0.0032) \cdot (U/5)^{1.3} \cdot (M / 2)^{-1.4} = 0.00156 \text{ lb/ton}$

Where: k = particle size multiplier = 0.35 (Value for PM < 10 microns per AP 42, Sec. 13.2.4.3, 11/06)

U = mean wind speed = 10 mph (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

M = material moisture content = 3% (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

Calculation: $(250 \text{ ton/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.00156 \text{ lb/ton}) \cdot (\text{ton}/2000 \text{ lb}) \cdot (1 \text{ piles}) = 0.78 \text{ ton/yr}$

Filterable PM_{2.5} Emissions:

Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.

Emission Factor = $k (0.0032) \cdot (U/5)^{1.3} \cdot (M / 2)^{-1.4} = 0.00024 \text{ lb/ton}$

Where: k = particle size multiplier = 0.053 (Value for PM < 2.5 microns per AP 42, Sec. 13.2.4.3, 11/06)

U = mean wind speed = 10 mph (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

M = material moisture content = 3% (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

Calculation: $(250 \text{ ton/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.00024 \text{ lb/ton}) \cdot (\text{ton}/2000 \text{ lb}) \cdot (1 \text{ piles}) = 0.12 \text{ ton/yr}$

Cold Aggregate Handling/Conveyors

Filterable PM Emissions:

Emission Factor = 0.00014 lb/ton (0.0030 uncontrolled, 0.00014 controlled, AP 42, Table 11.19.2-2, 8/04)

Calculation: $(250 \text{ ton/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.00014 \text{ lb/ton}) \cdot (\text{ton}/2000 \text{ lb}) \cdot (2 \text{ transfer}) = 0.14 \text{ ton/yr}$

Filterable PM₁₀ Emissions:

Emission Factor = 0.000046 lb/ton (0.00110 uncontrolled, 0.000046 controlled, AP 42, Table 11.19.2-2, 8/04)

Calculation: $(250 \text{ ton/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.000046 \text{ lb/ton}) \cdot (\text{ton}/2000 \text{ lb}) \cdot (2 \text{ transfer}) = 0.05 \text{ ton/yr}$

Filterable PM_{2.5} Emissions:

Emission Factor = 0.000013 lb/ton (0.000013 controlled, AP 42, Table 11.19.2-2, 8/04)

Calculation: $(250 \text{ ton/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.000013 \text{ lb/ton}) \cdot (\text{ton}/2000 \text{ lb}) \cdot (2 \text{ transfer}) = 0.01 \text{ ton/yr}$

250 TPH Asphalt Drum Mix Dryer

Filterable PM Emissions:

Emission Factor = 0.04 gr/dscf (permit limit)

Calculation: $(0.04 \text{ gr/dscf}) \cdot (25,709 \text{ dscfm}) \cdot (1 \text{ lb} / 7000 \text{ gr}) \cdot (60 \text{ min/hr}) = 8.81 \text{ lb/hr}$

Calculation: $(8.81 \text{ lb/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.0005 \text{ ton/lb}) = 17.63 \text{ ton/yr}$

Filterable PM₁₀ Emissions:

Emission Factor = 0.02 gr/dscf (permit limit, assume 50% of TSP is PM10, Department policy)

Calculation: $(0.02 \text{ gr/dscf}) \cdot (25,709 \text{ dscfm}) \cdot (1 \text{ lb} / 7000 \text{ gr}) \cdot (60 \text{ min/hr}) = 4.41 \text{ lb/hr}$

Calculation: $(4.41 \text{ lb/hr}) \cdot (4000 \text{ hrs/yr}) \cdot (0.0005 \text{ ton/lb}) = 8.82 \text{ ton/yr}$

Filterable PM_{2.5} Emissions:

Emission Factor = 0.0084 gr/dscf (permit limit, assume 21% of TSP is PM_{2.5}, AP 42, Table 11.1-4, 3/04)

Calculation: (0.0084 gr/dscf) * (25,709 dscfm) * (1 lb / 7000 gr) * (60 min/hr) = 1.85 lb/hr

Calculation: (1.85 lb/hr) * (4000 hrs/yr) * (0.0005 ton/lb) = 3.70 ton/yr

Condensable PM_{2.5} Emissions:

Emission Factor = 0.0194 lb/ton (fabric filter, AP 42, Table 11.1-3, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.0194 lb/ton) * (ton/2000 lb) = 9.70 ton/yr

CO Emissions:

Emission Factor = 0.13 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-7, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.13 lb/ton) * (ton/2000 lb) = 65.00 ton/yr

NO_x Emissions:

Emission Factor = 0.055 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-7, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.055 lb/ton) * (ton/2000 lb) = 27.50 ton/yr

SO₂ Emissions:

Emission Factor = 0.011 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-7, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.011 lb/ton) * (ton/2000 lb) = 5.50 ton/yr

VOC Emissions:

Emission Factor = 0.032 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-8, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.032 lb/ton) * (ton/2000 lb) = 16.00 ton/yr

Total HAPs Emissions:

Emission Factor = 0.0087 lb/ton (#2 fuel oil-fired dryer with fabric filter, AP 42, Table 11.1-10, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.0087 lb/ton) * (ton/2000 lb) = 4.35 ton/yr

*Asphalt Product Silo Filling***Filterable PM_{2.5} Emissions (Filterable = Total - Organic fraction, all PM < 2.5mm):**

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = 0.000332 + 0.00105(-V)e^{-(0.0251)(T + 460) - 20.43} - 0.00025 = 0.00033 lb/ton

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.00033 lb/ton) * (ton/2000 lb) = 0.17 ton/yr

Condensable PM_{2.5} Emissions (Organic PM = CPM):

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = 0.00105(-V)e^{-(0.0251)(T + 460) - 20.43} = 0.00025 lb/ton

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.00025 lb/ton) * (ton/2000 lb) = 0.13 ton/yr

VOC Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = 0.0504(-V)e^{-(0.0251)(T + 460) - 20.43} = 0.01219 lb/ton

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.01219 lb/ton) * (ton/2000 lb) = 6.09 ton/yr

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = 0.00488(-V)e^{-(0.0251)(T + 460) - 20.43} = 0.00118 lb/ton

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (4000 hrs/yr) * (0.00118 lb/ton) * (ton/2000 lb) = 0.59 ton/yr

Plant Load Out

Filterable PM_{2.5} Emissions (Filterable = Total - Organic fraction, all PM < 2.5mm):

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.000181 + 0.00141(-V)e^{((0.0251)(T + 460) - 20.43)} - 0.00034 = 0.00018 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

$$\text{Calculation: } (250 \text{ ton/hr}) * (4000 \text{ hrs/yr}) * (0.00018 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) = 0.09 \text{ ton/yr}$$

Condensable PM_{2.5} Emissions (Organic PM = CPM):

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.00141(-V)e^{((0.0251)(T + 460) - 20.43)} = 0.00034 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

$$\text{Calculation: } (250 \text{ ton/hr}) * (4000 \text{ hrs/yr}) * (0.00034 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) = 0.17 \text{ ton/yr}$$

VOC Emissions (VOC = 94% * TOC, AP-42, Table 11.1-16, 3/04):

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.0172(-V)e^{((0.0251)(T + 460) - 20.43)} * 94\% = 0.00391 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

$$\text{Calculation: } (250 \text{ ton/hr}) * (4000 \text{ hrs/yr}) * (0.00391 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) = 1.95 \text{ ton/yr}$$

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.00558(-V)e^{((0.0251)(T + 460) - 20.43)} = 0.00135 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

$$\text{Calculation: } (250 \text{ ton/hr}) * (4000 \text{ hrs/yr}) * (0.00135 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) = 0.67 \text{ ton/yr}$$

Haul Roads/Vehicle Traffic

Vehicle Miles Traveled (VMT) per Day = 5 VMT/day (Estimate)

$$\text{VMT per hour} = (5 \text{ VMT/day}) * (\text{day}/24 \text{ hrs}) = 0.21 \text{ VMT/hr}$$

PM Emissions:

Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.

$$\text{Emission Factor} = k * (s / 12)^a * (W / 3)^b = 12.46 \text{ lb/VMT}$$

Where: k = constant = 4.9 lbs/VMT (Value for PM₃₀/TSP, AP 42, Table 13.2.2-2, 11/06)

s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)

W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)

a = constant = 0.7 (Value for PM₃₀/TSP, AP 42, Table 13.2.2-2, 11/06)

b = constant = 0.45 (Value for PM₃₀/TSP, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)

$$\text{Calculation: } (4000 \text{ hrs/yr}) * (0.21 \text{ VMT/hr}) * (12.46 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) = 5.19 \text{ tons/yr (Uncontrolled Emissions)}$$

$$\text{Calculation: } (4000 \text{ hrs/yr}) * (0.21 \text{ VMT/hr}) * (12.46 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) * (1-50/100) = 2.60 \text{ tons/yr (Apply 50\% control efficiency)}$$

PM₁₀ Emissions:

Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.

Emission Factor = $k * (s / 12)^a * (W / 3)^b = 3.43 \text{ lb/VMT}$

Where: k = constant = 1.5 lbs/VMT (Value for PM₁₀, AP 42, Table 13.2.2-2, 11/06)
 s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)
 W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)
 a = constant = 0.9 (Value for PM₁₀, AP 42, Table 13.2.2-2, 11/06)
 b = constant = 0.45 (Value for PM₁₀, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)

Calculation: $(4000 \text{ hrs/yr}) * (0.21 \text{ VMT/hr}) * (3.43 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) = 1.43 \text{ tons/yr}$ (Uncontrolled Emissions)

Calculation: $(4000 \text{ hrs/yr}) * (0.21 \text{ VMT/hr}) * (3.43 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) * (1-50/100) = 0.72 \text{ tons/yr}$ (Apply 50% control efficiency)

PM_{2.5} Emissions:

Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.

Emission Factor = $k * (s / 12)^a * (W / 3)^b = 0.34 \text{ lb/VMT}$

Where: k = constant = 0.15 lbs/VMT (Value for PM_{2.5}, AP 42, Table 13.2.2-2, 11/06)
 s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)
 W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)
 a = constant = 0.9 (Value for PM_{2.5}, AP 42, Table 13.2.2-2, 11/06)
 b = constant = 0.45 (Value for PM_{2.5}, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)

Calculation: $(4000 \text{ hrs/yr}) * (0.21 \text{ VMT/hr}) * (0.34 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) = 0.14 \text{ tons/yr}$ (Uncontrolled Emissions)

Calculation: $(4000 \text{ hrs/yr}) * (0.21 \text{ VMT/hr}) * (0.34 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) * (1-50/100) = 0.07 \text{ tons/yr}$ (Apply 50% control efficiency)

*986 hp Diesel Engine Main Generator***Total PM/PM₁₀/PM_{2.5} Emissions:**

Emission Factor = 0.0022 lbs/hp-hr (All PM < 1 micron, AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(4000 \text{ hours}) * (986 \text{ hp}) * (0.0022 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 4.34 \text{ ton/yr}$

NO_x Emissions:

Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(4000 \text{ hours}) * (986 \text{ hp}) * (0.031 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 61.13 \text{ ton/yr}$

CO Emissions:

Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(4000 \text{ hours}) * (986 \text{ hp}) * (0.00668 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 13.17 \text{ ton/yr}$

VOC Emissions:

Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)

Calculation: $(4000 \text{ hours}) * (986 \text{ hp}) * (0.0025141 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 4.96 \text{ ton/yr}$

SO₂ Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(4000 \text{ hours}) * (986 \text{ hp}) * (0.00205 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 4.04 \text{ ton/yr}$

*36 hp Diesel Engine Asphalt Oil Heater***Total PM/PM₁₀/PM_{2.5} Emissions:**

Emission Factor = 0.0022 lbs/hp-hr (All PM < 1 micron, AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(4000 \text{ hours}) * (36 \text{ hp}) * (0.0022 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 0.16 \text{ ton/yr}$

NO_x Emissions:

Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (4000 hours) * (36 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 2.23 ton/yr

CO Emissions:

Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (4000 hours) * (36 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 0.48 ton/yr

VOC Emissions:

Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)

Calculation: (4000 hours) * (36 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 0.18 ton/yr

SO₂ Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (4000 hours) * (36 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.15 ton/yr

*70 hp Diesel Engine***PM-10 Emissions**

Emission Factor= 0.3 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (0.3 g/hp-hr)*(70 hp)*(0.002205 lbs/grams) = 0.05 lbs/hr

Calculation: (0.05 lbs/hr)*(4000 hrs/yr)*(0.0005 tons/lb) = 0.09 ton/yr

PM-2.5 Emissions

Emission Factor= 0.3 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (0.3 g/hp-hr)*(70 hp)*(0.002205 lbs/grams) = 0.05 lbs/hr

Calculation: (.05 lbs/hr)*(4000 hrs/yr)*(0.0005 tons/lb) = 0.09 ton/yr

NO_x Emissions:

Emission Factor= 3.5 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (3.5 g/hp-hr)*(70 hp)*(0.002205 lbs/gram) = 0.54 lbs/hr

Calculation: (.54 lbs/hr)*(4000 hrs/yr)*(0.0005 tons/lb)= 1.08 ton/yr

CO Emissions:

Emission Factor= 3.7 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (3.7 lb/hp-hr)*(70 hp)*(0.002205 lbs/gram)= 0.57 lbs/hr

Calculation: (.57 lbs/hr)*(4000 hrs/yr)*(0.0005 tons/lb) = 1.14 ton/yr

VOC Emissions:

Emission Factor= 0.00251 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (70 hp) * (4,000 hrs/yr) * (0.00251 g-hp-hr) * (ton/2000 lb) = 0.35 ton/yr

SO₂ Emissions:

Emission Factor= 0.00205 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (70 hp) * (4,000 hrs/yr) * (0.00205 g-hp-hr) * (ton/2000 lb) = 0.29 ton/yr

V. Air Quality Impacts

MAQP #4522-01 covers operation of this portable drum mix asphalt plant while operating in areas within Montana that are classified as being in attainment with federal ambient air quality standards and areas not yet classified, excluding counties that have a Department-approved permitting program and areas that are tribal lands. This permit contains conditions and limitations that would protect air quality for the site and surrounding area, and that would limit the facility’s emissions below the major source threshold. Based on the information provided, the amount of controlled emissions generated by this facility will not exceed any ambient air quality standard.

VI. Ambient Air Impact Analysis

The Department determined, based on ambient air modeling, that the impact from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

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?
	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

This permitting action is considered an administrative action, therefore, an Environmental Assessment is not required.

Analysis prepared by: Tashia Love
Date: April 17, 2013

Addendum 2
Nelcon, Inc.
Montana Air Quality Permit #4522-01

An addendum to Montana Air Quality Permit (MAQP) #4522-01 is hereby granted to Nelcon, Inc. (Nelcon) pursuant to Section 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:

Nelcon owns and operates a portable drum mix asphalt plant and associated equipment with a maximum production capacity of 250 tons per hour (TPH) and three diesel-fired engine/generators with a combined maximum capacity of up to 1,092 horsepower (hp).

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

Addendum 2 applies to the Nelcon facility while operating at any location in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) 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 PM₁₀ nonattainment area where Nelcon may operate is:
 - 1. Kalispell home pit – Sections 35 and 36, Township 30 North, Range 21 West; and
 - 2. Any other site that may be approved, in writing, by the Department of Environmental Quality (Department).
- B. During the Summer Season (April 1 – September 30) – Nelcon may operate at any location in or within 10 km of the Butte, Columbia Falls, Kalispell, Libby, Thompson Falls, and Whitefish PM₁₀ nonattainment areas.
- C. Nelcon shall comply with the limitations and conditions contained in Addendum 2 to MAQP #4522-01 while operating in or within 10 km of any of the previously identified PM₁₀ nonattainment areas. Addendum 2 shall be valid until revoked or modified. The Department reserves the authority to modify Addendum 2 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 – Winter and Summer Seasons

- 1. Asphalt 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 Code of Federal Regulations (CFR) 60, Subpart I).
- 2. Nelcon shall not cause or authorize to be discharged into the atmosphere from the asphalt plant stack any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).
- 3. Nelcon shall not cause or authorize to be discharged into the atmosphere from any equipment, such as screens or transfer points, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

4. Nelcon 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).
5. Nelcon shall treat all unpaved portions of the 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 (ARM 17.8.749).
6. The 70 hp diesel-fired generator engine shall be Environmental Protection Agency (EPA) Tier III certified or higher under 40 CFR Part 89 (ARM 17.8.749).
7. During the Summer Season, total asphalt production shall not exceed 6,000 tons per day (ARM 17.8.749).
8. During the Winter Season, total asphalt production shall not exceed 1,750 tons per day (ARM 17.8.749).
9. During the Winter Season, Nelcon shall not operate the permitted equipment for more than seven (7) hours per day (ARM 17.8.749).

B. Operational Reporting Requirements

1. If this portable 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. Tons of asphalt produced at each site,
 - b. Daily hours of operation at each site,
 - c. Hours of operation and sizes for each generator at each site, and
 - d. Fugitive dust information consisting of the total miles driven on unpaved roads for all plant vehicles.
3. Nelcon shall document, by day, the total asphalt production. Nelcon shall sum the total asphalt production for the previous day to verify compliance with the limitations in Section III.A.7 for summer operation and Section III.A.8 for winter operation. 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 17.8.749).
4. Nelcon shall document, by day, the total hours of operation. Nelcon shall sum the total hours of operation for the previous day to verify compliance with the limitation in Section III.A.9 during winter operation. 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 17.8.749).

5. During the Winter Season, Nelcon shall have available onsite at all times documentation for the primary diesel engine/generator that verifies its compliance with EPA nonroad diesel engine emission standards as described in Section III.A.6 (ARM 17.8.749).
6. During the Winter Season, Nelcon shall have available onsite at all times documentation for the 70 hp diesel-fired generator engine that verifies its compliance with EPA Tier 3 performance (ARM 17.8.749).

Addendum 2 Analysis
Nelcon, Inc.
Montana Air Quality Permit #4522-01

I. Permitted Equipment

Nelcon, Inc. (Nelcon) owns and operates a portable drum mix asphalt plant and associated equipment with a maximum production capacity of 250 tons per hour (TPH) and three diesel-fired engine/generators with a combined maximum capacity of up to 1,092 horsepower (hp).

II. Source Description

Nelcon uses this portable asphalt plant to produce asphalt for use in various construction operations. For a typical operational set-up, aggregate materials are taken from the on-site aggregate stockpiles and dumped via a front end loader into the cold aggregate feed bins. The cold aggregate is then transferred from the cold aggregate feed bins via conveyor to the drum mixer. The cold aggregate is dried and heated within the drum mixer which is fired with number 2 fuel oil and exhausts through the primary baghouse. Mineral filler and asphalt oil are then introduced into the drum mixer. Mineral filler is delivered from a lime storage guppy to the drum via an enclosed lime silo/feed auger system. Particulate emissions from the mineral filler storage and feeder system are routed to the primary baghouse. Asphalt oil is delivered through hoses from the portable hot oil heater tank. Once all the raw materials have been introduced into the drum mixer they are continuously mixed and heated by the drum mixer burner. A primary diesel-fired generator and small diesel-fired generator power the operation. The hot oil heater tank uses its own smaller diesel-fired generator to provide electricity to the heating system.

After heating and mixing is completed, the asphalt product is transferred from the drum mixer to the asphalt product silo via a conveyor. The asphalt remains in the asphalt silo until it is loaded into trucks for transport to a given job location.

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 Season (Unrestricted)*

Emission Source	pounds/day						
	PM**	PM ₁₀ **	PM _{2.5} **	NO _x	CO	VOC	SO ₂
Cold Aggregate Storage Piles	19.83	9.38	1.42	--	--	--	--
Cold Aggregate Handling/Conveyors	1.68	0.55	0.16	--	--	--	--
250 TPH Drum Mix Asphalt Plant Dryer	327.95	222.17	160.83	330.00	780.00	192.00	66.00
Asphalt Product Silo Filling	3.51	3.51	3.51	--	7.08	73.12	--
Batch Mix Plant Load-Out	3.14	3.14	3.14	--	8.10	23.46	--
Haul Roads / Vehicle Traffic	31.15	8.59	0.86	--	--	--	--
986 hp Diesel Engine Main Generator	52.06	52.06	52.06	733.58	158.08	59.49	48.51
36 hp Diesel Engine: Asphalt Oil Heater	1.90	1.90	1.90	26.78	5.77	2.17	1.77
70 hp Diesel Engine Generator (Tier 3)	0.0006	0.0006	0.0006	0.0065	0.0068	0.0093	0.00759
Total Emissions	324.82	184.90	107.48	1090.37	959.04	350.25	116.29

NOTES:

* Daily hours of operation are unrestricted during the Summer Season because PM₁₀ emissions are less than 547 pounds per day.

** PM, PM₁₀, and PM_{2.5} emissions presented in the table represent the sum of the filterable and condensable particulate matter (CPM) fractions. All CPM is considered to be PM_{2.5}.

PM Particulate Matter

PM₁₀ PM with an aerodynamic diameter of 10 microns or less

PM_{2.5} PM with an aerodynamic diameter of 2.5 microns or less

NO_x Nitrogen oxides

CO Carbon monoxide

VOC Volatile organic compounds

SO₂ Sulfur dioxide

Winter Season (Daily Hours of Operation Restricted to Seven Hours/Day)*

Emission Source	pounds/day						
	PM**	PM ₁₀ **	PM _{2.5} **	NO _x	CO	VOC	SO ₂
Cold Aggregate Storage Piles	5.78	2.74	0.41	--	--	--	--
Cold Aggregate Handling/Conveyors	0.49	0.16	0.05	--	--	--	--
250 TPH Drum Mix Asphalt Plant Dryer	95.65	64.80	46.91	96.25	227.50	56.00	19.25
Asphalt Product Silo Filling	1.03	1.03	1.03	--	2.06	21.33	--
Batch Mix Plant Load-Out	0.91	0.91	0.91	--	2.36	6.84	--
Haul Roads / Vehicle Traffic	9.09	2.50	0.25	--	--	--	--
986 hp Diesel Engine Main Generator	2.28	2.28	2.28	213.96	46.11	17.35	14.15
36 hp Diesel Engine: Asphalt Oil Heater	0.55	0.55	0.55	7.81	1.68	0.63	0.52
70 hp Diesel Engine Generator (Tier 3)	0.00018	0.00018	0.00018	0.0019	0.002	0.003	0.002
Total Emissions	115.78	74.97	52.40	318.02	279.71	102.15	33.92

NOTES:

* Daily Hours of operation are restricted to seven hours/day during the Winter Season to restrict potential PM₁₀ emissions to less than 82 pounds per day and to not exceed a modeled ambient air impact of 5 micrograms per cubic meter for a 24-hour period.

** PM, PM₁₀, and PM_{2.5} emissions presented in the table represent the sum of the filterable and condensable particulate matter (CPM) fractions. All CPM is considered to be PM_{2.5}.

Maximum Process Rate = 250 ton/hr (Maximum plant process rate)

Maximum Daily Hours of Operation for Summer Season = 24 hrs/day (unrestricted)

Maximum Daily Production for Summer Season = 6,000 tons/day

Maximum Daily Hours of Operation for Winter Season = 7 hrs/day

Maximum Daily Production for Winter Season = 1,750 tons/day

Operating Parameters:

Plant Elevation: 3800 ft. (estimate)
 Actual Pressure: 26.12 in. Hg (estimate)
 Standard Pressure: 29.92 in. Hg
 Actual Flowrate (V2): 45,000 acfm (Company Information)
 Standard Temp: 68 F (528 R)
 Assumed Stack Temp: 250 F (710 R)
 Standard Volumetric Flowrate V1 = V2 (P2/P1) (T1/T2)
 Correction:
 Standard Volumetric Flowrate: V1=45000 acfm * (26.12 in. Hg / 29.92 in. Hg) * (528 R / 710 R)
 Standard Volumetric Flowrate (V1): 29,215 scfm
 Stack Gas Moisture Content (M): 12 % (estimate)
 Dry Standard Volumetric Flowrate: =V1*(1 - M/100) = 29,215 scfm * (1 - 12/100)
 Dry Standard Volumetric Flowrate: 25,709 dscfm

Cold Aggregate Storage Piles

Filterable PM Emissions:

Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.

Emission Factor = k (0.0032) * (U/5)^{1.3} * (M / 2)^{-1.4} = 0.00331 lb/ton

Where: k = particle size multiplier = 0.74 (Value for PM < 30 microns per AP 42, Sec. 13.2.4.3, 11/06)

U = mean wind speed = 10 mph (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

M = material moisture content = 3% (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00331 lb/ton) * (1 piles) = 19.83 lb/day (Summer hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00331 lb/ton) * (1 piles) = 5.78 lb/day (Winter hours)

Filterable PM₁₀ Emissions:

Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.

Emission Factor = $k (0.0032) * (U/5)^{1.3} * (M / 2)^{-1.4} = 0.00156 \text{ lb/ton}$

Where: k = particle size multiplier = 0.35 (Value for PM < 10 microns per AP 42, Sec. 13.2.4.3, 11/06)
 U = mean wind speed = 10 mph (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)
 M = material moisture content = 3% (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

Calculation: $(250 \text{ ton/hr}) * (24 \text{ hrs/day}) * (0.00156 \text{ lb/ton}) * (1 \text{ piles}) = 9.38 \text{ lb/day}$ (Summer hours)

Calculation: $(250 \text{ ton/hr}) * (7 \text{ hrs/day}) * (0.00156 \text{ lb/ton}) * (1 \text{ piles}) = 2.74 \text{ lb/day}$ (Winter hours)

Filterable PM_{2.5} Emissions:

Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.

Emission Factor = $k (0.0032) * (U/5)^{1.3} * (M / 2)^{-1.4} = 0.00024 \text{ lb/ton}$

Where: k = particle size multiplier = 0.053 (Value for PM < 2.5 microns per AP 42, Sec. 13.2.4.3, 11/06)
 U = mean wind speed = 10 mph (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)
 M = material moisture content = 3% (Estimate based on values provided in AP 42, Sec. 13.2.4.3, 11/06)

Calculation: $(250 \text{ ton/hr}) * (24 \text{ hrs/day}) * (0.00024 \text{ lb/ton}) * (1 \text{ piles}) = 1.42 \text{ lb/day}$ (Summer hours)

Calculation: $(250 \text{ ton/hr}) * (7 \text{ hrs/day}) * (0.00024 \text{ lb/ton}) * (1 \text{ piles}) = 0.41 \text{ lb/day}$ (Winter hours)

*Cold Aggregate Handling/Conveyors***Filterable PM Emissions:**

Emission Factor = 0.00014 lb/ton (0.0030 uncontrolled, 0.00014 controlled, AP 42, Table 11.19.2-2, 8/04)

Calculation: $(250 \text{ ton/hr}) * (24 \text{ hrs/day}) * (0.00014 \text{ lb/ton}) * (2 \text{ transfer}) = 1.68 \text{ lb/day}$ (Summer Hours)

Calculation: $(250 \text{ ton/hr}) * (7 \text{ hrs/day}) * (0.00014 \text{ lb/ton}) * (2 \text{ transfer}) = 0.49 \text{ lb/day}$ (Winter Hours)

Filterable PM₁₀ Emissions:

Emission Factor = 0.000046 lb/ton (0.00110 uncontrolled, 0.000046 controlled, AP 42, Table 11.19.2-2, 8/04)

Calculation: $(250 \text{ ton/hr}) * (24 \text{ hrs/day}) * (0.000046 \text{ lb/ton}) * (2 \text{ transfer}) = 0.55 \text{ lb/day}$ (Summer Hours)

Calculation: $(250 \text{ ton/hr}) * (7 \text{ hrs/day}) * (0.000046 \text{ lb/ton}) * (2 \text{ transfer}) = 0.16 \text{ lb/day}$ (Winter Hours)

Filterable PM_{2.5} Emissions:

Emission Factor = 0.000013 lb/ton (0.000013 controlled, AP 42, Table 11.19.2-2, 8/04)

Calculation: $(250 \text{ ton/hr}) * (24 \text{ hrs/day}) * (0.000013 \text{ lb/ton}) * (2 \text{ transfer}) = 0.16 \text{ lb/day}$ (Summer Hours)

Calculation: $(250 \text{ ton/hr}) * (7 \text{ hrs/day}) * (0.000013 \text{ lb/ton}) * (2 \text{ transfer}) = 0.05 \text{ lb/day}$ (Winter Hours)

*250 TPH Drum Mix Drier***Filterable PM Emissions:**

Emission Factor = 0.04 gr/dscf (permit limit)

Calculation: $(0.04 \text{ gr/dscf}) * (25,709 \text{ dscfm}) * (1 \text{ lb} / 7000 \text{ gr}) * (60 \text{ min/hr}) = 8.81 \text{ lb/hr}$

Calculation: $(8.81 \text{ lb/hr}) * (24 \text{ hrs/day}) = 211.55 \text{ lb/day}$ (Summer Hours)

Calculation: $(8.81 \text{ lb/hr}) * (7 \text{ hrs/day}) = 61.70 \text{ lb/day}$ (Winter Hours)

Filterable PM₁₀ Emissions:

Emission Factor = 0.02 gr/dscf (permit limit, assume 50% of TSP is PM₁₀, Department policy)

Calculation: $(0.02 \text{ gr/dscf}) * (25,709 \text{ dscfm}) * (1 \text{ lb} / 7000 \text{ gr}) * (60 \text{ min/hr}) = 4.41 \text{ lb/hr}$

Calculation: $(4.41 \text{ lb/hr}) * (24 \text{ hrs/day}) = 105.77 \text{ lb/day}$ (Summer Hours)

Calculation: $(4.41 \text{ lb/hr}) * (7 \text{ hrs/day}) = 30.85 \text{ lb/day}$ (Winter Hours)

Filterable PM_{2.5} Emissions:

Emission Factor = 0.0084 gr/dscf (permit limit, assume 21% of TSP is PM_{2.5}, AP 42, Table 11.1-4, 3/04)

Calculation: $(0.0084 \text{ gr/dscf}) * (25,709 \text{ dscfm}) * (1 \text{ lb} / 7000 \text{ gr}) * (60 \text{ min/hr}) = 1.85 \text{ lb/hr}$

Calculation: $(1.85 \text{ lb/hr}) * (24 \text{ hrs/day}) = 44.43 \text{ lb/day}$ (Summer Hours)

Calculation: $(1.85 \text{ lb/hr}) * (7 \text{ hrs/day}) = 12.96 \text{ lb/day}$ (Winter Hours)

Condensable PM_{2.5} Emissions:

Emission Factor = 0.0194 lb/ton (fabric filter, AP 42, Table 11.1-3, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.0194 lb/ton) = 116.40 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.0194 lb/ton) = 33.95 lb/day (Winter Hours)

CO Emissions:

Emission Factor = 0.13 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-7, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.13 lb/ton) = 780.00 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.13 lb/ton) = 227.50 lb/day (Winter Hours)

NO_x Emissions:

Emission Factor = 0.055 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-7, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.055 lb/ton) = 330.00 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.055 lb/ton) = 96.25 lb/day (Winter Hours)

SO₂ Emissions:

Emission Factor = 0.011 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-7, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.011 lb/ton) * = 66.00 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.011 lb/ton) = 19.25 lb/day (Winter Hours)

VOC Emissions:

Emission Factor = 0.032 lb/ton (#2 fuel oil-fired dryer, AP 42, Table 11.1-8, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.032 lb/ton) = 192.00 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.032 lb/ton) = 56.00 lb/day (Winter Hours)

*Asphalt Product Silo Filling***Filterable PM_{2.5} Emissions:**

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = $0.000332 + 0.00105(-V)e^{((0.0251)(T + 460) - 20.43)} - 0.00025 = 0.00033$ lb/ton

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00033 lb/ton) * = 1.99 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00033 lb/ton) * = 0.58 lb/day (Winter Hours)

Condensable PM_{2.5} Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = $0.00105(-V)e^{((0.0251)(T + 460) - 20.43)} = 0.00025$ lb/ton

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00025 lb/ton) = 1.52 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00025 lb/ton) * = 0.44 lb/day (Winter Hours)

VOC Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = $0.0504(-V)e^{((0.0251)(T + 460) - 20.43)} = 0.01219$ lb/ton

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.01219 lb/ton) = 73.12 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.01219 lb/ton) * = 21.33 lb/day (Winter Hours)

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.00488(-V)e^{((0.0251)(T + 460) - 20.43)} = 0.00118 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00118 lb/ton) = 7.08 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00118 lb/ton) * = 2.06 lb/day (Winter Hours)

*Plant Load Out***Filterable PM_{2.5} Emissions:**

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.000181 + 0.00141(-V)e^{((0.0251)(T + 460) - 20.43)} - 0.00034 = 0.00018 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00018 lb/ton) = 1.09 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00018 lb/ton) = 0.32 lb/day (Winter Hours)

Condensable PM_{2.5} Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.00141(-V)e^{((0.0251)(T + 460) - 20.43)} = 0.00034 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00034 lb/ton) = 2.05 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00034 lb/ton) = 0.60 lb/day (Winter Hours)

VOC Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.0172(-V)e^{((0.0251)(T + 460) - 20.43)} * 94\% = 0.00391 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00391 lb/ton) = 23.46 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00391 lb/ton) = 6.84 lb/day (Winter Hours)

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

$$\text{Emission Factor} = 0.00558(-V)e^{((0.0251)(T + 460) - 20.43)} = 0.00135 \text{ lb/ton}$$

Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)

T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)

Calculation: (250 ton/hr) * (24 hrs/day) * (0.00135 lb/ton) = 8.10 lb/day (Summer Hours)

Calculation: (250 ton/hr) * (7 hrs/day) * (0.00135 lb/ton) = 2.36 lb/day (Winter Hours)

*Haul Roads/Vehicle Traffic***PM Emissions:**

Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.

$$\text{Emission Factor} = k * (s / 12)^a * (W / 3)^b = 12.46 \text{ lb/VMT}$$

Where: k = constant = 4.9 lbs/VMT (Value for PM₃₀/TSP, AP 42, Table 13.2.2-2, 11/06)

s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)

W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)

a = constant = 0.7 (Value for PM₃₀/TSP, AP 42, Table 13.2.2-2, 11/06)

b = constant = 0.45 (Value for PM₃₀/TSP, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)

Calculation: (24 hrs/day) * (0.21 VMT/hr) * (12.46 lb/VMT) * (1-50/100) = 31.15 lb/day (50% control efficiency, Summer Hours)

Calculation: (7 hrs/day) * (0.21 VMT/hr) * (12.46 lb/VMT) * (1-50/100) = 9.09 lb/day (50% control efficiency, Winter Hours)

PM₁₀ Emissions:

Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.

Emission Factor = $k * (s / 12)^a * (W / 3)^b = 3.43 \text{ lb/VMT}$

Where: $k = \text{constant} = 1.5 \text{ lbs/VMT}$ (Value for PM₁₀, AP 42, Table 13.2.2-2, 11/06)

$s = \text{surface silt content} = 7.1 \%$ (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)

$W = \text{mean vehicle weight} = 54 \text{ tons}$ (1994 average loaded/unloaded or a 40 ton truck)

$a = \text{constant} = 0.9$ (Value for PM₁₀, AP 42, Table 13.2.2-2, 11/06)

$b = \text{constant} = 0.45$ (Value for PM₁₀, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)

Calculation: $(24 \text{ hrs/day}) * (0.21 \text{ VMT/hr}) * (3.43 \text{ lb/VMT}) * (1-50/100) = 8.59 \text{ lb/day}$ (50% control efficiency, Summer Hours)

Calculation: $(7 \text{ hrs/day}) * (0.21 \text{ VMT/hr}) * (3.43 \text{ lb/VMT}) * (1-50/100) = 2.50 \text{ lb/day}$ (50% control efficiency, Winter Hours)

PM_{2.5} Emissions:

Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.

Emission Factor = $k * (s / 12)^a * (W / 3)^b = 0.34 \text{ lb/VMT}$

Where: $k = \text{constant} = 0.15 \text{ lbs/VMT}$ (Value for PM_{2.5}, AP 42, Table 13.2.2-2, 11/06)

$s = \text{surface silt content} = 7.1 \%$ (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)

$W = \text{mean vehicle weight} = 54 \text{ tons}$ (1994 average loaded/unloaded or a 40 ton truck)

$a = \text{constant} = 0.9$ (Value for PM_{2.5}, AP 42, Table 13.2.2-2, 11/06)

$b = \text{constant} = 0.45$ (Value for PM_{2.5}, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)

Calculation: $(24 \text{ hrs/day}) * (0.21 \text{ VMT/hr}) * (0.34 \text{ lb/VMT}) * (1-50/100) = 0.86 \text{ lb/day}$ (50% control efficiency, Summer Hours)

Calculation: $(7 \text{ hrs/day}) * (0.21 \text{ VMT/hr}) * (0.34 \text{ lb/VMT}) * (1-50/100) = 0.25 \text{ lb/day}$ (50% control efficiency, Winter Hours)

*986 hp Diesel Engine Main Generator***Total PM/PM₁₀/PM_{2.5} Emissions:**

Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(24 \text{ hrs/day}) * (986 \text{ hp}) * (0.0022 \text{ lbs/hp-hr}) = 52.06 \text{ lb/day}$ (Summer Hours)

Emission Factor = 0.000331 lbs/hp-hr (EPA Tier 2 emission standards, hp>750)

Calculation: $(7 \text{ hrs/day}) * (986 \text{ hp}) * (0.000331 \text{ lbs/hp-hr}) = 2.28 \text{ lb/day}$ (Winter Hours)

NO_x Emissions:

Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(24 \text{ hrs/day}) * (986 \text{ hp}) * (0.031 \text{ lbs/hp-hr}) = 733.58 \text{ lb/day}$ (Summer Hours)

Calculation: $(7 \text{ hrs/day}) * (986 \text{ hp}) * (0.031 \text{ lbs/hp-hr}) = 213.96 \text{ lb/day}$ (Winter Hours)

CO Emissions:

Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(24 \text{ hrs/day}) * (986 \text{ hp}) * (0.00668 \text{ lbs/hp-hr}) = 158.08 \text{ lb/day}$ (Summer Hours)

Calculation: $(7 \text{ hrs/day}) * (986 \text{ hp}) * (0.00668 \text{ lbs/hp-hr}) = 46.11 \text{ lb/day}$ (Winter Hours)

VOC Emissions:

Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)

Calculation: $(24 \text{ hrs/day}) * (986 \text{ hp}) * (0.0025141 \text{ lbs/hp-hr}) = 59.49 \text{ lb/day}$ (Summer Hours)

Calculation: $(7 \text{ hrs/day}) * (986 \text{ hp}) * (0.0025141 \text{ lbs/hp-hr}) = 17.35 \text{ lb/day}$ (Winter Hours)

SO₂ Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: $(24 \text{ hrs/day}) * (986 \text{ hp}) * (0.00205 \text{ lbs/hp-hr}) = 48.51 \text{ lb/day}$ (Summer Hours)

Calculation: $(7 \text{ hrs/day}) * (986 \text{ hp}) * (0.00205 \text{ lbs/hp-hr}) = 14.15 \text{ lb/day}$ (Winter Hours)

36 hp Diesel Engine Asphalt Oil Heater

Total PM/PM₁₀/PM_{2.5} Emissions:

Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (24 hrs/day) * (36 hp) * (0.0022 lbs/hp-hr) = 1.90 lb/day (Summer Hours)

Calculation: (7 hrs/day) * (36 hp) * (0.0022 lbs/hp-hr) = 0.55 lb/day (Winter Hours)

NO_x Emissions:

Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (24 hrs/day) * (36 hp) * (0.031 lbs/hp-hr) = 26.78 lb/day (Summer Hours)

Calculation: (7 hrs/day) * (36 hp) * (0.031 lbs/hp-hr) = 7.81 lb/day (Winter Hours)

CO Emissions:

Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (24 hrs/day) * (36 hp) * (0.00668 lbs/hp-hr) = 5.77 lb/day (Summer Hours)

Calculation: (7 hrs/day) * (36 hp) * (0.00668 lbs/hp-hr) = 1.68 lb/day (Winter Hours)

VOC Emissions:

Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)

Calculation: (24 hrs/day) * (36 hp) * (0.0025141 lbs/hp-hr) = 2.17 lb/day (Summer Hours)

Calculation: (7 hrs/day) * (36 hp) * (0.0025141 lbs/hp-hr) = 0.63 lb/day (Winter Hours)

SO₂ Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (24 hrs/day) * (36 hp) * (0.00205 lbs/hp-hr) = 1.77 lb/day (Summer Hours)

Calculation: (7 hrs/day) * (36 hp) * (0.00205 lbs/hp-hr) = 0.52 lb/day (Winter Hours)

70 hp Diesel Engine

PM-10 Emissions

Emission Factor= 0.3 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (0.3 g/hp-hr)*(70 hp)*(0.002205 lbs/grams) = 0.05 lbs/hr

Calculation: (0.05 lbs/hr)*(24 hrs/day)*(0.0005 tons/lb) = 0.0006 lbs/day (Summer Hours)

Calculation: (0.05 lbs/hr)*(7 hrs/day)*(0.0005 tons/lb) = 0.000175 lbs/day (Winter Hours)

PM-2.5 Emissions

Emission Factor= 0.3 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (0.3 g/hp-hr)*(70 hp)*(0.002205 lbs/grams) = 0.05 lbs/hr

Calculation: (.05 lbs/hr)*(24 hrs/day)*(0.0005 tons/lb) = 0.0006 lbs/day (Summer Hours)

Calculation: (.05 lbs/hr)*(7 hrs/day)*(0.0005 tons/lb) = 0.000175 lbs/day (Winter Hours)

NO_x Emissions:

Emission Factor= 3.5 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (3.5 g/hp-hr)*(70 hp)*(0.002205 lbs/gram) = 0.54 lbs/hr

Calculation: (.54 lbs/hr)*(24 hrs/day)*(0.0005 tons/lb)=0.00648 lbs/day (Summer Hours)

Calculation: (.54 lbs/hr)*(7 hrs/day)*(0.0005 tons/lb)= 0.00189 lbs/day (Winter Hours)

CO Emissions:

Emission Factor= 3.7 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (3.7 lb/hp-hr)*(70 hp)*(0.002205 lbs/gram)= 0.57 lbs/hr

Calculation: (.57 lbs/hr)*(24 hrs/day)*(0.0005 tons/lb) = 0.00684 lbs/day (Summer Hours)

Calculation: (.57 lbs/hr)*(7 hrs/day)*(0.0005 tons/lb) = 0.00195 lbs/day (Winter Hours)

VOC Emissions:

Emission Factor= 0.00251 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (70 hp) * (24 hrs/day) * (0.00251 g-hp-hr)*(0.002205 lbs/gram) = 0.0093 lbs/day(Summer Hours)

Calculation: (70 hp) * (7 hrs/day) * (0.00251 g-hp-hr)*(0.002205 lbs/gram) = 0.0027 lbs/day (Winter Hours)

SO₂ Emissions:

Emission Factor= 0.00205 g/hp-hr

(U.S. EPA Nonroad Compression-Ignition Engines—Exhaust Emission Standards: Tier 1-Tier 4)

Calculation: (70 hp) * (24 hrs/day) * (0.00205 g-hp-hr) * (0.002205 lbs/gram) = 0.00759 lbs/day (Summer Hours)

Calculation: (70 hp) * (7 hrs/day) * (0.00205 g-hp-hr) * (0.002205 lbs/gram) = 0.00221 lbs/day (Winter Hours)

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for PM₁₀. Due to exceedances of the national standards for particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), 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 PM₁₀. As a result of this designation, the EPA required the Department and the City-County Health Departments to submit PM₁₀ 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 PM₁₀ emissions.

Montana Air Quality Permit (MAQP) #4522-01 and Addendum 2 are for a portable drum mix asphalt plant that will locate at sites in or within 10 kilometers (km) of certain PM₁₀ nonattainment areas. 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 operate on an intermittent and temporary basis and any effects on air quality will be minor and short-lived.

VI. Air Quality Impacts

MAQP #4522-01 and Addendum 2 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 2 will cover the operations of this portable asphalt plant while operating in or within 10 km of the Kalispell PM₁₀ nonattainment area (Kalispell home pit) during the Winter Season (October 1 – March 31). Additionally, the facility will also be allowed to operate in or within 10 km of certain PM₁₀ nonattainment areas during the Summer Season (April 1 – September 30).

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 (see Section VII of the Permit Analysis for MAQP #4522-01) and determined there are no taking or damaging implications.

VIII. Environmental Assessment

This permitting action is considered an administrative action, therefore, an Environmental Assessment is not required.

Permit Analysis Prepared by: Tashia Love

Date: April 17, 2013