Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
P. O. Box 200901 Helena, MT 59620-0901 (406) 444-2544 Website: www.deq.mt.gov

December 9, 2008

Jacqueline Flikkema
Knife River Corporation
P.O. Box 9
Belgrade, MT 59714

Dear Ms. Flikkema:

Air Quality Permit #4068-01 is deemed final as of December 9, 2008, by the Department of Environmental Quality (Department). This permit is for a portable truck mix concrete batch plant. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-3490

Brent Lignell
Environmental Engineer
Air Resources Management Bureau
(406) 444-5311

VW:BL
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Air Quality Permit #4068-01

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Knife River Corporation – Belgrade
P.O. Box 9
Belgrade, MT 59714

December 9, 2008

AIR QUALITY PERMIT

Issued To: Knife River Corporation – Belgrade
P.O. Box 9
Belgrade, MT 59714

Permit: #4068-01
Administrative Amendment (AA) Request
Received: January 24, 2008
Department Decision on AA: November 21, 2008
Permit Final Issued: December 9, 2008
AFS #: 777-4068

An air quality permit, with conditions, is hereby granted to Knife River Corporation (Knife River), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

Knife River operates a portable truck mix concrete batch plant originally located at 47477 Gallatin Road, Big Sky, Montana. The legal description is the NE ¼ Section 5, Township 7 South, Range 4 East, in Gallatin County, Montana. However, Permit #4068-01 applies while operating at any location in Montana, except within those areas having a Department of Environmental Quality (Department)-approved permitting program, or those areas considered tribal lands. *A Missoula County air quality permit will be required for locations within Missoula County, Montana*.

Addendum #2 applies to the Knife River facility while operating at any location in or within 10 kilometers (km) of nonattainment areas for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31). A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Current Permit Action

On January 24, 2008, the Department received a request to change the permittee name from JTL Group, Inc. to Knife River. The current permit action is an administrative amendment pursuant to ARM 17.8.764 that changes the permittee name as requested. In addition to accounting for this name change, the permit updates the rule references, permit format, and the emissions inventory**.**

SECTION II: Conditions and Limitations

A. Emission Control Requirements

1. Knife River shall install, operate, and maintain a fabric filter dust collector and a rubber boot load-out spout (ARM 17.8.752):

   a. Knife River shall install, operate, and maintain a fabric filter dust collector on every cement and cement supplement silo ventilation opening; and

   b. Knife River shall install, operate, and maintain a rubber boot load-out spout on every product loadout opening on the concrete plant, where cementations and aggregate materials are transferred for mixing.

2. Knife River shall not cause or authorize to be discharged into the atmosphere from the ready mix 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).

3. Knife River shall have water and water spray bars available on site at all times and operated, as necessary, to prevent visible fugitive emissions from the conveyors (ARM 17.8.752).

4. Knife River shall not cause or authorize to be discharged into the atmosphere from any street, road, or parking lot any visible fugitive emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes and must take reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.752).

5. Knife River shall treat all unpaved portions of the haul roads, access roads, parking lots, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.4 (ARM 17.8.752).

6. Total concrete plant production shall be limited to 876,000 cubic yards of concrete during any rolling 12-month time period (ARM 17.8.749).

7. Knife River shall not operate more than one diesel engine generator, with a maximum rated design engine input capacity not to exceed 307 horsepower (HP) (ARM 17.8.749).

8. Knife River shall comply with all applicable standards and limitations, and the reporting, record keeping, and notification requirements contained in 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, for any applicable diesel engines (ARM 17.8.340, 40 CFR 60, Subpart IIII).

9. If the permitted equipment is used in conjunction with any other equipment owned or operated by Knife River, 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. The Department shall approve any calculations used to establish production levels (ARM 17.8.749).

B. Emissions Monitoring

1. Knife River shall inspect the fabric filter dust collector and its vents, which are used for controlling emissions from the silo and weigh hopper, every 6 months of operation to ensure that each collector is operating at the optimum efficiency. Records of inspections, repairs, and maintenance shall be kept for a minimum of 5 years (ARM 17.8.749).

2. Knife River shall maintain on-site records of inspections, repairs, and maintenance. All records compiled in accordance with this permit shall be maintained by Knife River as a permanent business record for at least 5 years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant site for inspection by the Department (ARM 17.8.749).

C. Testing Requirements

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

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

D. Operational Reporting Requirements

1. If this concrete batch 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 Intent to Transfer Form and the proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.765).

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

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

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

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

5. Knife River shall document, by month, the amount of concrete produced. By the 25th day of each month, Knife River shall calculate the total 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.6. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

SECTION III: Addendum

Knife River shall comply with all conditions in Addendum #2 to MAQP #4068-01, as applicable

(ARM 17.8.749).

SECTION IV: General Conditions

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

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

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

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

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

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Knife River may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must be begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

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

J. Knife River 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.

Permit Analysis
Knife River Corp.
Permit #4068-01

I. Introduction

A. Permitted Equipment

Knife River Corporation (Knife River) operates a portable truck mix concrete batch plant (maximum production rate of 100 cubic yards per hour), which includes the following:

- 3 aggregate feed bins with 3 conveyors (100 tons per hour each),
- 2006 Stephens three 70-ton aggregate compartment storage bins,
- 2006 Stephens aggregate batcher and transfer conveyor (200 tons per hour);
- Cement supplement (fly ash) silo with baghouse;
- 2006 Stephens cement silo with cement batcher. A fabric filter dust collector controls particulate matter (PM) emissions from the cement silo and a rubber boot load-out spout controls PM emissions from the cement batcher; and
- 1993 Caterpillar diesel engine generator (maximum rated design engine input capacity not to exceed 307 horsepower).

B. Source Description

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 and cement supplement silos transfer the cement and cement supplement (fly ash) into the batch plant where water is added. The sand, gravel, cement and cement supplement, 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 23, 2007, JTL Group, Inc. (JTL) was issued Permit #4068-00 for the operation of their portable truck mix concrete batch plant operation, originally located in the NE ¼ Section 5, Township 7 South, Range 4 East, in Gallatin County, Montana. This permit allowed JTL to operate a Stephens aggregate and cement batcher and a 205 kilowatt (kW) (275 horsepower (HP)) diesel engine and associated equipment.

D. Current Permit Action

On January 24, 2008, the Montana Department of Environmental Quality (Department) received a request to change the permittee name from JTL to Knife River. The current permit action is an administrative amendment pursuant to Administrative Rules of Montana (ARM) 17.8.764 that changes the permittee name as requested. In addition to accounting for this name change, the permit updates the rule references, permit format, and emissions inventory. **Permit #4068-01** replaces Permit #4068-00.

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 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 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 subchapter, unless indicated otherwise in a specific subchapter.

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

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Montana Clean Air Act, 75-2-101, *et seq*., Montana Code Annotated (MCA). Knife River shall comply with all requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

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

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

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

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

Knife River must comply with the applicable ambient air quality standards.

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

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

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

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

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

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

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

7. ARM 17.8.340 Standards of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS).

    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 F – Standards of Performance for Portland Cement Plants. This subpart does not apply because the truck mix plant does not meet the definition of a Portland Cement Plant.

    c. 40 CFR 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants. This subpart does not apply because Knife River does not crush or grind nonmetallic minerals, and therefore does not meet the definition of a nonmetallic mineral processing plant.

    d. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE). NSPS requirements apply to owners or operators of stationary CI ICE that commence construction, modification, or reconstruction after July 11, 2005, where the stationary CI ICE is manufactured after April 1, 2006, and is not a fire pump engine. CI ICE will be subject to this NSPS standard only if the engine remains or will remain at the permitted location for more than 12 months, or a shorter period of time for an engine located at a seasonal source. A seasonal source remains at a single location on a permanent basis (at least 2 years) and operates 3 months or more each year.
    The truck mix plant includes a CI ICE manufactured before April 1, 2006, and is

therefore not subject to this NSPS. However, since this permit is written in a de minimis friendly manner, should the proposed diesel engine/generator be replaced with an engine manufactured after April 1, 2006, NSPS requirements would apply to that engine/generator.

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 Knife River submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This 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, as 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 alteration to construct, alter or use any asphalt plant, crusher or screen that has the Potential to Emit (PTE) greater than 15 tons per year of any pollutant. Knife River has a PTE of greater than 15 tons per year of total particulate matter; 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. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. An affidavit of publication of public notice was not required for the current permit action because the permit change is

considered an administrative permit change.

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

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

8. ARM 17.8.755 Inspection of Permit. This rule requires that the Department shall make air quality permits available for inspection 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 Knife River of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, et seq.

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

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

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

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

14. ARM 17.8.765 Transfer of Permit. (1) This rule states that an air quality permit may be transferred from one location to another if the Department receives a complete notice of Intent to Transfer location, the facility will operate in the new location for less than 1 year, the facility will comply with the FCAA and the Clean Air Act of Montana, and the facility complies with other applicable rules. (2) This rule states that an air quality permit may be

transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

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

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

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

   This facility is not a major stationary source because it is not listed and does not have a PTE of greater than 250 tons per year (excluding fugitive emissions) of any air pollutant.

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

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

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

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

   c. PTE > 70 tons/year of particulate matter with an aerodynamic parameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #4068-01 for Knife River, the following conclusions were made:

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

   b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.

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

   d. This facility is not subject to any current NSPS standards.

   e. This facility is not subject to any current NESHAP standards.

   f. This source is not a Title IV affected source or a solid waste combustion unit.

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

   Based on these facts, the Department determined that this facility would be a minor source of emissions, as defined under the Title V Operating Permit Program.

III. Emission Inventory

	tons/year					
Emission Source	**PM**	**PM_{10}**	**NO_x**	**VOC**	**CO**	**SOx**
1. Aggregate Delivery to Ground Storage	2.82	1.35	--	--	--	--
2. Sand Delivery to Ground Storage	0.66	0.31	--	--	--	--
3. Aggregate Transfer to Conveyor	2.82	1.35	--	--	--	--
4. Sand Transfer to Conveyor	0.66	0.31	--	--	--	--
5. Aggregate Transfer to Elevated Storage	1.41	0.67	--	--	--	--
6. Sand Transfer to Elevated Storage	0.33	0.15	--	--	--	--
7. Cement Delivery to Storage Silo	0.11	0.04	--	--	--	--
8. Cement Supplement (Fly ash) Unloading to Silo	0.14	0.08	--	--	--	--
9. Weigh Hopper Loading of Sand/Aggregate	4.49	2.12	--	--	--	--
10. Truck Mix Loading	50.06	14.10	--	--	--	--
11. Diesel Generator	2.96	2.96	41.68	3.32	8.98	2.76
12. Haul Roads	5.68	1.57	--	--	--	--
Total	**72.13**	**25.00**	**41.68**	**3.32**	**8.98**	**2.76**

Notes: Inventory reflects throughput of approximately 200 tons/hour concrete, which is equivalent to the permit maximum of 876,000 cubic yards per year (II.A.6) and the 100 cubic yards per hour design capacity of the plant, operated 24 hours per day. Concrete constituent proportions determined assuming one cubic yard of concrete consists of 1,865 lbs coarse aggregate (46%), 1,428 lbs sand (35%), 491 lbs cement (12%), 73 lbs cement supplement (2%), and 167 lbs water (4%) (AP 42, Table 11.12-2, footnote a, 6/06).

1. Aggregate Delivery to Ground Storage

Maximum Process Rate = 93.25 ton/hr (46% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (93.25 ton/hr) * (0.0069 lb/ton) * (ton/2000 lb) = 2.82 ton/yr

PM_{10} Emissions:

Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (93.25 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) = 1.35 ton/yr

2. Sand Delivery to Ground Storage

Maximum Process Rate = 71.40 ton/hr (35% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (71.40 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) = 0.66 ton/yr

PM_{10} Emissions:

Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (71.40 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) = 0.31 ton/yr

3. Aggregate Transfer to Conveyor

Maximum Process Rate = 93.25 ton/hr (46% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (93.25 ton/hr) * (0.0069 lb/ton) * (ton/2000 lb) = 2.82 ton/yr

PM_{10} Emissions:

Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (93.25 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) = 1.35 ton/yr

4. Sand Transfer to Conveyor

Maximum Process Rate = 71.40 ton/hr (35% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (71.40 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) = 0.66 ton/yr

PM_{10} Emissions:

Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (71.40 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) = 0.31 ton/yr

5. Aggregate Transfer to Storage Bins

Maximum Process Rate = 93.25 ton/hr (46% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (93.25 ton/hr) * (0.0069 lb/ton) * (ton/2000 lb) * (1-50/100) = 1.41 ton/yr

PM_{10} Emissions:

Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (93.25 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) * (1-50/100) = 0.67 ton/yr

6. Sand Transfer to Storage Bins

Maximum Process Rate = 71.40 ton/hr (35% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (71.40 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) * (1-50/100) = 0.33 ton/yr

PM_{10} Emissions:

Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (71.40 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) * (1-50/100) = 0.15 ton/yr

7. Cement Delivery to Silo

Maximum Process Rate = 24.55 ton/hr (12% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.00099 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (24.55 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) = 0.11 ton/yr

PM_{10} Emissions:

Emission Factor = 0.00034 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (24.55 ton/hr) * (0.00034 lb/ton) * (ton/2000 lb) = 0.04 ton/yr

8. Cement Supplement Unloading to Silo

Maximum Process Rate = 3.65 ton/hr (2% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:

Emission Factor = 0.0089 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (3.65 ton/hr) * (0.0089 lb/ton) * (ton/2000 lb) = 0.14 ton/yr

PM_{10} Emissions:

Emission Factor = 0.0049 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (3.65 ton/hr) * (0.0049 lb/ton) * (ton/2000 lb) = 0.08 ton/yr

9. Weigh Hopper Loading of Sand/Aggregate

Maximum Process Rate = 201.20 ton/hr
Hours of Operation = 8,760 hr/yr
PM Emissions:
Emission Factor = 0.0051 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (201.20 ton/hr) * (0.0051 lb/ton) * (ton/2000 lb) = 4.49 ton/yr
PM_{10} Emissions:
Emission Factor = 0.0024 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (201.20 ton/hr) * (0.0024 lb/ton) * (ton/2000 lb) = 2.12 ton/yr

10. Truck Mix Loading of Cement/Supplement/Sand/Aggregate
Maximum Process Rate = 201.20 ton/hr
Hours of Operation = 8,760 hr/yr
PM Emissions:
Emission Factor = 0.0568 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (201.20 ton/hr) * (0.0568 lb/ton) * (ton/2000 lb) = 50.06 ton/yr
PM_{10} Emissions:
Emission Factor = 0.016 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (201.20 ton/hr) * (0.016 lb/ton) * (ton/2000 lb) = 14.10 ton/yr

11. Diesel Engine Generator
Emissions based on power output of engine (307 hp / 229 kW), not the generator (275 hp / 205 kW).
Operational Capacity of Engine = 307 hp
Hours of Operation = 8,760 hr/yr
PM Emissions:
PM Emissions = 2.96 ton/yr (Assume PM = PM_{10})
PM_{10} Emissions:
Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hr/yr) * (307 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) = 2.96 ton/yr
NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hr/yr) * (307 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 41.68 ton/yr
CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hr/yr) * (307 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 8.98 ton/yr
VOC Emissions:
Emission Factor = 0.00247 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hr/yr) * (307 hp) * (0.00247 lbs/hp-hr) * (ton/2000 lb) = 3.32 ton/yr
SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hr/yr) * (307 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 2.76 ton/yr

12. Haul Roads
Vehicle Miles Traveled (VMT) per Day = 5 VMT/day (Estimate)
Maximum Days of Operation = 365 days/yr
PM Emissions:
Emission Factor = $k * (s/12)^a * (W/3)^b$ = 12.46 lb/VMT (industrial sites, AP 42, Ch. 13.2.2, 11/06)
Where: k = constant = 4.9 lbs/VMT (Value for PM30/TSP, AP 42, Table 13.2.2-2, 11/06)
s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area,
AP 42, Table 13.2.2-1, 11/06)
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)
a = constant = 0.7 (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)
b = constant = 0.45 (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (5 VMT/day) * (365 days/yr) * (12.46 lb/VMT) * (ton/2000 lb) * (1 - 50/100) = 5.68 ton/yr

PM_{10} Emissions:

Emission Factor = k * $(s/12)^a$ * $(W/3)^b$ = 3.43 lb/VMT (industrial sites, AP 42, Ch. 13.2.2, 11/06)

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

s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area,

AP 42, Table 13.2.2-1, 11/06)

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

a = constant = 0.9 (Value for PM_{10}, AP 42, Table 13.2.2-2, 11/06)

b = constant = 0.45 (Value for PM_{10}, AP 42, Table 13.2.2-2, 11/06)

Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (5 VMT/day) * (365 days/yr) * (3.43 lb/VMT) * (ton/2000 lb) * (1 - 50/100) = 1.57 ton/yr

IV. BACT Determination

A BACT determination is required for any new or altered source. Knife River shall install on any 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 for the current permit action because the permit change is considered an administrative permit change.

V. Existing Air Quality

Permit #4068-01 is issued for the operation of a portable truck mix concrete batch plant to be originally located locate at 47477 Gallatin Road, Big Sky, Montana in the NE ¼ Section 5, Township 7 South, Range 4 East, in Gallatin County, Montana. This facility would be allowed to operate at this proposed site and any other areas designated as attainment or unclassified for all National Ambient Air Quality Standards (NAAQS); excluding counties that have a Department approved permitting program, areas considered Tribal Lands, or areas in or within 10 kilometers (km) of certain PM_{10} nonattainment areas. The permit contains operational conditions and limitations that would protect air quality for this site and the surrounding area. Also, this facility is a portable source that would operate on an intermittent and temporary basis, so any effects to air quality will be minor and short-lived.

VI. Ambient Air Quality Impacts

This permit is for a portable truck mix concrete batch plant to be located in various locations around Montana. The amount of controlled particulate emissions generated by this project should not cause concentrations of PM_{10} in the ambient air that exceed any set standard. In addition, this source is portable and any air quality impacts will be short-lived.

VII. Taking or Damaging Implication Analysis

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

VIII. Environmental Assessment

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

Addendum #2
Knife River Corp.
Permit #4068-01

An addendum to Montana Air Quality Permit #4068-01 is issued to Knife River Corp. (Knife River), pursuant to Sections 75-2-204 and 75-2-211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.765, as amended, for the following:

I. Permitted Equipment

Knife River will operate a portable 100 cubic yard per hour truck mix concrete batch plant at various locations throughout Montana. This permit allows Knife River to operate a Stephens aggregate and cement batcher and a diesel engine generator (maximum rated design engine input capacity not to exceed 307 horsepower). A complete list of the permitted equipment is contained in Section I.A of the Permit Analysis.

Addendum #2 applies to the Knife River portable truck mix concrete batch plant while operating at any location in or within 10 kilometers (km) of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31).

II. Seasonal and Site Restrictions – Winter and Summer Season

Addendum #2 applies to the Knife River portable truck mix concrete batch plant while operating at any location in or within 10 km of certain PM_{10} nonattainment areas. Additionally, seasonal and site restrictions apply to the facility as follows:

A. During the winter season (October 1-March 31), the only location(s) in or within 10 km of certain PM_{10} nonattainment areas where Knife River may operate is:

- Any site that may be approved, in writing, by the Department.

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

C. Knife River shall comply with the limitations and conditions contained in Addendum #2 to Permit #4068-01. Addendum #2 shall be valid until revoked or modified. The Department reserves the authority to modify Addendum #2 at any time based on local conditions of any future site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

A. Operational Limitations and Conditions – Winter Season (October 1 – March 31)

1. Water spray bars must be operated when necessary on all conveyors whenever the plant is operating (ARM 17.8.749).

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

3. Knife River shall not cause or authorize to be discharged into the atmosphere from any

equipment, such as screens or transfer points, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

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

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

6. Concrete plant production is limited to 1405 cubic yards per day (ARM 17.8.749).

7. Knife River shall not operate more than one diesel engine generator, with a maximum rated design engine input capacity not to exceed 307 horsepower (HP) (ARM 17.8.749).

B. Operational Limitations and Conditions – Summer Season (April 1 – September 30)

1. Water spray bars must be operated when necessary on all conveyors whenever the plant is operating (ARM 17.8.749).

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

3. Knife River shall not cause or authorize to be discharged into the atmosphere from any equipment, such as screens or transfer points, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

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

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

6. Concrete plant production is limited to 2400 cubic yards per day (ARM 17.8.749).

7. Knife River shall not operate more than one diesel engine generator, with a maximum rated design engine input capacity not to exceed 307 horsepower (HP) (ARM 17.8.749).

C. Operational Reporting Requirements

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

2. Knife River shall provide the Department with written notice of relocation of the permitted equipment within 15 working days before the physical transfer of the equipment (ARM 17.8.765). If this crushing/screening plant is moved to another nonattainment location, an Intent to Transfer form must be sent to the Department and a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area to which the

transfer is to be made, at least 15 days prior to the move. The proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.749 and ARM 17.8.765).

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

   a. Tons of material crushed by each crusher at each site (including amount of recirculated/rerun material),

   b. Tons of material screened by each screen at each site (including amount of recirculated/rerun material),

   c. Tons of bulk material loaded at each site (production),

   d. Daily hours of operation at each site,

   e. Gallons of diesel used by each generator at each site,

   f. Hours of operation and sizes for each generator at each site,

   g. Fugitive dust information consisting of the total miles driven on unpaved roads for all plant vehicles.

4. Knife River shall document, by day, the total concrete plant production during the winter season. Knife River shall sum the total concrete plant production during the previous day to verify compliance with the limitation in Section III.A.6. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).

5. Knife River shall document, by day, the total concrete plant production during the summer season. Knife River shall sum the total concrete plant production during the previous day to verify compliance with the limitation in section III.B.6. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).

Addendum #2 Analysis
Knife River Corp.
Permit #4068-00

I. Permitted Equipment

Knife River Corp. (Knife River) operates a portable 100 cubic yard per hour truck mix concrete batch plant at various locations throughout Montana. This permit allows Knife River to operate a Stephens aggregate and cement batcher and a diesel engine generator (maximum rated design engine input capacity not to exceed 307 horsepower). A complete list of the permitted equipment is contained in Section I.A of the Permit Analysis.

Addendum #2 applies to the Knife River truck mix concrete batch plant while operating at any location in or within 10 kilometers (km) of particulate matter with an aerodynamic parameter of 10 microns or less (PM_{10}) nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31).

II. Source Description

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 and cement supplement silos transfer the cement and cement supplement (fly ash) into the batch plant where water is added. The sand, gravel, cement and cement supplement, 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.

III. Applicable Rules and Regulations

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

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

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

B. ARM 17.8.764 Modification of Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. A source may not increase its emissions beyond those found in its permit unless the source applies for and receives another permit.

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

1. Written notice of Intent to Transfer location and proof of public notice are sent to the Department;

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

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

Knife River must submit proof of compliance with the transfer and public notice requirements when Knife River transfers to any of the locations covered by this addendum and will only be allowed to stay in the new location for a period of less than 1 year. Also, the conditions and limitations in Addendum #2 to Permit #4068-01 will prevent Knife River from having a significant impact on PM_{10} nonattainment areas.

IV. Emission Inventory

SUMMER (April 1 – September 30)	**Pounds per Day**					
Emission Source	**PM**	**PM_{10}**	**NO_x**	**VOC**	**CO**	**SOx**
1. Aggregate Delivery to Ground Storage	15.44	7.39	--	--	--	--
2. Sand Delivery to Ground Storage	3.60	1.70	--	--	--	--
3. Aggregate Transfer to Conveyor	15.44	7.39	--	--	--	--
4. Sand Transfer to Conveyor	3.60	1.70	--	--	--	--
5. Aggregate Transfer to Elevated Storage	7.72	3.69	--	--	--	--
6. Sand Transfer to Elevated Storage	1.80	0.85	--	--	--	--
7. Cement Delivery to Storage Silo	0.58	0.20	--	--	--	--
8. Cement Supplement (Fly ash) Unloading to Silo	0.78	0.43	--	--	--	--
9. Weigh Hopper Loading of Sand/Aggregate	24.63	11.59	--	--	--	--
10. Truck Mix Loading	274.28	77.26	--	--	--	--
11. Diesel Generator	16.21	16.21	228.41	18.20	49.22	15.10
12. Haul Roads	31.15	8.59	--	--	--	--
Total	**395.23**	**136.98**	**228.41**	**18.20**	**49.22**	**15.10**

Notes: The inventory reflects the maximum operation capacity of 100 cubic yards per hour, operated 24 hours per day, which is equivalent to approximately 200 tons/hr of concrete production. None of the resulting emissions exceed the Department modeling threshold of 547 lbs per day for summer operation. Therefore, there are no summertime restrictions on production for this facility. Concrete constituent proportions determined assuming one cubic yard of concrete consists of 1,865 lbs coarse aggregate (46%), 1,428 lbs sand (35%), 491 lbs cement (12%), 73 lbs cement supplement (2%), and 167 lbs water (4%) (AP 42, Table 11.12-2, footnote a, 6/06).

1. Aggregate Delivery to Ground Storage

Maximum Process Rate = 93.25 tons/hr (46% of total concrete)
Hours of Operation = 24 hours

PM Emissions:

Emission Factor = 0.0069 lbs/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hours) * (93.25 tons/hr) * (0.0069 lbs/ton) = 15.44 lbs

PM_{10}-10 Emissions:

Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hours) * (93.25 tons/hr) * (0.0033 lb/ton) = 7.39 lbs

2. Sand Delivery to Ground Storage
Maximum Process Rate = 71.40 ton/hr (35% of total concrete)
Hours of Operation = 24 hr/yr
PM Emissions:
Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (71.40 ton/hr) * (0.0021 lb/ton) = 3.60 lbs
PM_{10} Emissions:
Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (71.40 ton/hr) * (0.00099 lb/ton) = 1.70 lbs

3. Aggregate Transfer to Conveyor
Maximum Process Rate = 93.25 ton/hr (46% of total concrete)
Hours of Operation = 24 hr/yr
PM Emissions:
Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (93.25 ton/hr) * (0.0069 lb/ton) = 15.44 lbs
PM_{10} Emissions:
Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (93.25 ton/hr) * (0.0033 lb/ton) = 7.39 lbs

4. Sand Transfer to Conveyor
Maximum Process Rate = 71.40 ton/hr (35% of total concrete)
Hours of Operation = 24 hr/yr
PM Emissions:
Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (71.40 ton/hr) * (0.0021 lb/ton) = 3.60 lbs
PM_{10} Emissions:
Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (71.40 ton/hr) * (0.00099 lb/ton) = 1.70 lbs

5. Aggregate Transfer to Storage Bins
Maximum Process Rate = 93.25 ton/hr (46% of total concrete)
Hours of Operation = 24 hr/yr
PM Emissions:
Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (93.25 ton/hr) * (0.0069 lb/ton) * (1-50/100) = 7.72 lbs
PM_{10} Emissions:
Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (93.25 ton/hr) * (0.0033 lb/ton) * (1-50/100) = 3.69 lbs

6. Sand Transfer to Storage Bins
Maximum Process Rate = 71.40 ton/hr (35% of total concrete)
Hours of Operation = 24 hr/yr
PM Emissions:
Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (71.40 ton/hr) * (0.0021 lb/ton) * (1-50/100) = 1.80 lbs
PM_{10} Emissions:
Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)

PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (71.40 ton/hr) * (0.00099 lb/ton) * (1-50/100) = 0.85 lbs

7. Cement Delivery to Silo

Maximum Process Rate = 24.55 ton/hr (12% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.00099 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (24.55 ton/hr) * (0.00099 lb/ton) = 0.58 lbs

PM_{10} Emissions:

Emission Factor = 0.00034 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (24.55 ton/hr) * (0.00034 lb/ton) = 0.20 lbs

8. Cement Supplement Unloading to Silo

Maximum Process Rate = 3.65 ton/hr (2% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0089 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (3.65 ton/hr) * (0.0089 lb/ton) = 0.78 lbs

PM_{10} Emissions:

Emission Factor = 0.0049 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (3.65 ton/hr) * (0.0049 lb/ton) = 0.43 lbs

9. Weigh Hopper Loading of Sand/Aggregate

Maximum Process Rate = 201.20 ton/hr
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0051 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (201.20 ton/hr) * (0.0051 lb/ton) = 24.63 lbs

PM_{10} Emissions:

Emission Factor = 0.0024 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (201.20 ton/hr) * (0.0024 lb/ton) = 11.59 lbs

10. Truck Mix Loading of Cement/Supplement/Sand/Aggregate

Maximum Process Rate = 201.20 ton/hr
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0568 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (201.20 ton/hr) * (0.0568 lb/ton) = 274.28 lbs

PM_{10} Emissions:

Emission Factor = 0.016 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (201.20 ton/hr) * (0.016 lb/ton) = 77.26 lbs

11. Diesel Engine Generator

Note: Emissions are based on the power output of the engine (307 hp / 229 kW), not the generator (275 hp / 205 kW).
Operational Capacity of Engine = 307 hp
Hours of Operation = 24 hours

PM Emissions:

PM Emissions = 16.21 lbs (Assume PM = PM_{10})

PM_{10} Emissions:

Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.0022 lbs/hp-hr) = 16.21 lbs

NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.031 lbs/hp-hr) = 228.41 lbs
CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.00668 lbs/hp-hr) = 49.22 lbs
VOC Emissions:
Emission Factor = 0.00247 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.00247 lbs/hp-hr) = 18.20 lbs
SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.00205 lbs/hp-hr) = 15.10 lbs

12. Haul Roads
Vehicle Miles Traveled (VMT) per Day = 5 VMT/day (Estimate)
VMT per hour = (5 VMT/day) * (day/24 hrs) = 0.21 VMT/hr
Hours of Operation = 24 hours
PM Emissions:
Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.
Emission Factor = $k * (s / 12)^a * (W / 3)^b$ = 12.46 lb/VMT
Where: k = constant = 4.9 lbs/VMT (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)
s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)
a = constant = 0.7 (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)
b = constant = 0.45 (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)
Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (24 hours) * (0.21 VMT/hr) * (12.46 lb/VMT) * (1-50/100) = 31.15 lbs
PM_{10} Emissions:
Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.
Emission Factor = $k * (s / 12)^a * (W / 3)^b$ = 3.43 lb/VMT
Where: k = constant = 1.5 lbs/VMT (Value for PM_{10}, 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_{10}, AP 42, Table 13.2.2-2, 11/06)
b = constant = 0.45 (Value for PM_{10}, AP 42, Table 13.2.2-2, 11/06)
Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (24 hours) * (0.21 VMT/hr) * (3.43 lb/VMT) * (1-50/100) = 8.59 lbs

WINTER (October 1 – March 31)	Pounds per Day					
Emission Source	**PM**	**PM_{10}**	**NO_x**	**VOC**	**CO**	**SOx**
1. Aggregate Delivery to Ground Storage	9.06	4.33	--	--	--	--
2. Sand Delivery to Ground Storage	2.11	0.99	--	--	--	--
3. Aggregate Transfer to Conveyor	9.06	4.33	--	--	--	--
4. Sand Transfer to Conveyor	2.11	0.99	--	--	--	--
5. Aggregate Transfer to Elevated Storage	4.53	2.17	--	--	--	--
6. Sand Transfer to Elevated Storage	1.06	0.50	--	--	--	--
7. Cement Delivery to Storage Silo	0.34	0.12	--	--	--	--
8. Cement Supplement (Fly ash) Unloading to Silo	0.46	0.25	--	--	--	--
9. Weigh Hopper Loading of Sand/Aggregate	14.44	6.80	--	--	--	--
10. Truck Mix Loading	160.84	45.31	--	--	--	--
11. Diesel Generator	16.21	16.21	228.41	18.20	49.22	15.10
12. Haul Roads	31.15	8.59	--	--	--	--
Total	**251.35**	**90.58**	**228.41**	**18.20**	**49.22**	**15.10**
Total Excluding Haul Roads		**81.99**				

Notes: The Department's winter PM_{10} emissions threshold for modeling is 82 lbs/day. To ensure emissions stay below this level (excluding haul roads), winter cement production is limited to 1405 cubic yards per day. A production limit of 1405 cubic yards per day is equivalent to 24-hr operation at a production rate of 58.6 cubic yards per hour production. Concrete constituent proportions determined assuming one cubic yard of concrete consists of 1,865 lbs coarse aggregate (46%), 1,428 lbs sand (35%), 491 lbs cement (12%), 73 lbs cement supplement (2%), and 167 lbs water (4%) (AP 42, Table 11.12-2, footnote a, 6/06).

1. Aggregate Delivery to Ground Storage

Maximum Process Rate = 54.68 tons/hr (46% of total concrete)
Hours of Operation = 24 hours

PM Emissions:

Emission Factor = 0.0069 lbs/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hours) * (54.68 tons/hr) * (0.0069 lbs/ton) = 9.06 lbs

PM_{10} Emissions:

Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hours) * (54.68 tons/hr) * (0.0033 lb/ton) = 4.33 lbs

2. Sand Delivery to Ground Storage

Maximum Process Rate = 41.87 ton/hr (35% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (41.87 ton/hr) * (0.0021 lb/ton) = 2.11 lbs

PM_{10} Emissions:

Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (41.87 ton/hr) * (0.00099 lb/ton) = 0.99 lbs

3. Aggregate Transfer to Conveyor

Maximum Process Rate = 54.68 ton/hr (46% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (54.68 ton/hr) * (0.0069 lb/ton) = 9.06 lbs

PM_{10} Emissions:

Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (54.68 ton/hr) * (0.0033 lb/ton) = 4.33 lbs

4. Sand Transfer to Conveyor

Maximum Process Rate = 41.87 ton/hr (35% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (41.87 ton/hr) * (0.0021 lb/ton) = 2.11 lbs

PM_{10} Emissions:

Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (41.87 ton/hr) * (0.00099 lb/ton) = 0.99 lbs

5. Aggregate Transfer to Storage Bins

Maximum Process Rate = 54.68 ton/hr (46% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (54.68 ton/hr) * (0.0069 lb/ton) * (1-50/100) = 4.53 lbs

PM_{10} Emissions:

Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (54.68 ton/hr) * (0.0033 lb/ton) * (1-50/100) = 2.17 lbs

6. Sand Transfer to Storage Bins

Maximum Process Rate = 41.87 ton/hr (35% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (41.87 ton/hr) * (0.0021 lb/ton) * (1-50/100) = 1.06 lbs

PM_{10} Emissions:

Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (24 hr/yr) * (41.87 ton/hr) * (0.00099 lb/ton) * (1-50/100) = 0.50 lbs

7. Cement Delivery to Silo

Maximum Process Rate = 14.40 ton/hr (12% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.00099 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (14.40 ton/hr) * (0.00099 lb/ton) = 0.34 lbs

PM_{10} Emissions:

Emission Factor = 0.00034 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (14.40 ton/hr) * (0.00034 lb/ton) = 0.12 lbs

8. Cement Supplement Unloading to Silo

Maximum Process Rate = 2.14 ton/hr (2% of total concrete)
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0089 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (2.14 ton/hr) * (0.0089 lb/ton) = 0.46 lbs

PM_{10} Emissions:

Emission Factor = 0.0049 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (2.14 ton/hr) * (0.0049 lb/ton) = 0.25 lbs

9. Weigh Hopper Loading of Sand/Aggregate

Maximum Process Rate = 117.98 ton/hr
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0051 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (117.98 ton/hr) * (0.0051 lb/ton) = 14.44 lbs

PM_{10} Emissions:

Emission Factor = 0.0024 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (117.98 ton/hr) * (0.0024 lb/ton) = 6.80 lbs

10. Truck Mix Loading of Cement/Supplement/Sand/Aggregate

Maximum Process Rate = 117.98 ton/hr
Hours of Operation = 24 hr/yr

PM Emissions:

Emission Factor = 0.0568 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (117.98 ton/hr) * (0.0568 lb/ton) = 160.84 lbs

PM_{10} Emissions:

Emission Factor = 0.016 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (24 hr/yr) * (117.98 ton/hr) * (0.016 lb/ton) = 45.31 lbs

11. Diesel Engine Generator

Note: Emissions are based on the power output of the engine (307 hp / 229 kW), not the generator (275 hp / 205 kW).
Operational Capacity of Engine = 307 hp
Hours of Operation = 24 hours

PM Emissions:

PM Emissions = 16.21 lbs (Assume PM = PM_{10})

PM_{10} Emissions:

Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.0022 lbs/hp-hr) = 16.21 lbs

NOx Emissions:

Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.031 lbs/hp-hr) = 228.41 lbs

CO Emissions:

Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.00668 lbs/hp-hr) = 49.22 lbs

VOC Emissions:

Emission Factor = 0.00247 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.00247 lbs/hp-hr) = 18.20 lbs

SOx Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (24 hours) * (307 hp) * (0.00205 lbs/hp-hr) = 15.10 lbs

12. Haul Roads

Vehicle Miles Traveled (VMT) per Day = 5 VMT/day (Estimate)
VMT per hour = (5 VMT/day) * (day/24 hrs) = 0.21 VMT/hr
Hours of Operation = 24 hours

PM Emissions:

Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.
Emission Factor = $k * (s / 12)^a * (W / 3)^b$ = 12.46 lb/VMT

Where: k = constant = 4.9 lbs/VMT (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)
s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)
a = constant = 0.7 (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)
b = constant = 0.45 (Value for PM_{30}/TSP, AP 42, Table 13.2.2-2, 11/06)
Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (24 hours) * (0.21 VMT/hr) * (12.46 lb/VMT) * (1-50/100) = 31.15 lbs

PM_{10} Emissions:
Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.
Emission Factor = $k * (s / 12)^a * (W / 3)^b$ = 3.43 lb/VMT
Where: k = constant = 1.5 lbs/VMT (Value for PM_{10}, 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_{10}, AP 42, Table 13.2.2-2, 11/06)
b = constant = 0.45 (Value for PM_{10}, AP 42, Table 13.2.2-2, 11/06)
Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (24 hours) * (0.21 VMT/hr) * (3.43 lb/VMT) * (1-50/100) = 8.59 lbs

V. Existing Air Quality

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

Addendum #2 to Permit #4068-01 is for a portable concrete plant located at sites in or within 10 km of certain PM_{10} nonattainment areas during the winter season (October 1 through March 31). The more stringent operating conditions contained in the addendum will minimize any potential impact on the nonattainment areas and will protect the national ambient air quality standards. Also, this facility is a portable source that would operate on an intermittent and temporary basis and any effects on air quality will be minor and short-lived.

V. Air Quality Impacts

Permit #4068-01 and Addendum #2 will cover the operations of this portable concrete plant while operating at any location within Montana, excluding those counties that have a Department approved permitting program and those areas that are tribal lands.

Winter season operations many include only the locations listed in Section II.A of Addendum #2. Addendum #2 of Permit #4068-01 would also allow for summertime operations (April 1 – September 30) at any location in or within 10 km of the Butte, Columbia Falls, Libby, Kalispell, Thompson Falls, and Whitefish PM_{10} nonattainment areas.

VII. Taking or Damaging Implication Analysis

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

VIII. Environmental Assessment

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

Analysis prepared by: Brent Lignell
Date: November 20, 2008