



Montana Department of
ENVIRONMENTAL **Q**UALITY

Brian Schweitzer, Governor

P. O. Box 200901

Helena, MT 59620-0901

(406) 444-2544

Website: www.deq.mt.gov

May 23, 2011

Andy Mathison
Casino Creek Concrete, Inc.
P.O. Box 3501
Lewistown, MT 59457

Dear Mr. Mathison:

Montana Air Quality Permit #2696-05 is deemed final as of May 21, 2011, by the Department of Environmental Quality (Department). This permit is for a grain storage facility. 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,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-9741

Julie A. Merkel
Air Quality Specialist
Air Resources Management Bureau
(406) 444-3626

VW:JM
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #2696-05

Casino Creek Concrete, Inc.
P.O. Box 3501
Lewistown, MT 59457

May 21, 2011



MONTANA AIR QUALITY PERMIT

Issued To: Casino Creek Concrete, Inc.
P.O. Box 3501
Lewistown, MT 59457

MAQP #2696-05
Application Complete: 2/23/11
Preliminary Determination Issued: 4/4/11
Department's Decision Issued: 5/5/11
Permit Final: 5/21/11
AFS #777-2696

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

SECTION I: Permitted Facilities

A. Plant Location:

Casino Creek operates a portable crushing/screening facility with concrete batch plants with an initial location in the Section 13 and 14, Township 16 North, Range 16 East, in Fergus County, Montana. MAQP #2696-05 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality (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.

B. Current Permit Action:

On February 23, 2011, the Department received a complete application for a modification to MAQP #2696-04. The modification request included the addition of a crusher feed hopper, a 676-horsepower (hp) diesel generator engine, a 96-hp diesel generator engine, a 102-hp diesel generator engine, a Fastway Batch Plant, and pugmill. The modification reflects the removal of a 580-hp diesel generator engine and a 66 ton per hour (TPH) cone crusher, as well as a new homepit location as requested by Casino Creek. The current permit action will update the list of permitted equipment, MAQP conditions, emission inventory, and homepit location.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Casino Creek shall install, operate, and maintain the fabric filter dust collector, a rubber boot load-out spout as specified in their MAQP and all supporting documentation (ARM 17.8.752):
 - a. Casino Creek shall install, operate, and maintain the fabric filter dust collector on every cement and cement supplement silo ventilation opening; and

- b. Casino Creek shall install, operate, and maintain the rubber boot load-out spout on every product load-out opening on the concrete plant, where cementations and aggregate materials are transferred for mixing.
2. All visible emissions from any Standards of Performance for New Stationary Source (NSPS)-affected crusher shall not exhibit an opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 Code of Federal Regulations (CFR) 60, Subpart OOO):
 - For crushers that commence construction, modification, or reconstruction on or after April 22, 2008: 12% opacity
 - For crushers that commence construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008: 15% opacity
3. All visible emissions from any NSPS-affected equipment other than a crusher (such as screens and conveyors) shall not exhibit an opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart OOO):
 - For equipment that commences construction, modification, or reconstruction on or after April 22, 2008: 7% opacity
 - For equipment that commences construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008: 10% opacity
4. All visible emissions from any non-NSPS affected equipment shall not exhibit an opacity of 20% or greater averaged over 6-consecutive minutes (ARM 17.8.304 and ARM 17.8.752).
5. Casino Creek shall not cause or authorize to be discharged into the atmosphere from a concrete batch plant:
 - a. Any vent emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304 and ARM 17.8.752).
 - b. Any fugitive emissions from the source, or from any material transfer operations, including, but not limited to, truck loading or unloading, which exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308 and ARM 17.8.752).
6. Casino Creek shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.752).
7. Casino Creek 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.6 (ARM 17.8.752).
8. Water and spray bars shall be available on site at all times and operated as necessary to maintain compliance with the opacity limitations in Sections II.A.2, II.A.3, and II.A.4 (ARM 17.8.752).

9. Casino Creek shall not operate more than five crushers at any given time and the maximum combined rated capacity of the crushers shall not exceed 630 TPH (ARM 17.8.749).
10. Total crushing production shall be limited to 3,150,000 tons during any rolling 12-month time period (ARM 17.8.749).
11. Casino Creek shall not operate more than three screens at any given time and the maximum combined rated capacity of the screens shall not exceed 550 TPH (ARM 17.8.749).
12. Total screening production shall be limited to 2,750,500 tons during any rolling 12-month time period (ARM 17.8.749).
13. Total batch plant production shall be limited to 900,000 cubic yards during any rolling 12-month time period (ARM 17.8.749).
14. Casino Creek shall not operate or have on site more than four diesel generator engines at any given time and the combined maximum rated design capacity of the engines shall not exceed 1024-hp. Each individual generator engine shall not exceed 5,000 hours of operation during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).
15. If the permitted equipment is used in conjunction with any other equipment owned or operated by Casino Creek, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons of emissions during any rolling 12-month time period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).
16. Casino Creek shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants* (ARM 17.8.340 and 40 CFR 60, Subpart OOO).
17. Casino Creek shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Within 60 days after achieving maximum production, but no later than 180 days after initial start-up, an Environmental Protection Agency (EPA) Method 9 opacity test and/or other methods and procedures as specified in 40 CFR 60.675 must be performed on all NSPS affected equipment to demonstrate compliance with the emission limitations contained in Section II.A.2 and II.A.3 (ARM 17.8.340 and 40 CFR 60, General Provisions and Subpart OOO).
2. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. The Department may require testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. If this crushing/screening plant is moved to another location, an Intent to Transfer form must be sent to the Department. In addition, a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area 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. Casino Creek shall supply the Department with annual production information for all emission points, as required, by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in 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 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. Casino Creek 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***, a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start-up or use of the proposed de minimis change or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
4. Casino Creek shall maintain on-site records showing daily hours of operation and daily production rates for the last 12 months. The records compiled in accordance with this permit shall be maintained by Casino Creek 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. Casino Creek shall document, by month, the crushing production from the facility. By the 25th day of each month, Casino Creek shall calculate the crushing 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).
6. Casino Creek shall document, by month, the screening production from the facility. By the 25th day of each month, Casino Creek shall calculate the crushing 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.12. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. Casino Creek shall document, by month, the amount of concrete produced. By the 25th day of each month, Casino Creek shall total the amount of concrete produced during the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.13. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
8. Casino Creek shall document, by month, the hours of operation of the diesel generator engines. By the 25th day of each month, Casino Creek shall calculate the hours of operation for the diesel generator engines for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.14. The information for each of the previous months shall be submitted along with the annual emissions inventory (ARM 17.8.749).
9. Casino Creek shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).

SECTION III: General Conditions

- A. Inspection - Casino Creek 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 the Casino Creek fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving the Casino Creek of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement as specified in Section 75-2-401 *et seq.*, MCA.
- E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

- F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.
- G. Permit Fee - Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Casino Creek 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. Casino Creek shall comply with the conditions contained in this permit while operating in any location in Montana, except within those areas that have a Department-approved permitting program or areas considered tribal lands.

Montana Air Quality Permit (MAQP) Analysis
Casino Creek Concrete, Inc.
MAQP #2696-05

I. Introduction/Process Description

Casino Creek Concrete, Inc. (Casino Creek) operates a portable crushing/screening facility and associated wash plant and three concrete batch plants. The homepit location of the facility is in Section 13 and Section 14, Township 16 North, Range 16 East, in Fergus County, Montana.

A. Permitted Equipment

The Casino Creek portable crushing/screening facility consists of the following equipment:

- 1970 Pioneer (30"x40") Rolls Crusher (maximum capacity 150 tons per hour (TPH)),
- 2009 Model #54 Cemco Impact Crusher (maximum capacity of 125 TPH),
- 2005 Trio Jaw Crusher (maximum capacity 150 TPH),
- 1992 Nordberg HP200 Closed Circuit Cone Crusher (maximum capacity 125 TPH),
- Pre-1983 (5'x14') Cedar Rapids 2-deck Screen (maximum capacity 250 TPH),
- Pre-1983 (4'x14') Cedar Rapids 3-deck Screen (maximum capacity 150 TPH),
- A 676-horsepower (hp) diesel-fired generator engine;
- A 96-hp diesel-fired generator engine;
- A 102-hp diesel-fired generator engine;
- An Eagle Ironworks Pugmill; and
- associated equipment.

The batch plants consist of a Coneco concrete batch plant (maximum capacity of 100 cubic yards per hour (y^3/hr), two Fastway batch plants (each with a maximum capacity of $40 y^3/hr$), and associated equipment. The wash plant consists of a Pre-1983 EL-Jay 5'x16' 3-deck screen (maximum capacity 150 TPH), a 150-hp diesel-fired generator engine, 4 conveyors, and associated equipment.

B. Process Description

Casino Creek proposes to use this crushing/screening plant and associated equipment to crush and sort sand and gravel materials for use in various construction operations. For a typical operational setup, materials are loaded into a hopper that feeds a screen. Materials are sorted and sent to a second screen. After the second screen, materials are separated, with the smaller materials conveyed to a jaw and rolls crusher and the larger materials sent to an impact and cone crusher and recycled back to the primary screen. Once the materials are properly sized, the aggregate is sent to a wash plant, where the materials are washed, screened, and stockpiled for sale and use.

Casino Creek also proposes to use the batch plants to produce concrete. For a typical operational setup, stockpiles of sand and gravel for concrete production are stored on site. A loader transfers the sand and gravel from the stockpiles to a weight hopper and the sand and gravel is then conveyed into the batch plant. The cement silo transfers the cement into the batch plant where water is added. The sand, gravel, cement, and water are then loaded into mixing trucks where the materials are mixed together to form concrete. The concrete is then transferred to various construction operations.

C. Permit History

On May 9, 1991, Casino Creek was issued a permit to operate a portable pre-1983 Diamond Jaw Crusher (maximum capacity 80 TPH) and associated equipment. Casino Creek was originally located the East ½ of Section 20, Township 16 North, Range 17 East, in Fergus County, Montana. Casino Creek's permit was assigned **MAQP #2696-00**.

On January 23, 2002, Casino Creek submitted a complete permit application for the operation of a portable crushing/screening facility and associated wash plant. Casino Creek added a 1970 Pioneer (30"x40") Rolls Crusher, a Pre-1983 (10"x36") Diamond Jaw Crusher, Pre-1983 (36") Telesmith Cone Crusher, Pre-1983 Cemco USI Impact Crusher, Pre-1983 (5'x14') Cedar Rapids 2-deck Screen, Pre-1983 (4'x14') Cedar Rapids 3-deck Screen, a 1965 400 kW Detroit Diesel generator, 9 conveyors, and associated equipment to Permit #2696-00. Also, a wash plant consisting of a Pre-1983 EL-Jay 5'x16' 3-deck screen, a 100 kW diesel generator, 4 conveyors, and associated equipment were added. **MAQP #2696-01** replaced MAQP #2696-00.

On January 27, 2006, Casino Creek submitted a complete permit application for the operation of a portable crushing/screening facility and associated batch plants. Casino Creek requested to add a 2005 Trio Jaw Crusher, a Coneco concrete batch plant, a Fastway batch plant, and associated equipment to MAQP #2696-01. The permit action added the new equipment to the list of permitted equipment and updated the permit to reflect current permit language and rule references used by the Department of Environmental Quality (Department). **MAQP #2696-02** replaced MAQP #2696-01.

On April 10, 2006, Casino Creek submitted a request to amend Permit #2696-02. Casino Creek requested the addition of a Nordberg HP200 Closed Circuit Cone Crusher and associated equipment to MAQP #2696-02. The additional equipment resulted in the generation of particulate emissions of less than 15 tons per year. Therefore, the crushing facility was added in accordance with the Administrative Rules of Montana (ARM) 17.8.745. The permit action added the new equipment to the list of permitted equipment and updated the permit to reflect current permit language. **MAQP #2696-03** replaced MAQP #2696-02.

On February 4, 2010, Casino Creek submitted a request to amend MAQP #2696-03. Casino Creek requested the removal of a pre-1983 Cemco impact crusher and the addition of a 2009 Model #54 Cemco Impactor crusher and associated equipment. The additional equipment results in the generation of particulate emissions of less than 15 tons per year. Therefore, the crushing facility is being added as a de minimis change in accordance with ARM 17.8.745. In addition to accounting for these changes, the current permit action updates the permit to reflect current permit language and rule references used by the Department. **MAQP #2696-04** replaced MAQP #2696-03.

D. Current Permit Action

On February 23, 2011, the Department received a complete application for a modification to MAQP #2696-04. The modification request included the addition of a Crusher Feed Hopper, a 676-hp diesel-fired generator engine, a 96-hp diesel-fired generator engine, a 102-hp diesel-fired generator engine, a Fastway Batch Plant, and an Eagle Ironworks Pugmill. Casino Creek also requested that a 580-hp diesel generator engine and a pre-1983 Telesmith Cone Crusher be removed from the permit. Casino Creek has also established a new homepit location. The current permit action will update the list of permitted equipment and emission inventory as well as update the synthetic minor permit conditions. **MAQP #2696-05** replaces MAQP #2696-04.

E. Additional Information

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

II. Applicable Rules and Regulations

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

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

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

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

4. ARM 17.8.110 Malfunctions. 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. No person shall cause or permit the installation or use of any device or any means that without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

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

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide

3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for Particulate Matter with an Aerodynamic Diameter of 10 Microns or Less (PM₁₀)
11. ARM 17.8.230 Fluoride in Forage

Casino Creek 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 six 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 section, Casino Creek shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Processes. This section requires that no person shall cause, allow, or permit 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 rule.
6. ARM 17.8.340 Standards of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Casino Creek 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 OOO – Standards of Performance for Nonmetallic Mineral Processing Plants. In order for a crushing 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 Casino Creek, the portable crushing/screening equipment to be used under MAQP #2696-05 is subject to this subpart because the 2005 Trio Jaw Crusher, 1992 Nordberg Cone Crusher, and the 2009 Cemco Impactor Crusher were constructed, reconstructed, or modified after August 31, 1983.

c. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. 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 Casino Creek, some of the CI ICE equipment to be used under MAQP #2696-05 may be subject to this subpart because they were constructed after the applicable date and they meet the definition of a stationary CI ICE if they remain in a location for more than 12 months.

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 an NESHAP Subpart as listed below:

b. 40 CFR 63, Subpart ZZZZ – NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary 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 Casino Creek, some of the RICE equipment to be used under MAQP #2696-05 may be subject to this subpart because the facility is an area source of HAP emissions and the engines may meet the definition of a stationary RICE if they remain in a location for more than 12 months.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that 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. Casino Creek submitted the appropriate permit application fee for the current permit action.

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

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation

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

- E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an 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 tons per year of any pollutant. Casino Creek has a PTE greater than 15 tons per year of total PM, NO_x, and PM₁₀; 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, alteration, or use of a source. The required permit application was submitted 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. Casino Creek submitted an affidavit of publication of public notice for the February 9, 2011 issue of the *Lewistown News-Argus*, a newspaper of general circulation in the Town of Lewistown in Fergus County, as proof of compliance with the public notice requirements..
 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 Casino Creek 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 17.8.760 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.
12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than one year after the permit is issued.
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 one 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 Modifications-- 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 Federal Clean Air Act (FCAA) that it would emit, except as this sub-chapter would otherwise allow.

This facility is not a major stationary source because it is not a listed source and does not have the PTE more than 250 tons per year (excluding fugitive emissions) of any air pollutant. Therefore, the New Source Review (NSR) program does not apply.

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
 - a. PTE > 100 tons/year of any Title V pollutant.
 - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #2696-05 for Casino Creek, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for all Title V criteria pollutants. PM is not a Title V pollutant.
 - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year of all HAPs.
 - c. This source is not located in a serious PM₁₀ non-attainment area.
 - d. This facility is subject to current NSPS standards (40 CFR 60, Subpart OOO and potentially Subpart IIII).
 - e. This facility is potentially subject to area source provisions of a current NESHAP standard (40 CFR 63, Subpart ZZZZ)
 - f. This source is not a Title IV affected source.
 - g. This source is not a solid waste combustion unit.
 - h. This source is not an EPA designated Title V source.

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

- i. ARM 17.8.1204(3). The Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's PTE.
 - i. In applying for an exemption under this section the owner or operator of the facility shall certify to the Department that the source's PTE does not require the source to obtain an air quality operating permit.
 - ii. Any source that obtains a federally enforceable limit on PTE shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.
3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal 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.

III. BACT Analysis

A BACT determination is required for any new or altered source. Casino Creek shall install on the new or altered source the maximum air pollution control capability that is technologically practicable and economically feasible, except that BACT shall be used. A BACT determination was not required because the permit change is considered an administrative permit change.

All visible emissions from any affected equipment, used in conjunction with this facility, and manufactured after August 31, 1983, are limited to an opacity of 10%. Casino Creek must also take reasonable precautions to limit the fugitive emissions of airborne particulate matter from haul roads, access roads, parking areas, and the general plant property. Casino Creek shall use water spray bars and/or chemical dust suppressant, as necessary, to maintain compliance with the opacity and reasonable precaution limitations. The Department determined that using water spray bars and/or chemical dust suppressant to maintain compliance with the opacity requirements and reasonable precaution limitations constitutes BACT for these sources.

Area Source Fugitives Emissions

Two types of emissions controls are readily available and used for dust suppression of fugitive emissions at the site, and fugitive emissions for the surrounding area of operation. These two control methods are water and chemical dust suppressant. Chemical dust suppressant could be used for dust suppression on the area surrounding the operation. However, because water is more readily available, is more cost effective, is equally effective as chemical dust suppressant, and is more environmentally friendly, water has been identified as the most appropriate method of pollution control of particulate emissions for the general plant area. In addition, water

suppression has been required of recently permitted similar sources. Casino Creek may, however, use chemical dust suppressant to assist in controlling particulate emissions from the surrounding plant area.

All visible emissions from any affected equipment, used in conjunction with this facility, and manufactured after August 31, 1983, are limited to an opacity of 10%. Casino Creek must also take reasonable precautions to limit the fugitive emissions of airborne particulate matter from haul roads, access roads, parking areas, and the general area of operation. Casino Creek is required to have water available on site (at all times) and to apply the water, as necessary, to maintain compliance with the opacity and reasonable precaution limitations. Casino Creek may also use chemical dust suppression, in order to maintain compliance with emissions limitations in Section I.A of Permit #2696-05. The Department determined that using water spray bars and water to maintain compliance with the opacity requirements and reasonable precaution limitations constitutes BACT for the facility.

Cement Plant

All visible emissions from any cement and cement supplement silo (or vent), truck loading or unloading operations, or any material transferring operations shall be limited to less than 20% opacity. Casino Creek shall use a fabric filter dust collector for the cement silo and a rubber boot load-out spout on the cement batcher. The Department determined that using a fabric filter dust collector and a load-out spout to maintain compliance with the opacity limitations constitutes BACT for these sources.

Diesel Engines

Due to the limited amount of emissions produced by the diesel engine and the lack of readily available cost effective add-on controls, add-on controls would be cost prohibitive. Therefore, the Department determined that proper operation and maintenance with no add-on controls would constitute BACT for the diesel engine.

In addition, any new diesel stationary engine would be required to comply with the federal engine emission limitations including, for example, 40 CFR 60, Subpart IIII and/or 40 CFR 63, Subpart ZZZZ.

IV. Emission Inventory

Fugitive Source Emissions	tons/year						
	PM	PM ₁₀	PM _{2.5}	NO _x	CO	VOC	SO ₂
150 TPH - 1970 Pioneer Rolls Crusher	1.01	0.45	0.04	--	--	--	--
125 TPH - 2009 Cemco impact crusher	0.84	0.38	0.03	--	--	--	--
150 TPH - 2005 Trio Jaw Crusher	1.01	0.45	0.04	--	--	--	--
125 TPH - 1992 Nordberg Closed Circuit Crusher	0.84	0.38	0.03	--	--	--	--
250 TPH - 2 deck Screen	7.81	2.72	0.03	--	--	--	--
150 TPH - 3 deck Screen	4.69	1.63	0.02	--	--	--	--
150 TPH - 3 deck screen	4.69	1.63	0.02	--	--	--	--
250 TPH - Material Transfer (12)	11.25	4.13	0.10	--	--	--	--
150 TPH - Wash Plant Material Transfer (12)	6.75	2.48	0.06	--	--	--	--
Pile Forming	2.27	1.07	0.16	--	--	--	--
Wash Plant Pile Forming	0.62	0.29	0.04	--	--	--	--
Bulk Loading	0.03	0.03	0.01	--	--	--	--
Wash Plant Bulk Loading	0.02	0.02	0.00	--	--	--	--
Haul Roads / Vehicle Traffic	3.49	0.96	0.13	--	--	--	--
Fastway Batch Plant - 40 cy/hr	30.18	8.56	4.53	--	--	--	--
Fastway Batch Plant (2) - 40 cy/hr	30.18	8.56	4.53	--	--	--	--
Coneco Batch Plant - 100 cy/hr	75.45	21.40	11.32	--	--	--	--
Total Fugitive Source Emissions	181.13	55.13	21.08	--	--	--	--

Point Source Emissions	tons/year						
	PM	PM ₁₀	PM _{2.5}	NO _x	CO	VOC	SO ₂
150-hp Diesel Generator Engine	0.83	0.83	0.83	11.63	2.51	0.94	0.77
676-hp Diesel Generator Engine	3.72	3.72	3.72	52.39	11.29	4.25	3.46
96-hp Diesel Generator Engine	0.53	0.53	0.53	7.44	1.60	0.60	0.49
102-hp Diesel Generator Engine	0.56	0.56	0.56	7.91	1.70	0.64	0.52
Total Point Source Emissions	5.63	5.63	5.63	79.36	17.10	6.44	5.25

Total Fugitive and Point Source Emissions	187.30	61.00	26.73	79.36	17.10	6.44	5.25
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NOTES

Emissions are based on an hourly operational limit of 5,000 hours per rolling 12-month period to keep NO_x emissions below 80 tons per year.

Combustion source particulate emissions are assumed to be the sum of the filterable and condensable fractions.

Non-combustion source particulate emissions are assumed to have no condensable fraction.

The concrete batch plants have point sources of emissions in the baghouse exhaust stacks; however, emissions from these stacks are less than 0.00 TPY each. Therefore, these emission points are not included in the Point Source Emissions Table.

PM	Particulate matter	NO _x	Nitrogen oxides
PM ₁₀	PM with an aerodynamic diameter of 10 microns or less	CO	Carbon monoxide
PM _{2.5}	PM with an aerodynamic diameter of 2.5 microns or less	VOC	Volatile organic compounds
		SO ₂	Sulfur dioxide
		--	No data or not applicable

PM Emissions:

Based on AP-42

Emission Factor = 0.0054 lb/ton (crushing, AP 42, Table 11.19.2-2,8/04)

Control Efficiency = 50%

Calculation: (150 ton/hr) * (5000 hrs/yr) * (0.0054 lb/ton) * (ton/2000 lb) * (1 - 50/100) = 1.01 ton/yr

PM₁₀ Emissions:

Based on AP-42

Emission Factor = 0.0024 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: (150 ton/hr) * (5000 hrs/yr) * (0.0024 lb/ton) * (ton/2000 lb) * (1 - 50/100) = 0.45 ton/yr

PM_{2.5} Emissions:

Emission Factor = 0.0001 lb/ton (tertiary crushing (controlled), AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 0% (built into emission factor)

Calculation: (150 ton/hr) * (5000 hrs/yr) * (0.0001 lb/ton) * (ton/2000 lb) = 0.04 ton/yr

2009 Cemco impact crusher

(assuming tertiary crushing in acc w/Guidance statement 5/3/99)

Maximum Process Rate = 125 ton/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Based on AP-42

Emission Factor = 0.0054 lb/ton (crushing, AP 42, Table 11.19.2-2,8/04)

Control Efficiency = 50%

Calculation: (125 ton/hr) * (5000 hrs/yr) * (0.0054 lb/ton) * (ton/2000 lb) * (1 - 50/100) = 0.84 ton/yr

PM₁₀ Emissions:

Based on AP-42

Emission Factor = 0.0024 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: (125 ton/hr) * (5000 hrs/yr) * (0.0024 lb/ton) * (ton/2000 lb) * (1 - 50/100) = 0.38 ton/yr

PM_{2.5} Emissions:

Emission Factor = 0.0001 lb/ton (tertiary crushing (controlled), AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 0% (built into emission factor)

Calculation: (125 ton/hr) * (5000 hrs/yr) * (0.0001 lb/ton) * (ton/2000 lb) = 0.03 ton/yr

2005 Trio Jaw Crusher

(assuming tertiary crushing in acc w/Guidance statement 5/3/99)

Maximum Process Rate = 150 ton/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Based on AP-42

Emission Factor = 0.0054 lb/ton (crushing, AP 42, Table 11.19.2-2,8/04)

Control Efficiency = 50%

Calculation: (150 ton/hr) * (5000 hrs/yr) * (0.0054 lb/ton) * (ton/2000 lb) * (1 - 50/100) = 1.01 ton/yr

PM₁₀ Emissions:

Based on AP-42

Emission Factor = 0.0024 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: (150 ton/hr) * (5000 hrs/yr) * (0.0024 lb/ton) * (ton/2000 lb) * (1 - 50/100) = 0.45 ton/yr

PM_{2.5} Emissions:

Emission Factor = 0.0001 lb/ton (tertiary crushing (controlled), AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 0% (built into emission factor)

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0001 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) = 0.04 \text{ ton/yr}$

1992 Nordberg Closed Circuit Crusher

(assuming tertiary crushing in acc w/Guidance statement 5/3/99)

Maximum Process Rate = 125 ton/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Based on AP-42

Emission Factor = 0.0054 lb/ton (crushing, AP 42, Table 11.19.2-2,8/04)

Control Efficiency = 50%

Calculation: $(125 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0054 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.84 \text{ ton/yr}$

PM₁₀ Emissions:

Based on AP-42

Emission Factor = 0.0024 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(125 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0024 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.38 \text{ ton/yr}$

PM_{2.5} Emissions:

Emission Factor = 0.0001 lb/ton (tertiary crushing (controlled), AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 0% (built into emission factor)

Calculation: $(125 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0001 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) = 0.03 \text{ ton/yr}$

Pre-1983 Cedar Rapids

2 deck Screen

-
Maximum Process Rate = 250 ton/hr (Company Information)

Maximum Hours of Operation = 5,000 hrs/yr

Number of Screens = 1 screen(s) (Company Information)

Total PM Emissions:

Emission Factor = 0.025 lb/ton (0.025 uncontrolled, 0.0022 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(250 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.025 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) * (1 - 50/100) = 7.81 \text{ ton/yr}$

Total PM₁₀ Emissions:

Emission Factor = 0.0087 lb/ton (0.0087 uncontrolled, 0.00074 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(250 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0087 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) * (1 - 50/100) = 2.72 \text{ ton/yr}$

Total PM_{2.5} Emissions:

Emission Factor = 0.00005 lb/ton (0.000050 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 0% (built into emission factor)

Calculation: $(250 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00005 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) = 0.03 \text{ ton/yr}$

Pre-1983 Cedar Rapids
3 deck Screen

-
Maximum Process Rate = 150 ton/hr (Company Information)
Maximum Hours of Operation = 5,000 hrs/yr
Number of Screens = 1 screen(s) (Company Information)

Total PM Emissions:

Emission Factor = 0.025 lb/ton (0.025 uncontrolled, 0.0022 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.025 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) * (1 - 50/100) = 4.69 \text{ ton/yr}$

Total PM10 Emissions:

Emission Factor = 0.0087 lb/ton (0.0087 uncontrolled, 0.00074 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0087 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) * (1 - 50/100) = 1.63 \text{ ton/yr}$

Total PM_{2.5} Emissions:

Emission Factor = 0.00005 lb/ton (0.000050 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 0% (built into emission factor)

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00005 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) = 0.02 \text{ ton/yr}$

Wash plant pre-1983
3 deck screen

Maximum Process Rate = 150 ton/hr (Company Information)
Maximum Hours of Operation = 5,000 hrs/yr
Number of Screens = 1 screen(s) (Company Information)

Total PM Emissions:

Emission Factor = 0.025 lb/ton (0.025 uncontrolled, 0.0022 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.025 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) * (1 - 50/100) = 4.69 \text{ ton/yr}$

Total PM10 Emissions:

Emission Factor = 0.0087 lb/ton (0.0087 uncontrolled, 0.00074 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0087 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) * (1 - 50/100) = 1.63 \text{ ton/yr}$

Total PM_{2.5} Emissions:

Emission Factor = 0.00005 lb/ton (0.000050 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 0% (built into emission factor)

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00005 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ screen(s)}) = 0.02 \text{ ton/yr}$

Material Transfer

Conveyor Transfer Point

Maximum Process Rate = 250 ton/hr (Company Information)

Maximum Hours of Operation = 5,000 hrs/yr

Number of Transfers = 12 transfer (Company Information)

Total PM Emissions:

Emission Factor = 0.003 lb/ton (0.0030 uncontrolled, 0.00014 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(250 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.003 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (12 \text{ transfer}) * (1 - 50/100) = 11.25 \text{ ton/yr}$

Total PM₁₀ Emissions:

Emission Factor = 0.0011 lb/ton (0.00110 uncontrolled, 0.000046 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(250 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0011 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (12 \text{ transfer}) * (1 - 50/100) = 4.13 \text{ ton/yr}$

Filterable PM_{2.5} Emissions:

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

Control Efficiency = 0% (built into emission factor)

Calculation: $(250 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.000013 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (12 \text{ transfer}) = 0.10 \text{ ton/yr}$

Wash Plant Material Transfer

Conveyor Transfer Point

Maximum Process Rate = 150 ton/hr (Company Information)

Maximum Hours of Operation = 5,000 hrs/yr

Number of Transfers = 12 transfer (Company Information)

Total PM Emissions:

Emission Factor = 0.003 lb/ton (0.0030 uncontrolled, 0.00014 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.003 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (12 \text{ transfer}) * (1 - 50/100) = 6.75 \text{ ton/yr}$

Total PM₁₀ Emissions:

Emission Factor = 0.0011 lb/ton (0.00110 uncontrolled, 0.000046 controlled, AP 42, Table 11.19.2-2, 8/04)

Control Efficiency = 50%

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.0011 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (12 \text{ transfer}) * (1 - 50/100) = 2.48 \text{ ton/yr}$

Filterable PM_{2.5} Emissions:

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

Control Efficiency = 0% (built into emission factor)

Calculation: $(150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.000013 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (12 \text{ transfer}) = 0.06 \text{ ton/yr}$

Storage Piles

Maximum Process Rate = 550 ton/hr (sum of all screen capacities)

Maximum Hours of Operation = 5,000 hrs/yr

Number of Piles = 1 pile (for simplicity assume maximum production potential dropping into a single pile)

PM Emissions:

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

$$\text{Emission Factor} = k (0.0032) * (U/5)^{1.3} * (M / 2)^{-1.4} = 0.00330 \text{ lb/ton}$$

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 = 8.2 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)

M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)

Control Efficiency = 50% (Water or chemical spray)

$$\text{Calculation: } (550 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00330 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ piles}) * (1 - 50/100) = 2.27 \text{ ton/yr}$$

PM₁₀ Emissions:

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

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

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 = 8.2 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)

M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)

Control Efficiency = 50% (Water or chemical spray)

$$\text{Calculation: } (550 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00156 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ piles}) * (1 - 50/100) = 1.07 \text{ ton/yr}$$

Filterable PM_{2.5} Emissions:

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

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

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)

Control Efficiency = 50% (Water or chemical spray)

$$\text{Calculation: } (550 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00024 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ piles}) * (1 - 50/100) = 0.16 \text{ ton/yr}$$

Wash Plant Storage Piles

Maximum Process Rate = 150 ton/hr (Company information. Wash plant max process rate)

Maximum Hours of Operation = 5,000

Number of Piles = 1 pile (for simplicity assume maximum production potential dropping into a single pile)

PM Emissions:

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

$$\text{Emission Factor} = k (0.0032) * (U/5)^{1.3} * (M / 2)^{-1.4} = 0.00330 \text{ lb/ton}$$

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 = 8.2 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)

M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)

Control Efficiency = 50% (Water or chemical spray)

$$\text{Calculation: } (150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00330 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ piles}) * (1 - 50/100) = 0.62 \text{ ton/yr}$$

PM₁₀ Emissions:

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

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

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 = 8.2 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)
 M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)

Control Efficiency = 50% (Water or chemical spray)

$$\text{Calculation: } (150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00156 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ piles}) * (1 - 50/100) = 0.29 \text{ ton/yr}$$

Filterable PM_{2.5} Emissions:

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

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

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)

Control Efficiency = 50% (Water or chemical spray)

$$\text{Calculation: } (150 \text{ ton/hr}) * (5000 \text{ hrs/yr}) * (0.00024 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 \text{ piles}) * (1 - 50/100) = 0.04 \text{ ton/yr}$$

Haul Roads

Vehicle Miles Traveled (VMT) per Day = 7 VMT/day (Estimate)

$$\text{VMT per hour} = (7 \text{ VMT/day}) * (\text{day}/24 \text{ hrs}) = 0.29 \text{ VMT/hr}$$

Hours of Operation = 5,000 hrs/yr

PM Emissions:

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

$$\text{Emission Factor} = k * (s / 12)^a * (W / 3)^b = 9.56 \text{ lb/VMT}$$

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 = 30 tons

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)

$$\text{Calculation: } (5000 \text{ hrs/yr}) * (0.29 \text{ VMT/hr}) * (9.56 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 3.49 \text{ tons/yr (Apply 50\% control efficiency)}$$

PM₁₀ Emissions:

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

$$\text{Emission Factor} = k * (s / 12)^a * (W / 3)^b = 2.64 \text{ lb/VMT}$$

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 = 30 tons

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)

$$\text{Calculation: } (5000 \text{ hrs/yr}) * (0.29 \text{ VMT/hr}) * (2.64 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.96 \text{ tons/yr (Apply 50\% control efficiency)}$$

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: $(5000 \text{ hrs/yr}) * (0.29 \text{ VMT/hr}) * (0.34 \text{ lb/VMT}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.13 \text{ tons/yr}$ (Apply 50% control efficiency)

Process: Fastway Batch Plant 40 yd³/hr (1 of 2, both have identical emissions information)

	PM	PM ₁₀	PM _{2.5}
Aggregate delivery to ground storage (3-05-011-21)	0.320	0.155	0.048
Sand delivery to ground storage (3-05-011-22)	0.075	0.035	0.011
Aggregate transfer to conveyor (3-05-011-23)	0.320	0.155	0.048
Sand transfer to conveyor (3-05-011-24)	0.075	0.035	0.011
Aggregate transfer to elevated storage (3-05-011-04)	0.320	0.155	0.048
Sand transfer to elevated storage (3-05-011-05)	0.075	0.035	0.011
Cement delivery to silo (3-05-011-07)	0.000	0.000	0.000
Cement supplement delivery to silo (3-05-011-17)	0.000	0.000	0.000
Weigh hopper loading (3-05-011-08)	0.395	0.190	0.059
Central Mix Loading (3-05-011-09)	28.600	7.800	4.290
TOTAL	30.180	8.560	4.527

NOTE

All emissions for concrete batch emissions are based on AP-42, Central Mix Concrete Batching, Table 11.12-6, 6/06 with the exception of Concrete Mix Loading which is based on Table 11.12-2.
 PM_{2.5} emissions are assumed to be 15% of PM emissions, AP-42, Appendix B.2, Category 3, 9/90.

Aggregate delivery to ground storage (3-05-011-21)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0064 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0064 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.32 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0031 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0031 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.155 \text{ ton/yr}$

Sand delivery to ground storage (3-05-011-22)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0015 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0015 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.075 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0007 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0007 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.035 \text{ ton}/\text{yr}$

Aggregate transfer to conveyor (3-05-011-23)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0064 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0064 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.32 \text{ ton}/\text{yr}$

PM₁₀ Emissions:

Emission Factor = 0.0031 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0031 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.155 \text{ ton}/\text{yr}$

Sand transfer to conveyor (3-05-011-24)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0015 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0015 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.075 \text{ ton}/\text{yr}$

PM₁₀ Emissions:

Emission Factor = 0.0007 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0007 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.035 \text{ ton}/\text{yr}$

Aggregate transfer to elevated storage (3-05-011-04)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0064 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0064 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.32 \text{ ton}/\text{yr}$

PM₁₀ Emissions:

Emission Factor = 0.0031 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0031 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.155 \text{ ton}/\text{yr}$

Sand transfer to elevated storage (3-05-011-05)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0015 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0015 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.075 \text{ ton}/\text{yr}$

PM₁₀ Emissions:

Emission Factor = 0.0007 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0007 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) =$

Cement delivery to silo (3-05-011-07)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0002 lb/yd³

Control Efficiency = 99.9% filter fabric dust collector

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0002 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0001 lb/yd³

Control Efficiency = 99.9%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0001 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

Cement supplement delivery to silo (3-05-011-17)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0003 lb/yd³

Control Efficiency = 99.9% filter fabric dust collector

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0003 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0002 lb/yd³

Control Efficiency = 99.9%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0002 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

Weigh hopper loading (3-05-011-08)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0079 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0079 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.395 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0038 lb/yd³

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0038 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.19 \text{ ton/yr}$

Central Mix Loading (3-05-011-09)

Maximum Process Rate = 40 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.572 lb/ton

Convert to lb/yd³ from lb/ton: $(0.5720 \text{ lb/ton}) * 0.14 =$

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.572 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 28.6 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.156 lb/ton

Convert to lb/yd³ from lb/ton: $(0.1560 \text{ lb/ton}) * 0.14 =$

Control Efficiency = 50%

Calculation: $(40 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.156 \text{ lb}/\text{ton}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 7.8 \text{ ton}/\text{yr}$

Process: Coneco Batch Plant 100 yd³/hr

	PM	PM₁₀	PM_{2.5}
Aggregate delivery to ground storage (3-05-011-21)	0.800	0.388	0.12
Sand delivery to ground storage (3-05-011-22)	0.188	0.088	0.03
Aggregate transfer to conveyor (3-05-011-23)	0.800	0.388	0.12
Sand transfer to conveyor (3-05-011-24)	0.188	0.088	0.03
Aggregate transfer to elevated storage (3-05-011-04)	0.800	0.388	0.12
Sand transfer to elevated storage (3-05-011-05)	0.188	0.088	0.03
Cement delivery to silo (3-05-011-07)	0.000	0.000	0.00
Cement supplement delivery to silo (3-05-011-17)	0.000	0.000	0.00
Weigh hopper loading (3-05-011-08)	0.988	0.475	0.15
Central Mix Loading (3-05-011-09)	71.500	19.500	10.73
TOTAL	75.450	21.400	11.318

NOTE

All emissions for concrete batch emissions are based on AP-42, Central Mix Concrete Batching, Table 11.12-6, 6/06 with the exception of Concrete Mix Loading which is based on Table 11.12-2..

PM_{2.5} emissions are assumed to be 15% of PM emissions, AP-42, Appendix B.2, Category 3, 9/90.

Aggregate delivery to ground storage (3-05-011-21)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0064 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0064 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.8 \text{ ton}/\text{yr}$

PM₁₀ Emissions:

Based on AP-42

Emission Factor = 0.0031 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0031 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.3875 \text{ ton}/\text{yr}$

Sand delivery to ground storage (3-05-011-22)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0015 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs}/\text{yr}) * (0.0015 \text{ lb}/\text{yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.1875 \text{ ton}/\text{yr}$

PM₁₀ Emissions:

Emission Factor = 0.0007 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0007 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.0875 \text{ ton/yr}$

Aggregate transfer to conveyor (3-05-011-23)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0064 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0064 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.8 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0031 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0031 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.3875 \text{ ton/yr}$

Sand transfer to conveyor (3-05-011-24)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0015 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0015 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.1875 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0007 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0007 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.0875 \text{ ton/yr}$

Aggregate transfer to elevated storage (3-05-011-04)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0064 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0064 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.8 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0031 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0031 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.3875 \text{ ton/yr}$

Sand transfer to elevated storage (3-05-011-05)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0015 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0015 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.1875 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0007 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0007 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.0875 \text{ ton/yr}$

Cement delivery to silo (3-05-011-07)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0002 lb/yd³

Control Efficiency = 99.9% filter fabric dust collector

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0002 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0001 lb/yd³

Control Efficiency = 99.9% filter fabric dust collector

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0001 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

Cement supplement delivery to silo (3-05-011-17)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0003 lb/yd³

Control Efficiency = 99.9% filter fabric dust collector

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0003 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0002 lb/yd³

Control Efficiency = 99.9% filter fabric dust collector

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0002 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 99.9/100) = 0.00 \text{ ton/yr}$

Weigh hopper loading (3-05-011-08)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.0079 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0079 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.9875 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.0038 lb/yd³

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.0038 \text{ lb/yd}^3) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 0.475 \text{ ton/yr}$

Central Mix Loading (3-05-011-09)

Maximum Process Rate = 100 yd³/hr (Application information)

Maximum Hours of Operation = 5,000 hrs/yr

PM Emissions:

Emission Factor = 0.572 lb/ton

Convert to lb/yd³ from lb/ton: $(0.5720 \text{ lb/ton}) * 0.14 = 0.08008 \text{ lb/yd}^3$

Control Efficiency = 50%

Calculation: $(100 \text{ yd}^3/\text{hr}) * (5000 \text{ hrs/yr}) * (0.572 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 71.5 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor = 0.156 lb/ton

Convert to lb/yr from lb/ton: $(0.1560 \text{ lb/ton}) * 0.14 = 0.02184 \text{ lb/yr}$

Control Efficiency = 50%

Calculation: $(100 \text{ yr}) * (5000 \text{ hrs/yr}) * (0.156 \text{ lb/ton}) * (\text{ton}/2000 \text{ lb}) * (1 - 50/100) = 19.5 \text{ ton/yr}$

Diesel Engine Generator

Note: Emissions are based on the power output of the engine (150 hp).

Operational Capacity of Engine = 150 hp

Hours of Operation = 5,000.00 hours

PM, PM₁₀, PM_{2.5} Emissions (all PM assumed to be smaller than 1 micron):

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

Calculation: $(5,000 \text{ hours}) * (150 \text{ hp}) * (0.0022 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 0.83 \text{ ton/yr}$

NO_x Emissions:

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

Calculation: $(5,000 \text{ hours}) * (150 \text{ hp}) * (0.031 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 11.63 \text{ ton/yr}$

CO Emissions:

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

Calculation: $(5,000 \text{ hours}) * (150 \text{ hp}) * (0.00668 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 2.51 \text{ ton/yr}$

VOC Emissions:

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

Calculation: $(5,000 \text{ hours}) * (150 \text{ hp}) * (0.0025141 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 0.94 \text{ ton/yr}$

SO₂ Emissions:

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

Calculation: $(5,000 \text{ hours}) * (150 \text{ hp}) * (0.00205 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 0.769 \text{ ton/yr}$

Used emission factors for small engines to make de minimis friendly (small engine Efs more conservative than large engine Efs).

Diesel Engine Generator

Note: Emissions are based on the power output of the engine (676 hp).

Operational Capacity of Engine = 676 hp

Hours of Operation = 5,000.00 hours

PM, PM₁₀, PM_{2.5} Emissions (all PM assumed to be smaller than 1 micron):

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

Calculation: $(5,000 \text{ hours}) * (676 \text{ hp}) * (0.0022 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 3.72 \text{ ton/yr}$

NO_x Emissions:

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

Calculation: $(5,000 \text{ hours}) * (676 \text{ hp}) * (0.031 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 52.39 \text{ ton/yr}$

CO Emissions:

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

Calculation: $(5,000 \text{ hours}) * (676 \text{ hp}) * (0.00668 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 11.29 \text{ ton/yr}$

VOC Emissions:

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

Calculation: $(5,000 \text{ hours}) * (676 \text{ hp}) * (0.0025141 \text{ lbs/hp-hr}) * (\text{ton}/2000 \text{ lb}) = 4.25 \text{ ton/yr}$

SO₂ Emissions:

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

Calculation: (5,000 hours) * (676 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 3.465 ton/yr

Diesel Engine Generator

Note: Emissions are based on the power output of the engine (96 hp).

Operational Capacity of Engine = 96 hp

Hours of Operation = 5,000.00 hours

PM, PM₁₀, PM_{2.5} Emissions (all PM assumed to be smaller than 1 micron):

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

Calculation: (5,000 hours) * (96 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) = 0.53 ton/yr

NO_x Emissions:

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

Calculation: (5,000 hours) * (96 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 7.44 ton/yr

CO Emissions:

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

Calculation: (5,000 hours) * (96 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 1.60 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: (5,000 hours) * (96 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 0.60 ton/yr

SO₂ Emissions:

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

Calculation: (5,000 hours) * (96 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.492 ton/yr

Diesel Engine Generator

Note: Emissions are based on the power output of the engine (102 hp).

Operational Capacity of Engine = 102 hp

Hours of Operation = 5,000.00 hours

PM, PM₁₀, PM_{2.5} Emissions (all PM assumed to be smaller than 1 micron):

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

Calculation: (5,000 hours) * (102 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) = 0.56 ton/yr

NO_x Emissions:

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

Calculation: (5,000 hours) * (102 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 7.91 ton/yr

CO Emissions:

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

Calculation: (5,000 hours) * (102 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 1.70 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: (5,000 hours) * (102 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 0.64 ton/yr

SO₂ Emissions:

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

Calculation: (5,000 hours) * (102 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.523 ton/yr

V. Existing Air Quality

MAQP #2696-05 is for the operation of a portable crushing/screening plant and concrete batch plants to be located in the Section 13 and 14, Township 16 North, Range 16 East, in Fergus County, Montana. MAQP #2696-05 will also cover the operation while operating at any location within the State of Montana, excluding those counties that have a Department approved permitting program.

VI. Ambient Air Quality Impact Analysis

In the view of the Department, the amount of controlled emissions generated by this facility will not exceed any set ambient standard. In addition, this source is portable and any air quality impacts will be minimal.

VII. Taking or Damaging Implication Analysis

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

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

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

VIII. Environmental Assessment

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

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620-0901
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued For: Casino Creek Concrete, Inc.
P.O. Box 3501
Lewistown, MT 59457

MAQP Number: #2696-05

Preliminary Determination Issued: **April 4, 2011**

Department Decision Issued: **May 5, 2011**

Permit Final: **May 21, 2011**

1. *Legal Description of Site:* Casino Creek, submitted an application to operate a portable crushing/screening plant and concrete batch plants in Sections 13 and 14, Township 16 North, Range 16 East, in Fergus County, Montana. In addition, MAQP #2696-05 would apply while operating at any location in the state of Montana, except within those areas having a Department approved permitting program. *A Missoula County air quality permit would be required for locations within Missoula County, Montana.*
2. *Description of Project:* The permitting action is for the addition of a crusher feed hopper, a 676-hp diesel generator engine, a 96-hp diesel generator engine, a 102-hp diesel generator engine, a Fastway Batch Plant, and a pugmill. A 580-hp diesel generator engine and a 66 TPH crusher would be removed from the MAQP.
3. *Objectives of Project:* Casino Creek, in an effort to increase business and revenue for the company, has requested to add additional equipment to MAQP #2696-05. The addition of the equipment could be used to generate more aggregate for sale and use as well as supply wet mix concrete for sale and use in various construction operations.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Casino Creek demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A listing of the enforceable permit conditions and a permit analysis, including a BACT analysis, would be contained in Permit #2696-05.
6. *Regulatory Effects on Private Property Rights:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Terrestrial and Aquatic Life and Habitats			X			yes
B.	Water Quality, Quantity, and Distribution			X			yes
C.	Geology and Soil Quality, Stability, and Moisture			X			yes
D.	Vegetation Cover, Quantity, and Quality			X			yes
E.	Aesthetics			X			yes
F.	Air Quality			X			yes
G.	Unique Endangered, Fragile, or Limited Environmental Resource				X		yes
H.	Demands on Environmental Resource of Water, Air, and Energy			X			yes
I.	Historical and Archaeological Sites				X		yes
J.	Cumulative and Secondary Impacts			X			yes

Summary of Comments on Potential Physical and Biological Effects: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Terrestrials would use the area in which the crushing/screening operations and concrete batch plant operations occur. However, the operations would present only minor impacts upon terrestrial life in the area because of the small size and temporary nature of the operations. Impacts upon aquatic life in the area would also result, but would be minor, as the facility is a small and temporary source that would be located greater than 100 meters, a typical buffering zone, from the stream. Dispersion of the pollutants would, therefore, be sufficient as to protect the aquatic life from pollutant deposition. Also, the area in questions is an existing gravel pit permitted through the Industrial and Energy Minerals Bureau (IEMB). Therefore, reclamation activities of the site are addressed by the IEMB permit.

B. Water Quality, Quantity, and Distribution

Although there would be an increase in air emissions in the area where the additional equipment operations occur, there would be little impact on the water quality, quantity, and distribution because of the relatively small size and temporary nature of the operations. While deposition of pollutants would occur, the Department determined that any impacts from deposition of pollutants would be minor because of the small size and temporary nature of the facility. As described in Section 7.F of this EA, due to the conditions placed in MAQP #2696-05, the maximum impacts from the air emissions of this equipment would be relatively minor.

Water would be required for dust suppression, but would only cause a minor disturbance to the area. No surface water or ground water quality problems would result from using water for pollution control. Any accidental spills or equipment leaks would be handled according to the

appropriate environmental regulations in an effort to minimize any potential adverse impact on the immediate and surrounding area. Therefore, the current permit action would have only minor impacts to water quality, quantity, and distribution.

C. Geology and Soil Quality, Stability, and Moisture

There would be minor impacts to the geology and soil quality, stability, and moisture near the facility due to installation of the additional equipment, increased vehicle traffic, the use of water to control dust, and deposition of pollutants from the facility. Any impacts to the geology and soil quality, stability, and moisture would be minor because the relatively small size and portable nature of the operation. As explained in Section 7.F of this EA, the relatively small size and temporary nature of the operations and conditions placed in MAQP #2696-05 would minimize the impacts from deposition. Given the relatively small size and portable nature of the operations, any impacts would be minor.

D. Vegetation Cover, Quantity, and Quality

There would be minor impacts on the vegetative cover, quantity, and quality, because small amounts of vegetation would likely be disturbed from the additional equipment operations. In addition, pollutant deposition would occur on the surrounding vegetation. However, as explained in Section 7.F of this EA, the Department determined that, due to the relatively small size and temporary nature of the operations and conditions placed in MAQP #2696-05, any impacts from pollutant deposition would be minor. Also, because the water usage would be minimal (as described in Section 7.B) and the associated soil disturbance would be minimal (as described in Section 7.C) corresponding vegetative impacts would also be minimal.

E. Aesthetics

The additional equipment at the crushing/screening and concrete batch plant operations would be visible and would create additional noise in the area. MAQP #2696-05 would include conditions to control emissions, including visible emissions, from the plant. Since the additional equipment would be operated at a facility where operations are considered a minor source of air pollution, a portable source, and would be located within an existing pit that has been previously used for crushing/screening activities, any visual and noise impacts would be minor.

F. Air Quality

The air quality pollutant emissions impacts from the additional equipment at the crushing/screening and concrete batch plant operations would be minor because MAQP #2696-05 would include conditions limiting the opacity from the plant, as well as requiring water spray bars, and other means to control air pollution. Additionally, the facilities capacity is relatively small when compared to other similar permitted sources, would have intermittent use, and would include washing of the aggregate materials. The operations would be limited by MAQP #2696-05 to total particulate emissions of 250 ton/year or less from non-fugitive sources at the plant, in addition to any other equipment at the site. However, since the facilities potential emissions are below 100 ton/year for any Title V pollutant generated, the Department recognizes the facility as a minor source of air pollution. The equipment would be required to use water spray to further reduce pollutant emissions from equipment operations, storage piles, and haul roads. The facility would also use a wash plant, which would further reduce emissions from the aggregate. The proposed site is an area where similar industrial disturbance has previously occurred, is a permitted open cut pit, where good pollutant dispersion would occur, and is in an area where any potential impacts would be minimal.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The proposed project would have no impact on any unique endangered, fragile, or limited environmental resources because there are no such resources in the area. Since no such resources have been identified and the source is small and portable, no impacts upon these resources from pollutant deposition are expected. The Department, in an effort to assess any potential impacts, contacted the Montana Natural Heritage Program (MNHP) to identify any species of special concern associated with the proposed site location. Search results concluded there are no such environmental resources in the area. Area, in this case, is defined by the township and range of the proposed site, with an additional one-mile buffer. The location has been identified by Casino Creek as the Sections 13 and 14, Township 16 North, Range 16 East, in Fergus County, Montana.

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

Due to the size of the facility, the crushing/screening and concrete batch plant operations would only require small quantities of water, air, and energy for proper operation, due to the size of the facility. Small quantities of water would be used for dust suppression and would control emissions being generated at the site. The groundwater is reported to be 90 feet below the ground surface and 500 feet from the stream. Energy requirements would also be small, as the facility is a small crushing/screening operation powered by two small diesel generators. At this site, generators would be used intermittently as commercial power would be the main power source. Air resources and subsequent impacts would also be minor because the source is a small and temporary source with dispersion taking place within a disturbed industrial gravel pit. Generally, the operations are seasonal, and would result in even smaller demands on the environmental resources of water, air, and energy. Any impacts, therefore, would be minor.

I. Historical and Archaeological Sites

The Department contacted the Montana Historical Society - State Historical Preservation Office (SHPO) in an effort to identify any historical and/or archaeological sites that may be present in the proposed area of construction/operation. Search results have concluded that there are no historical or archaeological resources of concern. Additionally, the open cut mining program conducted an inspection of the area and found no evidence of such resources. The crushing/screening and concrete batch plant operations would locate within a previously disturbed, permitted open cut pit. Therefore, the operation would not have an effect on any known historic or archaeological site.

J. Cumulative and Secondary Impacts

The additional equipment at the crushing/screening and concrete batch plant facility would cause minor cumulative and secondary impacts to the physical and biological aspect to the human environment in the immediate area because the plant would generate emissions of particulate matter, PM₁₀, NO_x, VOC, CO, and SO_x. However, methods of pollution control would be incorporated to ensure that such emissions would be reduced and minimize impacts in the immediate and surrounding area. Noise impacts, as a result of operating the new equipment near the railway and highway, would have only minor cumulative effects on the surrounding physical and biological environment. There is potential for other operations to locate at this site. However, any operations would have to apply for and receive the appropriate permits from the Department prior to operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in MAQP #2696-05.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Social Structures and Mores				X		yes
B.	Cultural Uniqueness and Diversity				X		yes
C.	Local and State Tax Base and Tax Revenue			X			yes
D.	Agricultural or Industrial Production			X			yes
E.	Human Health			X			yes
F.	Access to and Quality of Recreational and Wilderness Activities			X			yes
G.	Quantity and Distribution of Employment				X		yes
H.	Distribution of Population				X		yes
I.	Demands for Government Services			X			yes
J.	Industrial and Commercial Activity			X			yes
K.	Locally Adopted Environmental Plans and Goals				X		yes
L.	Cumulative and Secondary Impacts			X			yes

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

A. Social Structures and Mores

The crushing/screening and concrete batch plant operation would cause no disruption to the social structures and mores in the area because the source is small and temporary and located in an existing rock quarry. There are no established native or traditional communities in the area of operation, and the nearest residence is over ½ mile away. Therefore, no impacts upon social structures or mores would result.

B. Cultural Uniqueness and Diversity

The additional equipment at the crushing/screening and concrete batch plant operations would have no impact on the cultural uniqueness and diversity of the proposed area because the source is small and temporary and would be operating in a permitted open cut pit in a relatively remote location. The nearest residence is approximately ½ mile away and the site is in a sparsely populated area of Montana. The use of the surrounding area would remain predominantly the same. The facility would be removed from the general population in the surrounding area and would be small, so impacts upon the cultural uniqueness and diversity of the area are not expected.

C. Local and State Tax Base and Tax Revenue

The additional equipment at the crushing/screening and concrete batch plant operations would have little, if any, affect on the local and state tax base and tax revenue because the facility would be a temporary source and it is small by industrial standards. The facility would not require

additional employees to operate, so only minor impacts to the local and state tax base and revenue could be expected. Furthermore, the impacts to local tax bases and revenue would be minor because the source would be portable and the money generated for taxes would be widespread.

D. Agricultural or Industrial Production

The additional equipment at the crushing/screening and concrete batch plant operations would locate in a permitted open cut pit. Because the facility would operate within a permitted open cut pit, upon completion of the operations, the area would be reclaimed, as specified, by the IEMB. Further, the crushing/screening operations are small by industrial standards and would, therefore, have only a minor impact on local industrial production.

E. Human Health

MAQP #2696-05 would incorporate conditions to ensure that the equipment would be operated in compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health. As described in Section 7.F. of this EA, the air emissions from this equipment would be minimized by the use of water spray and other emissions limits established in MAQP #2696-05. Since these conditions would be incorporated, only minor impacts to human health would be expected from the crushing/screening and concrete batch plant equipment.

F. Access to and Quality of Recreational and Wilderness Activities

The additional equipment at the crushing/screening and concrete batch plant operations would not affect access to recreational and wilderness activities because the area is along the nearby railway and surrounded by roadways. However, minor effects on the quality of recreational activities, as a result of search for quite aesthetics, would be created by noise from the site. However, other sources of noise already exist in the area, such as the railway and Highway 81.

G. Quantity and Distribution of Employment

The facility is a small and portable source that would move the equipment and corresponding employees to various locations throughout the state of Montana. The additional equipment would not affect the quantity and distribution of employment in the area because Casino Creek would only use a few employees for the project and the project is expected to be temporary for the portable source.

H. Distribution of Population

The crushing/screening and concrete batch plant operations are small. The human population within the area is also small and the nearest residence is ½ mile from the proposed site. Therefore, the population distribution in the area is not expected to be effected because of the temporary nature of the project, because the area in question is sparsely populated, and because the area has previously been used for similar operations.

I. Demands of Government Services

Minor increases of traffic would be seen on existing roadways in the area while the facility operations are in progress. In addition, government services would be required for acquiring the appropriate permits from government agencies. Demands for government services would be minor.

J. Industrial and Commercial Activity

The additional equipment at the crushing/screening and concrete batch plant operations would represent only a minor increase in the industrial activity in the given area because of the small size of the operations and the portable and temporary nature of the facility. No additional industrial or commercial activity is expected as a result of the proposed operation.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals that would be affected by the proposed project. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

The additional equipment at the crushing/screening and concrete batch plant operations would cause minor cumulative and secondary impacts to the social and economic aspect of the human environment in the immediate area. Operation of the additional equipment would occur at a portable, temporary source and would cause a slight increases in traffic in the immediate area, which would have secondary impacts on the social environment as a result of possible traffic delays. Because the source is a relatively small, temporary source, only minor cumulative economic impacts to the local economy could be expected from the operation of the facility.

Recommendation: An EIS is not required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: All potential effects resulting from construction and operation of the proposed facility are minor; therefore, an EIS is not required. MAQP #2696-05 includes conditions and limitations, which, if properly applied, will safeguard the environment.

Other groups or agencies contacted or which may have overlapping jurisdiction: Department of Environmental Quality - Permitting and Compliance Division (Air Resources Management Bureau and Industrial and Energy Minerals Bureau); Montana Natural Heritage Program; and State Historic Preservation Office (Montana Historical Society).

Individuals or groups contributing to this EA: Department of Environmental Quality (Air Resources Management Bureau and Industrial and Energy Minerals Bureau), Montana Natural Heritage Program, and State Historic Preservation Office (Montana Historical Society).

EA prepared by: Julie Merkel

Date: March 16, 2011