

Statement of Basis

Concrete Batch Operations General Permit

Sunroc dba Clements Concrete 00548

Boise, Idaho

Facility ID No. 777-00548

Permit to Construct P-2015.0005

Project No. 61471

June 4, 2015
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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.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations for non-carcinogens
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BMP	best management practices
Btu	British thermal units
Btu/lb	British thermal units per pound
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CBP	concrete batch plant
CFR	Code of Federal Regulations
CI	compression ignition
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalent
cy/day	cubic yard per day
cy/hr	cubic yard per hour
cy/yr	cubic yard per year
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EF	Emission Factor
EI	Emission Inventory
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
g/kW-hr	gram per kilowatt hour
gr	grain (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per year
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
kW	kilowatts
lb/cy	pound per cubic yard
lb/10 ³ gal	pound per thousand gallons
lb/gal	pound per gallon
lb/hr	pounds per hour
lb/MMBtu	pound per million British thermal unit
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMscf/hr	million standard cubic feet per hour
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NAICS	North American Industry Classification System
NSCR	Non-Selective Reduction Catalyst

NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PAH	polyaromatic hydrocarbons
PC	permit condition
PERF	Portable Equipment Relocation Form
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SCL	significant contribution limits
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/yr	tons per consecutive 12-calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
TCEQ	Texas Commission on Environmental Quality
UTM	Universal Transverse Mercator
VOC	volatile organic compounds
µg/m ³	micrograms per cubic meter

FACILITY INFORMATION

Description

Sunroc dba Clements Concrete is a portable central mix concrete batch plant that may consist of the following: aggregate stockpiles, a cement storage silo, a cement supplement (flyash) storage silo, a weigh batcher, conveyors and an electric power supply. The facility combines aggregate, flyash and cement, and transfers the mixture into a central drum along with a measured amount of water for stationary mixing of the concrete. Electrical power will be supplied to the facility by the local power grid. Also, water heater(s) may be used to heat the water in cold weather prior to use for the mixing of concrete.

Permitting History

The following information was derived from a review of the information supplied by the permittee and from permit files available to DEQ. All previous Permits to Construct (PTC) listed below are superseded (S) upon issuance of this general permit.

No other permitting activity for facility no. 777-00548.

Application Scope

This permit is the initial PTC for a portable Concrete Batch Plant.

Application Chronology

January 7, 2015	A PTC application and combined application and processing fee (\$1,500) were received.
February 2, 2015	A 15-day opportunity for a public comment period was held. A request for a public comment period was received.
February 7, 2015	P-2015.00005 project 61471 application was deemed complete.
March 3, 2015	Supplemental information was received from the applicant by phone via Sam Bernard.
April 6, 2015	30-day public comment period commenced.
May 6, 2015	30-day public comment period ended.
June 4, 2015	Final permit and statement of basis were issued.

TECHNICAL ANALYSIS

Emissions Units and Control Devices

Table 1 CONCRETE BATCH PLANT AND CONTROL DEVICE INFORMATION^a

Emissions Unit Description	Control Device Description	Emissions Discharge Point ID No. and/or Description
<p><u>Concrete Batch Plant –Central Mix</u> Manufacturer: Erie Stryer Model: MG – 11C Manufacture Date: 2009 Maximum capacity: 250,000 cy /year Maximum production: 2,500 cy/day</p>	<p><u>Cement Storage Silo Baghouse No. 1^c:</u> Manufacturer: R&S RAB - 1700 Model: RAB - 1700 72 bags 0.66' x 11.42' baghouse</p> <p><u>Cement Supplement Storage Silo Flyash Baghouse No. 2^a:</u> Manufacturer: R&S RAB - 1700 Model: RAB - 1700 70 bags 0.66' x 11.42' baghouse</p> <p><u>Weigh Batchers Baghouse:</u> Manufacturer: R&S RAB - 1700 Model: RAB - 1700 72 bags 0.66' x 11.42' baghouse Remove if no baghouse</p> <p><u>Load-out Baghouse</u> Manufacturer: R&S RAB - 1700 Model: RAB - 1700 72 bags 0.66' x 11.42' baghouse</p> <p><u>Material Transfer Point Water Sprays or Equivalent</u> Best Management Practices Sprays and other suppressants</p>	<p><u>Baghouse No. 1 stack</u> Stack height: 24.58 feet Exit diameter: 1.5' X 1.5 feet Exit air flow rate: 8200 acfm Exit Temperature: Ambient Control efficiency: 99%</p> <p><u>Baghouse No. 2 stack</u> Same as above</p> <p><u>Weigh Batchers Baghouse:</u> Same as above</p> <p><u>Baghouse</u> Control efficiency: 99% Same as above</p> <p><u>Materials Transfer:</u> Control Efficiency: 75%</p>
<p><u>9.9 MMBtu/hr LPG water heater (or equivalent^b)</u> Maximum Rating: 9.9 MMBtu/hr Maximum Fuel Usage: 283,033 gal/yr</p>	<p>None</p>	<p>Stack height: 28.5 feet Exit Velocity: 1980 acfm</p>

- a. Note that this table is for informational purposes only and the actual operation at the facility may deviate slightly.
- b. "or equivalent" is defined as equipment which has an equivalent or less brake horsepower than listed in this table, which does not result in an increase in emissions, and which does not result in the emission of a toxic air pollutant not previously emitted.
- c. Both the storage silo baghouse and supplement storage silo flyash baghouse are considered process equipment and therefore there is no associated control efficiency. Controlled PM₁₀ emission factors were used when determining PTE and for modeling purposes.

Emissions Inventories

The emissions inventory for this portable concrete batch plant was developed by DEQ and is based on AP-42 Section 11.12 emission factors for central-mix concrete batch plants and the following assumptions: 366 cy per hour concrete production capacity and concrete production limits of 2,500 cy per day and 250,000 cy per year. Baghouse/cartridge filter capture efficiencies were presumed to be 99.0% in DEQ's generic emissions estimation.

The emissions analysis developed by DEQ, at most, assumes one central-mix or truck-mix concrete batch plant, a 9.9 MMBtu/hr propane water heater and line power. The total emissions associated with the facility are equal to or less than the equipment mentioned above. All possible equipment may not be included in the facility specific emissions inventory. Only equipment identified within the application material will be included in the inventory. Liquid petroleum gas emissions from AP-42 Section 1.5 (9/98) were used to calculate emissions from the water heater.

Fugitive emissions of particulate matter (PM), PM_{2.5} and PM₁₀ from batch plant material transfer points were assumed to be controlled by manual water sprays, sprinklers, or spray bars, or an equivalent method (e.g., enclosing the entire process inside a building) that reduce the emissions by an estimated 75%. The assumed 75% control efficiency is based on the Western Regional Air Partnership Fugitive Dust Handbook. According to the Handbook, water suppressant of material handling can range from 50-90% control. Assuming the average of 70% and including another 5% due to Best Management Practices required by the permit allow for 75% control to be a conservative estimate.

Aggregate is washed before delivery to the batch plant site, and water is used on-site to control the temperature of the aggregate. Particulate matter and PM₁₀ emissions from the weigh batcher transfer point are controlled by a baghouse/cartridge, and central mix load-out emissions are controlled by a baghouse. Capture efficiency of the central mix load-out baghouse is 99%.

Controlled emissions of particulate toxic air pollutants (TAPs) were estimated based on the presence of a baghouse on the cement/cement supplement silos, a baghouses/cartridge on the weigh batcher, and 99% control for central load-out emissions. Hexavalent chromium content was estimated at 20% of total chromium for cement, and 30% of total chromium for the cement supplement/fly ash. The hexavalent chromium percentages were taken from a University of North Dakota study, by the Energy and Environmental Research Center, Center for Air Toxic Metals. Detailed emissions calculations can be found in Appendix A of this document.

Emissions Inventory for 9.9 MMBtu/hr Water Heater(s)

Sunroc dba Clements Concrete has a 9.9 MMBtu/hr LPG water heater. The water heater will be used on a limited basis and thus have a fuel usage limit. The usage is based on calculations associated with the rated capacity of the unit, the heating value and the annual hours of operation. Natural Gas emissions are derived from AP-42, Section 1.4 (07/98) where the heating value was assumed to be 1,020 MMBtu/MMscf. Similarly, LPG and diesel heating values were obtained from AP-42 Section 1.5 (10/96) and Section 1.3 (09/98), respectively. Heating values were assumed to be 91.5 MMBtu/10³ gal and 140 MMBtu/10³ gal. Note that the water heater does not have any control devices associated with it. Detailed emissions calculations can be found in Appendix A of this document.

Emissions Inventory for Transfer Points

Determining emissions from a concrete batch plant also includes transfer emissions from the number of drop points throughout the process. The PM₁₀ emissions from Central-Mix loading operations are defined by an equation which includes the wind speed at each drop point and the moisture content of cement and cement supplement and a number of exponents and constants defined by AP-42 Equation 11.12-1 (6/06). An average value of wind speed and moisture content are 7 mph and 6%, respectively¹. The following equation of particulate emissions is specific to PM₁₀. The resulting emissions were used to determine a factor to help evaluate wind speed variations in AERMOD modeling.

$$E = k(0.0032) * \left[\frac{U^a}{M^b} \right] + c$$

Where:

k = particle size multiplier

a = exponent

b = exponent

c = constant

U = mean wind speed

M = moisture content

The second transfer emissions calculations were used to determine conveyor emissions. For both coarse and fine aggregate to a conveyor. It was assumed that 82% or 164 cy/hr of the concrete produced was aggregate. This percentage was based on 1,865 lb coarse aggregate, 1,428 lb sand, 564 lb cement/supplement and 167 lb water for a total of 4,024 lb concrete as defined by AP-42 Table 11.12-5 (06/06). The fine and coarse aggregate contributions were separated into 36% and 46% of the total concrete production². Employing emission factors from AP-42 Table 11.12-5 (6/06) for conveyor transfer and assuming 75% control efficiency as stated earlier for conveyor transfer PM₁₀ emissions were calculated for each transfer point. For both fine and coarse aggregate the facility has 12 transfer points.

Table 2 FACILITY WIDE CRITERIA POLLUTANT EMISSION ESTIMATES

Emissions Unit	PM _{2.5} T/yr	PM ₁₀ T/yr	SO ₂ T/yr	NO _x T/yr	CO T/yr	VOC T/yr	Lead T/yr	CO _{2e} T/yr
Concrete Batch Plant	0.013	0.08	--	--	--	--	3.47E-05	--
LPG Water Heater	0.379	0.38	0.701	7.109	3.981	0.131	--	4551
Transfer Points	0.587	1.9	--	--	--	--	--	--
Total	0.98	2.36	0.70	7.11	3.98	0.13	0.0000347	4551.00

A summary of the estimated controlled emissions of toxic air pollutants (TAP) is provided in the Emissions Inventory within Appendix A. The emission estimates are total summation values of each unit used at the facility which are outlined in the previous table.

¹ 7 mph was the average wind speed obtained from an average of 19 Idaho airports throughout the state from 1996-2006. This data is from the Western Regional Climate Center (<http://www.wrcc.dri.edu/htmlfiles/westwind.final.html#IDAHO>). 4.17 % and 1.77% were the average percentages for sand and aggregate respectively. These values are based on EPA tests conducted at Cheney Enterprises. The percentages used in AP-42 are typical for most concrete batching operations.

² The percentages of coarse and fine aggregate are based on the AP-42 concrete composition. One cubic yard of concrete as defined by AP-42 is 4024 total pounds. Similarly, coarse aggregate is 1865 pounds or 46% of the total and sand (fine) aggregate is 1428 pounds or 36%.

Ambient Air Quality Impact Analyses

A circular grid with 5.0 meter receptor spacing, extending out to 100 meters was used in the non-site-specific modeling performed by DEQ. To establish a setback distance, the following procedure was followed for various production levels and operational configurations:

1. Trigger values for the modeling analyses were determined (see Appendix C for details). These are values, when combined with background concentrations, indicated an exceedance of a standard. They were calculated by subtracting the background value from the standard (because the model does not specifically include background in the results). The following are trigger values:

Table 3 AMBIENT AIR IMPACT ANALYSIS TRIGGER VALUES

Pollutants	Averaging Period	Trigger Value ($\mu\text{g}/\text{m}^3$)
PM ₁₀	24-hr	77
	Annual	24
SO ₂	3-hr	1266
	24-hr	339
	Annual	72
CO	1-hr	36400
	8-hr	7700
NO ₂	Annual	83

2. For each operational configuration scenario, pollutant, averaging period, and meteorological data set, all receptors with concentrations equal or greater than the trigger value were plotted. This effectively gave a plot of receptors where the standard could be exceeded for that pollutant and averaging period.
3. The controlling receptor for each pollutant, averaging period, and meteorological data set was identified. First, the receptor having a concentration in excess of the trigger value that was the furthest from any emissions source was identified. The controlling receptor was the next furthest downwind receptor from that point.
4. The minimum setback distance was then calculated. This was the furthest distance between an emissions point and the controlling receptor.

The applicant has demonstrated compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard so long as the setback distance and other permit conditions are complied with. The applicant has also demonstrated compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

Because a separate modeling analysis was not provided to demonstrate compliance with applicable standards in PM_{2.5} and PM₁₀ nonattainment areas, this portable facility is not permitted for operation in nonattainment areas.

Permit to Construct (IDAPA 58.01.01.201)

The proposed project does not meet the permit to construct exemption criteria in IDAPA 58.01.01.220–223.

A concrete batch plant with associated internal combustion engine and water heater are not categorically exempt and therefore do not meet the criteria of IDAPA 58.01.01.221 or 222. As a result, a permit to construct is required in accordance with IDAPA 58.01.01.201. 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)

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 are not applicable to this permitting action.

Registration Procedures & Requirements for Portable Equipment (IDAPA 58.01.01.500)

Portable equipment needs to be registered within 90 days after permit issuance and DEQ must be notified at least 10 days prior to relocation. This requirement is assured by Permit Condition 2.11.

Visible Emissions (IDAPA 58.01.01.625)

The sources of PM₁₀ emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.5 and 2.6.

Rules For Control of Fugitive Dust (IDAPA 650-651)

All sources of fugitive dust emissions at the facility are subject to the State of Idaho rules for controlling fugitive dust. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne. This requirement is assured by Permit Condition 2.2.

Standards for New Sources (IDAPA 58.01.01.676)

The fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. This requirement is assured by Permit Conditions 3.3 and 3.5.

Rules For Control of Odors (IDAPA 58.01.01.775-776)

No person shall allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids into the atmosphere in such quantities as to cause air pollution. This requirement is assured by Permit Conditions 2.7 and 2.8.

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

The facility is not classified as a major facility as defined in IDAPA 58.01.01.008.10. The facility is a synthetic minor facility, because without limits on the potential to emit, the emissions of regulated air pollutants the facility would exceed major source thresholds. Therefore, the requirements of IDAPA 58.01.01.300–399 are not applicable to this permitting action.

PSD Classification (40 CFR 52.21 and IDAPA 205)

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)

The facility is not subject to the requirements of 40 CFR 60 Subpart III – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, and 40 CFR 60 Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines because there are no engines on site.

NESHAP Applicability (40 CFR 61)

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

MACT Applicability (40 CFR 63)

This Concrete Batch plant does not emit or have the potential to emit more than 10 tons or more per year of any HAP, or 25 tons or more per year of any combination of HAPs. Major source Maximum Achievable Control Technology (MACT) requirements therefore do not apply to this facility.

CAM Applicability (40 CFR 64)

The facility is not classified as a major source (refer to Title V Classification section). Because the facility does not require a Title V permit, the requirements of CAM are not applicable.

Permit Conditions Review

This section describes the permit conditions for this initial permit.

Scope

Purpose

Permit Condition 1.1

States that the purpose is to permit a concrete batch plant

Permit Condition 1.2

The table in this condition outlines those regulated sources within the permit.

Facility-wide Conditions

Fuel Specifications

Permit Condition 2.1

This condition identifies the allowable fuels that may be combusted in the water heater(s). The restriction of sulfur content is to maintain consistency between the water heater(s) and engine as there is a restriction of sulfur content in accordance with 40 CFR 60.4207 and 40 CFR 80.510(b). To minimize setback distances the sulfur content may not exceed 15 ppm standard for use of this general CBP permit. Fuels that are allowed include: natural gas, diesel or LPG.

Fugitive Dust Control

Permit Condition 2.2

This condition requires that the permittee perform visible emissions checks on see/no see basis to verify that fugitive emissions are not extending beyond the property boundary. If visible emissions are seen, corrective action must be taken. Reasonable control requirements for fugitive dust are needed at any potential site. Permit conditions requires that the plant must take corrective action where practical to control fugitive dust when operating. This requires compliance with IDAPA 58.01.01.650-651.

Permit Condition 2.3

More fugitive dust control is required by implementing Best Management Practices. Visible emissions are determined by a see/no see basis at the facility boundary. If visible emissions are present, the permittee must take appropriate action to correct the problem or perform a Method 9 test. The methods provided in this condition are options that the permittee may use to control any dust problems.

Fugitive Dust Control Monitoring & Recordkeeping

Permit Condition 2.4

Requires the permittee to conduct inspections each day that the plant is operating to assess the control of fugitive emissions and specifies corrective actions to take if fugitive dust is not reasonably controlled.

Opacity

Permit Condition 2.5

The condition is in accordance with the opacity limit of 20% as stated by IDAPA 58.01.01.625.

Visible Emissions Monitoring & Recordkeeping

Permit Condition 2.6

Visible emissions and/or opacity monitoring is required on a monthly basis. This includes a see/no see evaluation of baghouse stacks. If there are any visible emissions, corrective actions must be taken within 24 hours. If the problem persists, a Method 9 opacity test must be performed in accordance to IDAPA 58.01.01.130-136. Records of all inspections need to be maintained as well.

Odors

Permit Condition 2.7

The permittee must operate in accordance with IDAPA 58.01.01.776.01 to minimize odors associated with the facility.

Permit Condition 2.8

Maintaining records of odor complaints, and corrective action taken demonstrates compliance with this condition.

Nonattainment Areas

Permit Condition 2.9

The concrete batch plant cannot relocate and operate in any nonattainment area. Operations within a nonattainment area were not included in the modeling compliance analysis. Therefore, it is not permitted with this general CBP permit. See the associated modeling memo.

Co-location

Permit Condition 2.10

The concrete batch plant may only co-locate with one (1) rock crushing facility. Co-location is defined as being within 1,000 ft of the nearest emission unit. This includes the concrete batch plant, silos and the center of any stockpile.

Reporting Requirements

Permit Condition 2.11

When relocating to another site, the permittee must submit a Portable Equipment Relocation Form (PERF) within 10 days of desired moving date in accordance with IDAPA 58.01.01.500. A scaled plot must also be included with the PERF form.

Incorporation by Reference

Permit Condition 2.12

If there is any discrepancy between this permit and the NSPS or NESHAP standard this condition states that the federal standards shall govern.

Concrete Batch Plant

Description

Permit Condition 3.1

The process description is provided to outline the activity at the facility.

Permit Condition 3.2

The table in this condition outlines the associated emission control devices for each regulated unit.

Emissions Limits

Permit Condition 3.3

The emissions limits for a LPG water heater are listed in IDAPA 58.01.01.676. Specifically, the permittee shall not discharge PM to the atmosphere from any fuel-burning equipment source in excess of 0.050 gr/dscf of effluent gas corrected to 3% oxygen by volume for liquid or 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume for gaseous fuels.

Operating Requirements

Permit Condition 3.4

Limits the finished concrete production and required setback for any future site. A setback distance from the property boundary was used in the ambient air quality impact analysis to demonstrate compliance with NAAQS and TAP increments. Because the equipment is portable and the location may be changed from its initial location, compliance with a minimum setback distance limit is required. The setback distances are based on a number of criteria which include the use of an engine, control devices such as baghouses, boot enclosures, water ring and other suppressants.

One of the biggest drivers when establishing the setback distances was truck loadout. It is accepted by the DEQ that a boot enclosure alone provides 95% control. This acceptance is based on several previously issued permits that demonstrated through manufacturer information. To increase the flexibility of the general permit and allow for small setback distances the permittee has the option to increase the loadout control to 99%. The permittee can increase the control efficiency to 99% in one of two ways; either 1) route all loadout emissions to a baghouse or 2) equip the boot enclosure with a water-fog-ring spray system. A BACT analysis done by the Texas Commission of Environmental Quality (TCEQ) in 2006 suggested that the appropriate control efficiency for the water ring was 85%. Multiply (1-95%) and (1-85%) returns a value of .0075. $1 - .0075 = .9925$ or 99.25%. Therefore adding the water fog ring to the boot enclosure obtains 99% control efficiency for truck loadout.

The fugitive dust control ranges from 75% to 95%. The additional 20% is obtained by mandating the enclosing of aggregate/sand piles with three-sided barriers and covering piles or adding additional suppressants.

Setback distances of both line power and engine use are included in the condition. This allows for the facility to move from one site that requires an engine for power to another site in which line power is available without requiring a permit revision.

Permit Condition 3.5

General restrictions were applied to the water heater(s) when in use. The associated water heater(s) requires an annual fuel usage limit to demonstrate compliance with the NAAQS standards. The limit in this condition is based on a 9.9 MMBtu/hr maximum water heater and running 2,200 hr/yr. That hourly rate is multiplied by 2,200 hr/yr to obtain 283,033 gallons fuel per year. AP-42 Section 1.5 (9/98) assumes $91.5 \text{ MMBtu}/10^3 \text{ gal}$ which equates to $1.08 \times 10^{-1} / 10^3 \text{ gal/hr}$ for a 9.9 MMBtu/hr LPG water heater. That hourly rate is multiplied by 2,200 hr/yr to obtain 283,033 gal fuel per year.

Permit Condition 3.6

A baghouse filter/cartridge system must be installed on any storage silo and all control equipment must be operated with a developed procedures document. This is required to control particulate emissions and demonstrate compliance with NAAQS standards.

Permit Condition 3.7

A water spray bar or equivalent must be installed and all control equipment must be operated with a developed procedures document. This is required to control particulate emissions and demonstrate compliance with NAAQS standards.

Permit Condition 3.8

Within 60 days of start up, the permittee needs to develop a procedures document outlining operations and maintenance schedules. This procedure must be submitted to the appropriate regional DEQ office for review. This is to demonstrate that all required control equipment is being operated and maintained properly. Also any change whether it is done by the facility or requested by DEQ must be submitted to DEQ within 15 days of the change.

Monitoring & Recordkeeping Requirements

Permit Condition 3.9

Concrete production monitoring is required daily, monthly and annually. This is necessary to demonstrate compliance with the production limits.

Permit Condition 3.10

Setback monitoring is required to demonstrate compliance with the setback distance requirements. This must be done each time the CBP relocates or anytime the layout has changed.

Permit Condition 3.11

Each month the water heater's fuel usage needs to be recorded and summed for the previous consecutive 12 months to demonstrate compliance with the annual fuel limit.

Permit Condition 3.12

Daily records of the hours of operation of the facility must be kept to demonstrate compliance with the hours of operation permit condition.

General Provisions

General Compliance

Permit Condition 4.1

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

Permit Condition 4.2

The maintenance and operation general compliance provision 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 4.3

The obligation to comply general compliance provision 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.

Inspection & Entry

Permit Condition 4.4 - 4.8

The inspection and entry provision requires that the permittee allow DEQ inspection and entry pursuant to Idaho Code §39-108.

Construction & Operation Notification

Permit Condition 4.9

The construction and operation notification provision requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.02.

Permit Condition 4.10 – 4.14

The construction and operation notification provision requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.03.

Performance Testing

Permit Condition 4.15

The performance testing notification of intent provision 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 4.16

The performance test protocol provision 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 4.17

The performance test report provision requires that the permittee report any performance test results to DEQ within 30 days of completion, in accordance with IDAPA 58.01.01.157.04-05.

Monitoring & Recordkeeping

Permit Condition 4.18

The monitoring and recordkeeping provision requires that the permittee maintain sufficient records to assess compliance with permit conditions, in accordance with IDAPA 58.01.01.211.

Excess Emissions

Permit Condition 4.19

The excess emissions provision requires that the permittee follow the procedures required for excess emissions events, in accordance with IDAPA 58.01.01.130.

Certification

Permit Condition 4.20

The certification provision requires that a responsible official certify all documents submitted to DEQ, in accordance with IDAPA 58.01.01.123.

False Statements

Permit Condition 4.21

The false statement provision requires that no person make false statements, representations, or certifications, in accordance with IDAPA 58.01.01.125.

Tampering

Permit Condition 4.22

The tampering provision requires that no person render inaccurate any required monitoring device or method, in accordance with IDAPA 58.01.01.126.

Transferability

Permit Condition 4.23

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

Severability

Permit Condition 4.24

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c. During this time, there was a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

Public Comment Period

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c. During this time, comments were submitted in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

A response to public comments document has been crafted by DEQ based on comments submitted during the public comment period. That document is part of the final permit package for this permitting action.

APPENDIX A – EMISSIONS INVENTORIES

Listed Below are the emissions estimates for the units selected.

Company:	Sunroc dba Clements Concrete 00548
Facility ID:	777-00548
Permit No.:	P-2015.0005 Proj 61471
Source Type:	Portable Concrete Batch Plant
Manufacturer/Model:	Erie Stryer / MG - 11C

Production

Maximum Hourly Production Rate:	366	cy/hr
Proposed Daily Production Rate:	2500	cy/day
Proposed Maximum Annual Production Rate:	250000	cy/year

Tons/year

Emissions Units	PM _{2.5}	PM ₁₀	SO ₂	NO _x	CO	VOC	Lead	THAPs	CO ₂ e
CBP Type: Central Mix	0.013	0.08	NA	NA	NA	NA	3.47E-05		NA
Water Heater #1: 9.9 MMBtu/hr Propane Heater	0.379	0.379	7.01E-01	7.109	3.981	0.521	0.00E+00		4551
Water Heater #2: No water heater	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00		0
Small Diesel Engine(s) *: No Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA		0
Large Diesel Engine *: No Large Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA		0
Transfer/Drop Points	0.587	1.88	NA	NA	NA	NA	NA		NA
Totals	0.98	2.35	7.01E-01	7.11	3.98	0.52	3.47E-05	7.70E-05	4551

Pounds/hour

	PM _{2.5}	PM ₁₀	SO ₂	NO _x	CO	VOC	Lead	THAPs
CBP Type: Central Mix	0.003	0.02	NA	NA	NA	NA	8.32E-06	
Water Heater #1: 9.9 MMBtu/hr Propane Heater	0.087	0.087	1.60E-01	1.623	0.909	0.119	0.00E+00	
Water Heater #2: No water heater	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00	
Small Diesel Engine(s) *: No Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA	
Large Diesel Engine*: No Large Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA	
Transfer/Drop Points	0.489	1.57	NA	NA	NA	NA	NA	
Totals	0.58	1.68	1.60E-01	1.62	0.91	0.12	8.32E-06	1.61E-04

* The Large engine may run :

There is no large engine. hr/yr

APPENDIX B – PERMIT FEES

All associated permitting fees were paid when the application was submitted. The total cost of the Concrete Batch General Permit is \$1,500. That includes a \$1,000 application fee and \$500 processing fee.

Per Section 224 of the Rules, all PTC applications are subject to an application fee of \$1000.

Per Section 225 of the Rules, General PTC permits are subject to a processing fee of \$500. The definition of General permit per the Rules: “no facility-specific requirements (defined as a source category specific permit for which the Department has developed standard emission limitations, operating requirements, monitoring and recordkeeping requirements, and that require minimal engineering analysis. General permit facilities may include portable concrete batch plants, portable hot-mix asphalt plants and portable rock crushing plants.)”

APPENDIX C – AMBIENT AIR QUALITY ANALYSIS

No modeling was required since Sunroc dba Clements Concrete 00548 requested a general concrete batch plant permit and the review for this plants operation did fit the qualifications of the general concrete batch plant matrix of operations.

RESPONSE TO PUBLIC COMMENTS



Air Quality Permitting Response to Public Comments

May 20, 2015

Permit To Construct No. P-2015.0005 PROJ 61471

**Sunroc dba Clements Concrete 00548
Boise, Idaho**

Facility ID No. 777-00548

Prepared by:
Robert Baldwin, Permit Writer
AIR QUALITY DIVISION

Final

BACKGROUND

Idaho Department of Environmental Quality (DEQ) provided for public comment on the proposed facility emissions, in accordance with IDAPA 58.01.01.209. During this period, a comment was submitted in response to DEQ's proposed action. The comment and DEQ's response is provided in the following section.

PUBLIC COMMENTS AND RESPONSES

Public comments regarding the technical and regulatory analyses and the air quality aspects of the proposed permit are summarized below. Questions, comments, and/or suggestions received during the comment period that did not relate to the air quality aspects of the permit application, DEQ's technical analysis, or the proposed permit were not addressed. The only comment received was from the Idaho Conservation League.

Comment 1:

Clements Concrete proposes to construct and operate a "portable" concrete batch plant located at 10988 Joplin Road, Boise, Idaho and consisting of aggregate stockpiles, storage silos, conveyors, truck loading and unloading facilities as well as the actual cement mixing equipment, all powered by the electrical utility system. ICL notes the Statement of Basis shows emissions of Particulates, Sulfur Dioxides, Nitrogen Oxides, Carbon Dioxide, Volatile Organic Compounds, Lead, and Toxic and Hazardous Pollutants. We are concerned these pollutants will further degrade the Treasure Valley air quality, especially the particulate emissions caused by the specific activities at this concrete mixing facility.

The Idaho Department of Environmental Quality (DEQ) Statement of Basis for the proposed permit states, "the facility is a synthetic minor facility because without limits on the potential to emit, the emissions of the regulated air pollutants the facility would exceed major source thresholds." According to the Idaho law, when "specific emission standards, or requirements on operation or maintenance are necessary to ensure compliance with any applicable standard or rule" then DEQ may require a Tier II Operating Permit. IDAPA 58.01.01.401.03. The Idaho DEQ should require Clements Concrete to obtain a Tier II operating permit in order to operate this potentially major, but synthetically minor, source or particulate matter in the Treasure Valley air shed.

The Idaho DEQ should require Clements Concrete to obtain a Tier II operating permit in order to ensure the permit conditions of fugitive dust control are clear, enforceable, and sufficient to maintain the facilities synthetic minor source status. We are concerned that all of the controls strategies for fugitive dust rely on self-assessment and correction by the facility. Requiring a Tier II permits contemplated by Idaho law will allow DEQ to better ensure the Clements facility will not contribute to deteriorating air quality and ensure DEQ can determine how the facility effects the attainment of ambient air quality standards.

Response:

Sunroc dba Clements Concrete's application was for a general concrete batch plant Permit to Construct for the initial construction of the facility in Idaho. The requirements to obtain a PTC are defined in IDAPA 58.01.01.201;

"201.PERMIT TO CONSTRUCT REQUIRED.

No owner or operator may commence construction or modification of any stationary source, facility, major facility, or major modification without first obtaining a permit to construct from the Department which satisfies the requirements of Sections 200 through 228 unless the source is exempted in any of Sections 220 through 223, or the owner or operator complies with Section 213 and obtains the required permit to construct, or the owner or operator complies with Sections 175 through 181, or the source operates in accordance with all of the applicable provisions of a permit by rule".

The PTC contains state and federally enforceable permit conditions to limit the potential to emit to below major source thresholds so the facility can be defined as a synthetic minor facility. A Tier II permit is not legally required when a facility-wide PTC limits the source to a synthetic minor status. Additionally, the PTC includes, operating terms and conditions similar to a Tier II operating permit, including limits to protect applicable ambient air quality standards.

Once the PTC is issued, it requires the facility to maintain records of fugitive dust control practices to ensure compliance. DEQ will also inspect this facility to ensure that all permit conditions are followed and that the facilities fugitive emissions are reasonably controlled.