

## **Statement of Basis**

**Permit to Construct No. P-2017.0004  
Project ID 61839**

**Unimin Corp.  
Emmett, Idaho**

**Facility ID 045-00003**

**Final**

**March 3, 2017  
Kelli Wetzel *KW*  
Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

<b>ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE .....</b>	<b>3</b>
<b>FACILITY INFORMATION .....</b>	<b>5</b>
Description .....	5
Permitting History .....	5
Application Scope .....	5
Application Chronology .....	5
<b>TECHNICAL ANALYSIS .....</b>	<b>6</b>
Ambient Air Quality Impact Analyses .....	6
<b>REGULATORY ANALYSIS.....</b>	<b>6</b>
Attainment Designation (40 CFR 81.313).....	6
Facility Classification.....	6
Permit to Construct (IDAPA 58.01.01.201).....	7
Tier II Operating Permit (IDAPA 58.01.01.401) .....	7
Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70).....	7
PSD Classification (40 CFR 52.21).....	7
NSPS Applicability (40 CFR 60) .....	8
NESHAP Applicability (40 CFR 61) .....	8
MACT Applicability (40 CFR 63) .....	8
Permit Conditions Review.....	8
<b>PUBLIC REVIEW .....</b>	<b>9</b>
Public Comment Opportunity.....	9
<b>APPENDIX A – FACILITY DRAFT COMMENTS.....</b>	<b>10</b>
<b>APPENDIX B – PROCESSING FEE.....</b>	<b>12</b>

## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal units
CAA	Clean Air Act
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalent emissions
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hr/yr	hours per consecutive 12 calendar month period
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
PC	permit condition
PM	particulate matter
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit

<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
yd <sup>3</sup>	cubic yards
µg/m <sup>3</sup>	micrograms per cubic meter

## **FACILITY INFORMATION**

### ***Description***

Unimin is an industrial sand processing plant in Emmett, Idaho. Unimin mines a feldspathic sand from the Zierold pit which is approximately seven miles away from the processing plant. Raw sand is stockpiled and then processed (wet screening and milling) into the Wet Plant. Damp, processed sand is stockpiled and then dried using a natural gas-fired fluidized bed dryer. Dry sand is screened and bagged or bulk loaded into trucks or railcars.

Facility processes include:

#### Wet Plant Feeding and Processing

A front-end loader transfers wet raw sand from stockpiles to a hopper, HO-01. Hopper HO-01 transfers the material to feeder, FE-01, which then transfers the material to belt conveyor BC-01. Water is then added to the process, and the sand is wet screened by two vibrating screens, VS-12 and VS-13. Wet milling occurs in rod mill RD-01.

#### Dryer Feeding Operation

A front-end loader transfers wet sand from stockpiles to a hopper, HO-02. Hopper HO-02 transfers the material to screw conveyor, SC-01, which then transfers the material to a belt conveyor BC-02. Sand is then transferred to bucket elevator BE-01, which is controlled by DC-01, and then to the dryer DR-01, which is controlled by DC-03.

#### Loadout Operations

A front-end loader transfers damp sand from stockpiles to hopper, HO-03, which transfers the material to belt conveyor BC-12. All loadout operations are controlled by either DC-02 or DC-04, except for loadout operation (which includes conveying to hopper HO-04, Bulk loading 11C, and belt conveying BC-11).

### ***Permitting History***

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

August 26, 1996	045-00003, Initial Tier II operating permit, Permit status (S)
June 3, 1997	PTC No. 045-00003, New screen VS-14 installation, Permit status (S)
May 5, 1999	045-00003, Revised Tier II operating permit to incorporate new emission factors, Permit status (S)
September 5, 2002	045-00003, Renewed Tier II operating Permit and PTC to incorporate PTC No. 045-00003, Permit status (A, but will become S upon issuance of this permit)

### ***Application Scope***

This permit is the initial facility-wide PTC for this facility. This permitting action converts the expired T2 permit to a stand-alone PTC.

### ***Application Chronology***

January 19, 2017	DEQ received an application and an application fee.
February 8, 2017	DEQ determined that the application was complete.
February 10, 2017	DEQ made available the draft permit and statement of basis for peer and regional office review.
February 15, 2017	DEQ made available the draft permit and statement of basis for applicant review.

February 22, 2017

DEQ received the permit processing fee.

March 6, 2017

DEQ issued the final permit and statement of basis.

## TECHNICAL ANALYSIS

Except for PM<sub>10</sub>, the emission calculations from sand handling have not changed since the revision of the Tier II operating permit on May 5, 1999. For emission estimate information for this facility, refer to the technical memorandum dated May 5, 1999. Based on the particle size information for the feed materials, it appears the wet floatation processing of the sand removes most of the fine particles, and thus the PM<sub>10</sub> emissions are very small.

This permitting action is not commencement of construction of a new stationary source or a physical or operational change resulting in an increase of emissions or the emission of a pollutant not previously emitted. Because neither of these events is occurring, NSR is not triggered.

This permitting action is the conversion of an existing expired T2 operating permit to a stand-alone PTC. Air pollutant emissions from this facility do not increase as a result of this action, therefore, a revised EI was not developed and a technical analysis was not conducted.

### ***Ambient Air Quality Impact Analyses***

This permitting action does not increase the impact to ambient air quality because there is no increase of any regulated air pollutant. Consequently, an ambient air quality impact analysis is not required for this permitting action.

## REGULATORY ANALYSIS

### ***Attainment Designation (40 CFR 81.313)***

The facility is located in Gem County, which is designated as attainment or unclassifiable for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

### ***Facility Classification***

The AIRS/AFS facility classification codes are as follows:

For THAPs (Total Hazardous Air Pollutants) Only:

- A = Use when any one HAP has actual or potential emissions  $\geq 10$  T/yr or if the aggregate of all HAPS (Total HAPs) has actual or potential emissions  $\geq 25$  T/yr.
- SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits  $\geq 8$  T/yr of a single HAP or  $\geq 20$  T/yr of THAP.
- SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to  $< 8$  T/yr of a single HAP and/or  $< 20$  T/yr of THAP.
- B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold
- UNK = Class is unknown

For All Other Pollutants:

- A = Actual or potential emissions of a pollutant are  $\geq 100$  T/yr.
- SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are  $\geq 80$  T/yr.

- SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.
- B = Actual and potential emissions are < 100 T/yr without permit restrictions.
- UNK = Class is unknown.

**Table 1 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION**

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	>100	38.3	100	SM
PM <sub>10</sub>	<100	38.3	100	B
PM <sub>2.5</sub>	<100	38.3	100	B
SO <sub>2</sub>	<100	22.3	100	B
NO <sub>x</sub>	<100	12.6	100	B
CO	<100	3.2	100	B
VOC	<100	0.1	100	B
HAP (single)	---	---	10	B
HAP (total)	---	---	25	B
Pb	---	---	100	B

**Permit to Construct (IDAPA 58.01.01.201)**

IDAPA 58.01.01.201 .....Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

**Tier II Operating Permit (IDAPA 58.01.01.401)**

IDAPA 58.01.01.401 .....Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

**Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)**

IDAPA 58.01.01.301 .....Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for or 10 tons per year for any one HAP or 25 tons per year for all HAP combined. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

**PSD Classification (40 CFR 52.21)**

40 CFR 52.21 .....Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

### ***NSPS Applicability (40 CFR 60)***

This permitting action does not alter the applicability status of existing affected sources at the facility. The facility is subject to the 40 CFR 60, Subpart OOO – Standards of Performance for Non-Metallic Mineral Processing Plants. DEQ has been delegated the Subpart.

### ***NESHAP Applicability (40 CFR 61)***

The facility is not subject to any NESHAP requirements in 40 CFR 61.

### ***MACT Applicability (40 CFR 63)***

The facility is not subject to any MACT standards in 40 CFR Part 63.

### ***Permit Conditions Review***

This section describes the permit conditions that have been added, revised, modified or deleted as a result of this permitting action. All permit conditions from the expired T2 permit have been incorporated into this PTC with the exception of the permit condition cited below.

Permit Condition 2.4 was added to update the PTC to current standard language for fugitive emissions.

Old Permit Condition 2.5 for excess emissions was deleted as it is General Provision 8.11 in the current PTC template.

Old Permit Condition 2.8 for performance testing was deleted as it is General Provisions 8.7-8.9 in the current PTC template.

Old Permit Condition 2.11 for recordkeeping was deleted as it is General Provision 8.10 in the current PTC template.

Permit Condition 3.2 was revised to a table format (Table 3.1) to describe the control device for DC-03.

Permit Condition 3.3 was revised to include the PM emission limit in the DC-03 section instead of Appendix A which has been removed from the permit.

Permit Condition 4.2 was revised to include a description of the dust collectors.

Permit Condition 4.3 was revised to include the PM emission limits in the DC-01, DC-02 and DC-04 section instead of Appendix A which has been removed from the permit.

Old Permit Conditions 4.10 and 4.11 were removed as the performance test and reporting requirement have been previously met in 2003.

Permit Condition 8.1 is the duty to comply general compliance provision which requires that the permittee comply with all of the permit terms and conditions pursuant to Idaho Code §39-101.

Permit Condition 8.2 is the maintenance and operation provision which requires that the permittee maintain and operate all treatment and control facilities at the facility in accordance with IDAPA 58.01.01.211.

Permit Condition 8.3 is the obligation to comply general compliance provision which specifies that no permit condition is intended to relieve or exempt the permittee from compliance with applicable state and federal requirements, in accordance with IDAPA 58.01.01.212.01.

Permit Condition 8.4 is the inspection and entry provision which requires that the permittee allow DEQ inspection and entry pursuant to Idaho Code §39-108.

Permit Condition 8.5 is the permit expiration construction and operation provision which specifies that the permit expires if construction has not begun within two years of permit issuance or if construction has been suspended for a year in accordance with IDAPA 58.01.01.211.02.

Permit Condition 8.6 is the notification of construction and operation provision which requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.03.

Permit Condition 8.7 is the performance testing notification of intent provision which requires that the permittee notify DEQ at least 15 days prior to any performance test to provide DEQ the option to have an observer present, in accordance with IDAPA 58.01.01.157.03.

Permit Condition 8.8 is the performance test protocol provision which requires that any performance testing be conducted in accordance with the procedures of IDAPA 58.01.01.157, and encourages the permittee to submit a protocol to DEQ for approval prior to testing.

Permit Condition 8.9 is the performance test report provision which requires that the permittee report any performance test results to DEQ within 60 days of completion, in accordance with IDAPA 58.01.01.157.04-05.

Permit Condition 8.10 is the monitoring and recordkeeping provision which requires that the permittee maintain sufficient records to ensure compliance with permit conditions, in accordance with IDAPA 58.01.01.211.

Permit Condition 8.11 is the excess emissions provision which requires that the permittee follow the procedures required for excess emissions events, in accordance with IDAPA 58.01.01.130-136.

Permit Condition 8.12 is the certification provision which requires that a responsible official certify all documents submitted to DEQ, in accordance with IDAPA 58.01.01.123.

Permit Condition 8.13 is the false statement provision which requires that no person make false statements, representations, or certifications, in accordance with IDAPA 58.01.01.125.

Permit Condition 8.14 is the tampering provision which requires that no person render inaccurate any required monitoring device or method, in accordance with IDAPA 58.01.01.126.

Permit Condition 8.15 is the transferability provision which specifies that this permit to construct is transferable, in accordance with the procedures of IDAPA 58.01.01.209.06.

Permit Condition 8.16 is the severability provision which specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

## **PUBLIC REVIEW**

### ***Public Comment Opportunity***

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04.

## **APPENDIX A – FACILITY DRAFT COMMENTS**

## **The following comments were received from the facility on February 23, 2017:**

**Facility Comment:** All references to “Rod Mill RM-01” should be changed to “Ball Mill BM-01” to ensure consistency with existing plant nomenclature.

**DEQ Response:** The requested change has been made.

**Facility Comment:** Table 1.1 Corrections:

Permit Section 3 - burner brand is Maxon, not North American

Permit Section 4 (DC-01) – add VS-15 as a source

Permit Section 4 (DC-04) – add BA-02B as a source

Permit Section 4 (DC-04) – remove LS-04 as a source, needs to be added to Section 7.1.

**DEQ Response:** The requested changes have been made.

**Facility Comment:** Remove Section 2.6. These conditions are burdensome to the plant due to staffing limitations. Emmett has minimal staff due to the nature of its operations. Additionally, the Performance Test requirements of Section 8.7 would make the test requirements of Section 2.6(b) impossible to achieve for any visible emission observation because there would be no way to comply with the Method 9 notification requirements. In lieu of this, plant proposes to submit a comprehensive fugitive dust management plan approved by IDEQ that can be incorporated by reference in the final permit document.

**DEQ Response:** The requested change has been made and the language from the previously issued Tier II has been restored.

**Facility Comment:** Add VS-15 and BA-02B as sources to Section 4.1.

**DEQ Response:** The requested change has been made.

**Facility Comment:** In Section 4.7, add minimum water flow rate language as in Section 3.6 (i.e. If the water flow is less than stated lower limit for each scrubber, the air flow will be measured to see if there is 5 gpm/1,000 acfm), as shown below.

### 3.6 Scrubbing Media Flow Rate

Water flow rate to the dust collector shall be maintained as follows: greater than or equal to 110 gpm or a water to gas ratio of 5 gpm/1000 acfm. If the water flow is less than 110 gpm, the air flow will be measured to see if there is 5 gpm/1000 acfm.

[IDAPA 58.01.01.405.01, 5/1/94]

**DEQ Response:** The requested changes/clarifications have been made.

**Facility Comment:** Please include the language in the previous permit regarding the findings of our Malvern PM10 analysis, as shown below from the previous permit language.

### DISCUSSION

#### 1. Emissions Estimates

Except for PM<sub>10</sub>, the emission calculations from sand handling have not changed since the revision of the Tier II operating permit on May 5, 1999. For emission estimate information for this facility, refer to the technical memorandum dated May 5, 1999, from Thomas Lundahl, DEQ Air Quality Engineer. Emission estimates for burning No. 2 oil in the dryer, along with the resulting ambient concentrations, are presented below. Based on the particle size information for the feed materials, it appears the wet flotation processing of the sand removes most of the fine particles, and thus the PM<sub>10</sub> emissions are very small.

**DEQ Response:** The language will be inserted into the Statement of Basis under the Technical Analysis section to preserve the history of the PM<sub>10</sub> calculations for the facility.

## **APPENDIX B – PROCESSING FEE**

## PTC Processing Fee Calculation Worksheet

**Instructions:**

Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

**Company:** Unimin Corporation  
**Address:** 4601 Cascade Road  
**City:** Emmett  
**State:** ID  
**Zip Code:** 83612  
**Facility Contact:** Kerry Kelley  
**Title:** Plant Manager  
**AIRS No.:** 045-00003

**N** Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

**N** Did this permit require engineering analysis? Y/N

**N** Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

<b>Emissions Inventory</b>			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO <sub>x</sub>	0.0	0	0.0
SO <sub>2</sub>	0.0	0	0.0
CO	0.0	0	0.0
PM10	0.0	0	0.0
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
<b>Total:</b>	0.0	0	<b>0.0</b>
Fee Due	<b>\$ 250.00</b>		

Comments:

Tier II to PTC conversion