

## **Statement of Basis**

### **Concrete Batch Operations General Permit**

**Southwest Concrete Paving Co. 00547  
Mountain Home, Idaho  
Facility ID No. 777-00547**

**Permit to Construct P-2014.0043  
Project No. 61448**

**January 14, 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 <sub>2</sub> 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 <sup>3</sup> 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 <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
PAH	polyaromatic hydrocarbons
PC	permit condition
PERF	Portable Equipment Relocation Form
PM	particulate matter
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
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 <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	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 <sup>3</sup>	micrograms per cubic meter

## **FACILITY INFORMATION**

### ***Description***

Southwest Concrete Paving Co. 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 either by an electric generator powered by a Caterpillar 1207 bhp rated engine. Also, water heater(s) may be used to heat the water 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.

There are no prior permits issued to this facility.

### ***Application Scope***

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

### ***Application Chronology***

November 24, 2014	A PTC application and combined application and processing fee (\$1,500) were received.
December 10 to 26, 2014	A 15-day opportunity for a public comment period was held. No requests for a public comment period were received.
January 5, 2015	P-2014.0043 project 61448 application was deemed complete.
January 9, 2015	Draft permit was sent to facility for review.
January 14, 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<sup>a</sup>

Emissions Unit Description	Control Device Description	Emissions Discharge Point ID No. and/or Description
<p><u>Concrete Batch Plant –Central Mix</u>                      Manufacturer: RexCon                      Model: Style S                      Maximum capacity: 350 cy/hr                      Maximum production: 2500 cy/day and 60,000 cy/year</p>	<p><u>Cement Storage Silo Baghouse No. 1<sup>c</sup>:</u>                      Manufacturer: C &amp; W                      Model: RA-200                      108 bags 9.5' x 0.66' baghouse</p> <p><u>Cement Supplement Storage Silo Flyash Baghouse No. 2<sup>a</sup>:</u>                      Manufacturer: C &amp; W                      Model: RA-200                      108 bags 9.5' x 0.66' baghouse</p> <p><u>Weigh Batcher Baghouse:</u>                      Manufacturer: C &amp; W                      Model: RA-200                      108 bags 9.5' x 0.66' baghouse</p> <p><u>Load-out Baghouse</u>                      Manufacturer: C &amp; W                      Model: RA-200                      108 bags 9.5' x 0.66' 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: 28 feet                      Exit diameter: 1.5 X 2feet                      Exit air flow rate: 4.66 acfm                      Exit Temperature: Ambient                      Control efficiency: 99%</p> <p><u>Load-out Baghouse</u>                      Same Baghouse as above                      Control efficiency: 99%</p> <p><u>Materials Transfer:</u>                      Control Efficiency: 75%</p>
<p><u>4.2 MMBtu/hr LPG or diesel water heater (or equivalent<sup>b</sup>)</u>                      Maximum Rating: 4.2 MMBtu/hr                      Maximum Fuel Usage: 100,984 gal/yr propane                      Maximum Fuel Usage: 66,000 gal/yr diesel</p>	None	<p>Stack height: 15 feet                      Exit Velocity: 6815 acfm</p>
<p><u>1207 bhp rated engine (or equivalent<sup>b</sup>)</u>                      Maximum Rating: 1207 hp                      Construction Date: 10/01/2013                      EPA Certification: Enter Tier # 4</p>	none	<p>Stack height: 15 feet                      Exit Velocity: 4870acfm</p>
<p><u>192 bhp rated engine (or equivalent<sup>b</sup>)</u>                      Maximum Rating: 192 hp                      Construction Date: 1/01/1999                      EPA Certification: Enter Tier # 1</p>	none	<p>Stack height: 7feet                      Exit Velocity: 1355acfm</p>

- Note that this table is for informational purposes only and the actual operation at the facility may deviate slightly.
- "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.
- Both the storage silo baghouse and supplement storage silo flyash baghouse are considered process equipment and therefore there is no associated control efficiency. Controlled PM<sub>10</sub> 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 and truck-mix concrete batch plants and the following assumptions: 350 cy per hour concrete production capacity and concrete production limits of 2,500 cy per day and 60,000 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 4.2 MMBtu/hr propane or diesel water heater and a combined 1399 bhp diesel-fired internal combustion engines are used. 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. AP-42 Sections 3.3 and 3.4 (10/96) were used to determine both criteria and TAPs emissions from the diesel-fired engine(s). AP-42 Sections 1.3, 1.4 and 1.5 (9/98) were used to calculate emissions from the water heaters.

Fugitive emissions of particulate matter (PM), PM<sub>2.5</sub> and PM<sub>10</sub> 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 PM<sub>10</sub> emissions from the weigh batcher transfer point are controlled by a baghouse/cartridge, and central mix load-out emissions are controlled by a boot. Capture efficiency of the truck mix load-out baghouse or equivalent was estimated at 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 truck 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 4.2 MMBtu/hr Water Heater(s)**

Southwest Concrete Paving Co has a 4.2 MMBtu/hr LPG fired or Diesel-fired water heater. The water heater will be used on a 24 hour per day basis. The usage is based on calculations associated with the rated capacity of the unit, the heating value and the annual hours of operation. LPG heating values were obtained from AP-42 Section 1.3 (09/98), respectively. Heating value was assumed to be 91.5 MMBtu/10<sup>3</sup> gal or 140 MMBtu/10<sup>3</sup> for propane and diesel respectively. 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 1,340 bhp, Tier II Certified Engine(s)

Emissions are based on using diesel fuel in a Tier 4, 1207 bhp and Tier 1, 192 bhp engines. The maximum fuel use rate was calculated in gal/hr and was based on the total 1399 bhp capacity of the engines. The following equation was used to determine the fuel use rate from the fuel heating value and average brake-specific fuel consumption (BSFC). Note that the fuel heating value applied is based on AP-42 Sections 3.3 and 3.4 values of 19,300 Btu/lb and a density of 7.1 lb/gal. The maximum fuel use rate was converted into MMBtu/hr and multiplied by a given emission factor in lb/MMBtu to obtain an emission rate in lb/hr.

$$\max \text{ fuel} = \frac{(\text{rating} * \text{BSFC})}{(\text{fuel heating value})} = \frac{(1399 \text{ bhp} * 7,000 \text{ Btu} / \text{hp} - \text{hr})}{(137,030 \text{ Btu} / \text{gal})} = 71.47 \text{ gal} / \text{hr}$$

The facility may use any engine of choice, but if the corresponding emissions exceed those of a Tier II, 1,340 bhp the operating hours are reduced. Emission factors are derived from one of three sources: 1) If the engine is uncertified, AP-42 factors from Sections 3.3 and 3.4 (10/96) were applied; 2) If the engine is certified as Tier 1-3 or Blue Sky engine, 40 CFR 89 factors were applied; 3) For the more recent Tier 4 engines, 40 CFR 1039 factors were applied.

### 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 PM<sub>10</sub> 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 11.12-2 (6/06). An average value of wind speed and moisture content are 7 mph and 6%, respectively<sup>1</sup>. The following equation of particulate emissions is specific to PM<sub>10</sub>. 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 production<sup>2</sup>. 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 PM<sub>10</sub> emissions were calculated for each transfer point. For both fine and coarse aggregate the facility has 6 transfer points.

<sup>1</sup> 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.

<sup>2</sup> 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%.

**Table 2 FACILITY WIDE CRITERIA POLLUTANT EMISSION ESTIMATES**

Emissions Unit	PM <sub>2.5</sub> T/yr	PM <sub>10</sub> T/yr	SO <sub>2</sub> T/yr	NO <sub>x</sub> T/yr	CO T/yr	VOC T/yr	Lead T/yr	CO <sub>2e</sub> T/yr
Concrete Batch Plant	0.003	0.02	--	--	--	--	3.3E-5	--
LPG Water Heater	0.04	0.04	7.5E-2	0.76	0.424	0.056	--	485
Diesel Water Heater	0.059	0.109	0.007	0.66	0.165	0.018	--	896
Small Diesel Fired Engine(s)	0.12	0.12	1.42E-3	2.03	2.52	0.29	--	155
Large Diesel Fired Engine	0.14	0.14	8.96E-3	0.93	4.85	0.56	--	980
Transfer Points	0.07	0.23	--	--	--	--	--	--
<b>Total</b>	<b>0.43</b>	<b>0.66</b>	<b>0.02</b>	<b>4.38</b>	<b>7.96</b>	<b>0.92</b>	<b>3.3E-5</b>	<b>2516.00</b>

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.

### **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 (µg/m <sup>3</sup> )
PM <sub>10</sub>	24-hr	77
	Annual	24
SO <sub>2</sub>	3-hr	1266
	24-hr	339
	Annual	72
CO	1-hr	36400
	8-hr	7700
NO <sub>2</sub>	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<sub>2.5</sub> and PM<sub>10</sub> 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 15.

### ***Visible Emissions (IDAPA 58.01.01.625)***

The sources of PM<sub>10</sub> emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 9 and 10.

### ***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 6.

### ***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 and 4.

### ***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 11 and 12.

**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 subject to the requirements of 40 CFR 60 Subpart IIII – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, and 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

40 CFR 60, Subpart IIII .....Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

**§ 60.4200 Am I subject to this Subpart?**

*(a) The provisions of this Subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this Subpart, the date that construction commences is the date the engine is ordered by the owner or operator.*

*(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:*

*(i) Manufactured after April 1, 2006 and are not fire pump engines, or*

*(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.*

*(3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.*

*(b) The provisions of this Subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.*

*(c) If you are an owner or operator of an area source subject to this Subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this Subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this Subpart applicable to area sources.*

*(d) Stationary CI ICE may be eligible for exemption from the requirements of this Subpart as described in 40 CFR part 1068, Subpart C (or the exemptions described in 40 CFR part 89, Subpart J and 40 CFR part 94, Subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.*

The 1207 bhp IC engine was constructed, modified or reconstructed on October 1, 2013, which is after July 11, 2005. Therefore the engine is subject to the Subpart.

As the general permit was being developed there were discussions about the differences between 40 CFR 60, Subpart IIII and Non-road Diesel Engine requirements, 40 CFR 1068.30. According to CFR 1068.30, Non-road engine means that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

Also, according to 40 CFR 1068.30 (2)(iii), an internal combustion engine is not a non-road engine if it:

- Will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source.
- A location is any single site at a building, structure, facility, or installation.
- Any engine (or engines) that replace an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

The conclusions were that the requirements for non-road engines and Subpart IIII were very similar with a few exceptions. Those exceptions being the installation of a non-resettable hour meter, the maintenance schedule and the use of colored fuel. But possibly, the biggest issue was the timeframe that stipulated whether or not a unit was stationary or non-road. If an engine stays in one place longer than 12 months it is considered a stationary source and would be subject to Subpart IIII. In order to avoid any potential non-compliance issues and to eliminate the possibility of failure by a non-road engine to comply with 40 CFR 1068.30, it was concluded to require Subpart IIII for all engines regardless of time at a given location. To eliminate permitting complexity, all applicants that choose the general permit have been required to comply with Subpart IIII.

*§ 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?*

The Permittee is not the manufacturer of the IC engine and therefore this requirement is not applicable.

*§ 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?*

The Permittee is not the manufacturer of the IC engine and the engine is not used for emergency purposes. Therefore, this requirement is not applicable.

*§ 60.4203 How long must my engines meet the emission standards if I am a stationary CI internal combustion engine manufacturer?*

The Permittee is not the manufacturer of the IC engine and therefore this requirement is not applicable.

*§ 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?*

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this Subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in §60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

The Subpart requires that the Permittee comply with Table 1 of IIII if the engine is pre-2007 and has a displacement of less than 10 liters/cylinder. However, this permit requires that the Permittee comply with 40 CFR 89.112 or 40 CFR 139 where applicable. All of those standards are equal to or more stringent than Table 1 of this Subpart. Also, if the engine or engines are non-certified, per the Subpart they have to demonstrate compliance with Table 1 and the hours of operations are reduced. If the engines have a model year of 2007 or greater they too must meet and certify that their IC engine meets all non-road engine standards: 40 CFR 89.112, 40 CFR 89.113, 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable. These emission standard requirements are accounted for in the PTC.

*§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?*

The Permittee is not using the IC engine for emergency purposes. Therefore, this requirement is not applicable.

*§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?*

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

The Permittee must operate the IC engine for the life of the unit in accordance with manufacturer-approved methods. This is included in the PTC.

*§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this Subpart?*

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this Subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this Subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for non-road diesel fuel.

The Permittee has stated that they will operate the applicable IC engine in accordance with 40 CFR 80.510(b). The fuel sulfur content cannot exceed 15 ppm or 0.0015% by weight. All emissions calculations assume that percentage throughout the PTC.

*§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model year?*

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (f) of this section after the dates specified in paragraphs (a) through (f) of this section.

The Permittee is installing a 2013 model engine that meets the applicable requirements for that model year.

*§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?*

The Permittee is not installing an emergency IC engine. Thus, a non-resettable meter is not required and the engine does not have a diesel particulate filter. These requirements are not applicable to the unit, but the unit must comply with 60.4211.

*§ 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?*

The Permittee is not the manufacturer of the IC engine and therefore this requirement is not applicable.

*§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?*

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this Subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

The Permittee is subject to 60.4204(a)/60.4204(b), therefore the engine must be installed and configured according to the manufacturer's specifications. This requirement is included in the PTC.

*§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?*

A Performance test on the IC engine is not required and therefore this requirement is not applicable to the Permittee and the 1207 bhp IC engine.

*§ 60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?*

A Performance test on the IC engine is not required and the engine is less than 30 liters per cylinder. Therefore this requirement is not applicable to the Permittee and the 1207 bhp IC engine.

*§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?*

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

The applicable IC engine does not meet the criteria set forth in the Subpart requiring notification unless it is uncertified, greater than 175 bhp and was reconstructed or modified on or after July 11, 2005. All engines are less than 3,000 HP and have a displacement less than 10 liters per cylinder.

All engines that are uncertified and constructed reconstructed or modified prior to July 11, 2005 are subject to 40 CFR 63, Subpart ZZZZ. Therefore section (a) of the requirement is not applicable. However, section (c) does apply only if the engine is equipped with a diesel particulate filter.

*§ 60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?*

The applicable IC engine is not being operated in Guam, American Somoa or the Northern Mariana Islands. Therefore this requirement is not applicable.

*§ 60.4216 What requirements must I meet for engines used in Alaska?*

The applicable IC engine is not being operated in Alaska. Therefore this requirement is not applicable.

*§ 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?*

The applicable IC engine is not using any special fuels. Therefore this requirement is not applicable.

### ***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.**

States that the purpose is to permit a concrete batch plant

#### **Permit Condition 2.**

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

#### **Facility-wide Conditions**

#### ***Fuel Specifications***

#### **Permit Condition 3.**

This condition identifies the allowable fuels that may be combusted in the water heater(s). Fuel that is allowed include: LPG only.

#### **Permit Condition 4.**

This condition identifies the allowable fuels that may be combusted in the engine(s). The restriction of sulfur content is to maintain consistency between the water heater (if water heater used diesel) and engine as there is a restriction of sulfur content in accordance with 40 CFR 60.4207 and 40 CFR 80.510(b). Also, the inclusion of the minimum cetane index and maximum aromatic content is in accordance with 40 CFR 80.510(b).

### ***Fuel Monitoring and Recordkeeping***

#### **Permit Condition 5.**

The permittee needs to maintain documentation each time fuel is received to demonstrate compliance with the sulfur content limitation.

### ***Fugitive Dust Control***

#### **Permit Condition 6.**

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 7.**

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 8.**

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 9.**

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 10.**

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 11.**

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

#### **Permit Condition 12.**

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

### ***Nonattainment Areas***

#### **Permit Condition 13.**

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 14.**

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 15.**

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.

### ***Subpart A General Provisions***

#### **Permit Condition 16.**

This set of general provisions applies because the engine(s) associated with the CBP is an affected source in accordance with 40 CFR 60, Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

### ***Incorporation by Reference***

#### **Permit Condition 17.**

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

### **Concrete Batch Plant**

#### ***Description***

#### **Permit Condition 18.**

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

#### **Permit Condition 19.**

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

### ***Emissions Limits***

#### **Permit Condition 20.**

The emissions limits for a LPG or Diesel fired water heater are listed in IDAPA 58.01.01.677 or 676 respectively. 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.

### ***Operating Requirements***

#### **Permit Condition 21.**

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 22.

This condition limits the total amount of hours the facility may operate in any given day. There also may be restrictions to daylight hours. This restriction may be included to help limit the setback distance related to 1-hr NO<sub>2</sub> NAAQS. During daylight hours dispersion may be better and fewer emissions may remain in close proximity to the facility.

#### Permit Condition 23.

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 4.2 MMBtu/hr maximum water heater and running 24 hr/yr. AP-42 Section 1.5 (9/98) assumes 91.5 MMBtu/10<sup>3</sup> gal or 140 MMBtus/10<sup>3</sup> which equates to  $4.59e^{-02}/10^3$  gal/hr for a 4.2 MMBtu/hr LPG water heater or  $3.0e^{-02}/10^3$  gal/hr for diesel. That hourly rate is multiplied by 2200 hr/yr to obtain 100,984 gal propane or 66,000 gal diesel fuel per year.

#### Permit Condition 24.

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 25.

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 26.

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.

To achieve 99% control efficiency for truck loadout emissions the permittee must route the emissions to a baghouse. This option was added to reduce the setback distances available within the general permit.

### ***Monitoring & Recordkeeping Requirements***

#### Permit Condition 27.

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

#### Permit Condition 28.

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 29.

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 30.

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

**Compression Ignition Internal Combustion Engines**

*Process Description*

Permit Condition 31.

This condition provides a brief synopsis of the engine(s) used by the facility.

*Operating Requirements*

Permit Condition 32.

This condition states that the facility must install and operate an IC engine that is tier certified and that documentation stating such is maintained onsite.

Permit Condition 33.

This condition states that the facility must install and operate an IC engine that is tier certified and that documentation stating such is maintained onsite.

Permit Condition 34.

This condition is included to limit the engine(s) use to those hours requested by the permittee. The engine limitation was added to help reduce the setback distance. Note that the modeling associated with this condition assumes that if there are multiple engines onsite that they are operating simultaneously. But this is a permittee-defined condition so the stringency associated with the condition is dependent on what operating requirements are needed by the facility.

*Monitoring & Recordkeeping*

Permit Condition 35.

Each month the permittee must record the operational time of the engine. The annual usage needs to be summed over a consecutive 12 month period to demonstrate compliance with the annual hourly limit.

**NSPS 40 CFR 60, Subpart III Requirements**

Permit Condition 36.

The permittee needs to operate and maintain the diesel engine according to manufacturer procedures. This is required in accordance with 40 CFR 60, Subpart III specifically sections 60.4206 and 60.4211(a).

Permit Condition 37.

If the engine is equipped with a particulate filter, it must be installed with a backpressure monitor in accordance with 40 CFR 60, Subpart III, specifically section 60.4209.

Permit Condition 38.

Records of any corrective action must be maintained when the backpressure monitor notifies the operator that a high backpressure limit has been approached. This condition is in accordance with 40 CFR 60.4214(c).

## **General Provisions**

### ***General Compliance***

#### **Permit Condition 39.**

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 40.**

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 41.**

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 42.**

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 43.**

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 44.**

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 45.**

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 46.**

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 47.**

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 48.**

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 49.

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 50.

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 51.

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 52.

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 53.

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 54.

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 were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

# APPENDIX A – EMISSIONS INVENTORY

## Final Concrete Batch Plant Emissions Inventory

Listed Below are the emissions estimates for the units selected.

<b>Company:</b>	Southwest Concrete Paving Co.
<b>Facility ID:</b>	777-00547
<b>Permit No.:</b>	P-2014.0043 Proj 61448
<b>Source Type:</b>	Portable Concrete Batch Plant
<b>Manufacturer/Model:</b>	RexCon / Style S

<b>Production</b>				
Maximum Hourly Production Rate:		350	cy/hr	
Proposed Daily Production Rate:		2500	cy/day	
Proposed Maximum Annual Production Rate:		60000	cy/year	

Emissions Units	Tons/year										
	PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Lead	THAPs	CO <sub>2</sub> e		
<b>CBP Type:</b>											
Water Heater #1:	0.003	0.02	NA	NA	NA	NA	3.32E-05		NA		
Water Heater #2:	0.059	0.109	7.13E-03	0.660	0.165	0.018	4.16E-05		896		
Small Diesel Engine(s) *:	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00		0		
Large Diesel Engine **:	0.12	0.12	1.43E-03	2.03	2.52	0.29	NA		155		
Transfer/Drop Points	0.14	0.14	8.96E-03	0.93	4.85	0.56	NA		980		
<b>Totals</b>	<b>0.39</b>	<b>0.61</b>	<b>1.75E-02</b>	<b>3.62</b>	<b>7.53</b>	<b>0.87</b>	<b>7.48E-05</b>	<b>6.05E-02</b>	<b>2031</b>		

Emissions Units	Pounds/hour										
	PM <sub>2.5</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Lead	THAPs			
<b>CBP Type:</b>											
Water Heater #1:	0.001	0.00	NA	NA	NA	NA	7.96E-06				
Water Heater #2:	0.054	0.099	6.48E-03	0.600	0.150	0.017	3.78E-05				
Small Diesel Engine(s) *:	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00				
Large Diesel Engine **:	0.17	0.17	2.04E-03	2.90	3.60	0.41	NA				
Transfer/Drop Points	0.20	0.20	1.28E-02	1.33	6.93	0.80	NA				
<b>Totals</b>	<b>0.67</b>	<b>1.26</b>	<b>2.13E-02</b>	<b>4.83</b>	<b>10.68</b>	<b>1.23</b>	<b>4.58E-05</b>	<b>7.82E-02</b>			

\* The Large engine may run : 1400 hr/yr

\*\* The Small engine(s) may run : 1400 hr/yr

HAPS & TAPS Emissions Inventory

Metals	HAP	TAP	lb/hr	T/yr	Averaging Period	EL lb/hr	Exceeded?
Arsenic	X	X	4.48E-06	2.21E-06	Annual	1.50E-06	Yes
Barium		X	0.00E+00	0.00E+00	24-hour	3.30E-02	No
Beryllium	X	X	3.19E-06	8.97E-07	Annual	2.80E-05	No
Cadmium	X	X	3.17E-06	8.21E-07	Annual	3.70E-06	No
Cobalt	X	X	0.00E+00	0.00E+00	24-hour	3.30E-03	No
Copper		X	1.26E-05	1.39E-05	24-hour	1.30E-02	No
Chromium	X	X	3.87E-05	8.60E-06	24-hour	3.30E-02	No
Manganese	X	X	4.01E-05	2.02E-05	24-hour	3.33E-01	No
Mercury	X	X	6.30E-06	6.93E-06	24-hour	3.00E-03	No
Molybdenum	X	X	0.00E+00	0.00E+00	24-hour	2.70E-05	No
Nickel	X	X	3.87E-06	3.88E-06	Annual	2.70E-05	No
Phosphorus	X	X	9.65E-05	5.59E-06	24-hour	7.00E-03	No
Selenium	X	X	3.18E-05	3.47E-05	24-hour	1.30E-02	No
Vanadium	X	X	0.00E+00	0.00E+00	24-hour	3.00E-03	No
Zinc	X	X	8.40E-06	9.24E-06	24-hour	6.67E-01	No
Chromium VI	X	X	1.07E-07	4.69E-07	Annual	5.60E-07	No
<b>Non PAH Organic Compounds</b>							
Pentane		X	0.00E+00	0.00E+00	24-hour	118	No
Methyl Ethyl Ketone		X	0.00E+00	0.00E+00	24-hour	39.3	No
<b>Non-PAH HAPS</b>							
Acetaldehyde	X	X	1.20E-03	5.26E-03	Annual	3.00E-03	No
Acrolein	X	X	4.53E-04	6.34E-04	24-hour	1.70E-02	No
Benzene	X	X	1.46E-03	6.40E-03	Annual	8.00E-04	Yes
1,3 - Butadiene	X	X	6.12E-05	2.68E-04	Annual	2.40E-05	Yes
Ethyl Benzene	X	X	9.54E-07	1.05E-06	24-hour	29	No
Formaldehyde	X	X	2.10E-03	8.15E-03	Annual	5.10E-04	Yes
Hexane	X	X	2.70E-02	2.97E-02	24-hour	12	No
Isocane	X	X	0.00E+00	0.00E+00	NA	NA	NA
Methyl Chloroform	X	X	0.00E+00	0.00E+00	24-hour	127	No
Propionaldehyde	X	X	0.00E+00	0.00E+00	24-hour	2.87E-02	No
Quinone	X	X	0.00E+00	0.00E+00	24-hour	2.70E-02	No
Toluene	X	X	3.68E-04	2.91E-03	24-hour	25	No
o-Xylene	X	X	1.92E-04	1.95E-03	24-hour	7.00E-03	No
<b>PAH HAPS</b>							
2-Methylnaphthalene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
3-Methylchloranthrene	X	X	0.00E+00	0.00E+00	Annual	2.50E-06	No
7,12-Dimethylbenz(a)anthracene	X	X	0.00E+00	0.00E+00	NA	NA	NA
Acenaphthene	X	X	2.38E-06	9.77E-06	Annual	9.10E-05	No
Acenaphthylene	X	X	7.92E-06	3.47E-05	Annual	9.10E-05	No
Anthracene	X	X	2.94E-06	1.28E-05	Annual	9.10E-05	No
Benzo(a)anthracene	X	X	2.66E-06	1.15E-05	Annual	9.10E-05	No
Benzo(a)pyrene	X	X	2.94E-07	1.29E-06	Annual	2.00E-06	No
Benzo(b)fluoranthene	X	X	1.66E-07	6.82E-07	Annual	2.00E-06	No
Benzo(e)pyrene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No
Benzo(g,h,i)perylene	X	X	7.82E-07	3.36E-06	Annual	9.10E-05	No
Benzo(k)fluoranthene	X	X	2.43E-07	1.06E-06	Annual	2.00E-06	No
Chrysene	X	X	5.70E-07	2.42E-06	Annual	2.00E-06	No
Dibenzo(a,h)anthracene	X	X	9.25E-07	4.00E-06	Annual	2.00E-06	No
Dichlorobenzene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Fluoranthene	X	X	1.19E-05	5.22E-05	Annual	9.10E-05	No
Fluorene	X	X	4.57E-05	2.00E-04	Annual	9.10E-05	No
Indeno(1,2,3-cd)pyrene	X	X	6.03E-07	2.57E-06	Annual	2.00E-06	No
Naphthalene	X	X	4.49E-02	4.00E-03	24-hour	3.33	No
Naphthalene	X	X	1.41E-04	5.83E-04	Annual	9.10E-05	Yes
Perylene	X	X	6.31E-06	2.77E-05	NA	NA	NA
Phenanthrene	X	X	4.08E-05	1.78E-04	Annual	9.10E-05	No
Pyrene	X	X	6.49E-06	2.83E-05	Annual	9.10E-05	No
Polycyclic Organic Matter (POM)	X	X	5.46E-06	2.36E-05	Annual	2.00E-06	Yes

## 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.)”

The fees of \$1,500 were paid when the facility submitted the permit application.

## APPENDIX C – AMBIENT AIR QUALITY ANALYSIS

Emissions Inventory indicates the thresholds for modeling were not exceeded.