

**Statement of Basis  
Concrete Batch Plant General Permit**

**Permit to Construct No. P-2021.0029  
Project ID 62653**

**Incredible Concrete - 00629  
Franklin, Idaho**

**Facility ID 777-00629**

**Final**

**January 11, 2022  
Chris Duerschner  
Permit Writer**

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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

CBP	concrete batch plant
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EL	screening emission levels
HAP	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTC	permit to construct
PTE	potential to emit
PW	process weight rate
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
yd <sup>3</sup>	cubic yards

## **FACILITY INFORMATION**

### ***Description***

Incredible Concrete - 00629 has proposed a cement, sand, and aggregate storage and dispensing facility that operates in support of a mobile concrete mixing truck. Cement is brought to the facility via truck and loaded pneumatically into a storage silo. Sand and aggregate are brought to the facility via truck and stockpiled onsite. Cement is dispensed into the mixing truck via a screw conveyor with the drop point controlled by a shroud. Sand and aggregate are loaded into the mixing truck using a front-end loader. Emissions from the cement hopper are controlled using a filter system.

The Applicant has proposed concrete production rate throughput limits of 30 cubic yards per hour, 100 cubic yards per day, and 5,000 cubic yards per year.

The Applicant has proposed that line power will be used exclusively at the facility. Therefore, no IC engines powering electrical generators were included in the application.

### ***Permitting History***

This is the initial PTC for an existing facility thus there is no permitting history.

### ***Application Scope***

This is the initial PTC for an existing facility.

### ***Application Chronology***

June 22, 2021	DEQ received an application and an application and processing fee.
June 30 – July 15, 2021	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action. A formal request for a public comment period was requested by the public.
July 26, 2021	DEQ determined that the application was incomplete.
August 25, 2021	DEQ received supplemental information from the applicant.
August 31, 2021	DEQ sent a notice of violation to the facility, which included notification that a PTC was required (Enforcement Case No. E-2021.0003).
September 23, 2021	DEQ determined that the application was complete.
November 24, 2021	DEQ provided a public comment period on the proposed action.
January 11, 2022	DEQ issued the final permit and statement of basis.

# TECHNICAL ANALYSIS

## Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment	Emission Point ID No.
Materials Handling	<u>Material Transfer Points:</u> Materials handling Truck unloading of aggregate Aggregate handling	Maintaining the moisture content in 1/4" or smaller aggregate material at 1.5% by weight, using water sprays, using shrouds, or other emissions controls	N/A
Concrete Batch Plant	Concrete Batch Plant	<u>Cement Storage Silo Bin Vent Filter<sup>(a)</sup>:</u> Manufacturer: Norse Filter Technology PM <sub>10</sub> /PM <sub>2.5</sub> control efficiency: 99.0%  <u>Material Transfer Points:</u> Control: Water sprays PM <sub>10</sub> /PM <sub>2.5</sub> control efficiency: 75.0%  <u>Truck Loadout</u> Control: Shroud PM <sub>10</sub> /PM <sub>2.5</sub> control efficiency: 75.0%	<u>Cement Storage Silo Bin Vent Filter Exhaust:</u> Exit height: 10 ft (3.048 m) Exit diameter: 8 in (0.2032 m)

- a) The storage silo filter is 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***

### **Potential to Emit**

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the concrete batch plant operations at the facility associated with this proposed project using the DEQ developed CBP EI spreadsheet (see Appendix A). Emissions estimates of criteria pollutant PTE were based on the following assumptions:

- Maximum concrete throughput does not exceed 30 yd<sup>3</sup>/hour, 100 yd<sup>3</sup>/day, and 5,000 yd<sup>3</sup>/year (per the Applicant).
- Filter control efficiencies were assumed to be 99.0%.
- Fugitive emissions of particulate matter (PM), PM<sub>10</sub>, and PM<sub>2.5</sub> from the concrete batch plant material transfer points were assumed to be controlled by manual water sprays, sprinklers, or spray bars, or an equivalent method that reduce PM 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 concrete 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 truck mix load-out emissions are controlled by a shroud. Capture efficiency of the truck mix load-out shroud was estimated at 75%.
- Controlled emissions of particulate toxic air pollutants (TAPs) were estimated based on the presence of a filter controlling emissions from the cement/cement supplement silos and 75% 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.

A few notable modifications were made to the DEQ developed CBP EI spreadsheet to account for the unusual layout of this facility. These include:

- In the CBP Criteria tab the emission factors for aggregate transfer to elevated storage, sand transfer to elevated storage, and weigh hopper loading were set equal to zero since these activities do not occur at the facility.
- Uncontrolled emissions of PM<sub>10</sub>, PM<sub>2.5</sub>, and HAPs were determined by simply discounting the 75% control efficiency afforded to the shroud controlling loadout operations.

### **Uncontrolled Potential to Emit**

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a “Synthetic Minor” source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for regulated air pollutants from all emissions units at the facility as determined by DEQ staff using the DEQ Concrete Batch Plant EI spreadsheet. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit.

**Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

Source	PM <sub>10</sub>	PM <sub>2.5</sub>
	T/yr	T/yr
<b>Point Sources</b>		
Concrete Batch Plant <sup>(a)</sup>	0.198	0.118
<b>Total, Point Sources</b>	<b>0.20</b>	<b>0.12</b>

a) PM<sub>10</sub>/PM<sub>2.5</sub> emissions from the concrete batch plant are considered “fugitive emissions” and therefore are not included in the Potential to Emit.

The following table presents the uncontrolled Potential to Emit for HAP pollutants from all emissions units at the facility as determined by DEQ staff using the DEQ Concrete Batch Plant EI spreadsheet. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit.

**Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS**

IDAPA Listing	Hazardous Air Pollutants	PTE (T/yr)
585	Chromium metal (II and III)	8.17E-06
	Manganese as Mn (fume)	4.32E-05
	Phosphorous	2.74E-05
	Selenium	1.85E-06
586	Arsenic	1.50E-06
	Beryllium and compounds	1.81E-07
	Cadmium and compounds	1.68E-07
	Chromium (VI)	1.75E-06
	Nickel	8.62E-06
<b>Total</b>		<b>9.28E-05</b>

**Pre-Project Potential to Emit**

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

This is an existing facility. However, since this is the first time the facility is receiving a permit, pre-project emissions are set to zero for all criteria pollutants.

**Post Project Potential to Emit**

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility’s classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria pollutants from all emissions units at the facility as determined by DEQ staff using the DEQ Concrete Batch Plant EI spreadsheet. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

Source	PM <sub>10</sub>		PM <sub>2.5</sub>	
	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>	lb/hr <sup>(a)</sup>	T/yr <sup>(b)</sup>
Concrete Batch Plant	0.0831	0.0499	0.0496	0.0298
<b>Post-Project Totals</b>	0.0831	0.0499	0.0496	0.0298

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.  
 b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

**Change in Potential to Emit**

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

**Table 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS**

Source	PM <sub>10</sub>		PM <sub>2.5</sub>	
	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	0.00	0.00	0.00	0.00
Post Project Potential to Emit	0.0831	0.0499	0.0496	0.0298
<b>Changes in Potential to Emit</b>	0.0831	0.0499	0.0496	0.0298

**Non-Carcinogenic TAP Emissions**

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

**Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS**

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Chromium metal (II and III)	0.0	4.63E-06	4.63E-06	<b>0.033</b>	No
Manganese as Mn (fume)	0.0	1.84E-05	1.84E-05	<b>0.067</b>	No
Phosphorous	0.0	1.49E-05	1.49E-05	<b>0.007</b>	No
Selenium	0.0	7.81E-07	7.81E-07	<b>0.013</b>	No

None of the PTEs for non-carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

**Carcinogenic TAP Emissions**

Pre- and post-project, as well as the change in, carcinogenic TAP emissions are presented in the following table:



**Table 7 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS**

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Arsenic	0.0	5.12E-07	5.12E-07	1.5E-06	No
Beryllium and compounds	0.0	1.18E-08	1.18E-08	2.8E-05	No
Cadmium and compounds	0.0	3.42E-08	3.42E-08	3.7E-06	No
Chromium (VI)	0.0	1.06E-07	1.06E-07	5.6E-07	No
Nickel	0.0	5.32E-07	5.32E-07	2.7E-05	No

None of the PTEs for carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any carcinogenic TAP because none of the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

**Post Project HAP Emissions**

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

**Table 8 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY**

IDAPA Listing	Hazardous Air Pollutants	PTE (T/yr)
585	Chromium metal (II and III)	2.14E-06
	Manganese as Mn (fume)	1.09E-05
	Phosphorous	7.09E-06
	Selenium	4.68E-07
586	Arsenic	2.24E-06
	Beryllium and compounds	5.16E-08
	Cadmium and compounds	1.50E-07
	Chromium (VI)	4.65E-07
	Nickel	2.33E-06
<b>Total</b>		<b>2.58E-05</b>

The estimated PTE for all federally listed HAPs combined is below 25 T/yr and no PTE for a federally listed HAP exceeds 10 T/yr. Therefore, this facility is not a Major Source for HAPs.

***Ambient Air Quality Impact Analyses***

As presented in the Modeling Memo in Appendix B, the estimated emission rates of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, VOC, HAP, and TAP from this project were below applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline<sup>1</sup>. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

The applicant has demonstrated pre-construction 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. The applicant has also demonstrated pre-construction 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). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix B.

<sup>1</sup> Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

An ambient air quality impact analysis document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

As a result of the ambient air quality impact analysis, as well as information submitted by the Applicant for specific operating scenarios, the following conditions (along with corresponding monitoring and record keeping requirements) were placed in the permit:

- The Emissions Limits permit condition,
- The Concrete Production Limits permit condition,

## **THE RELOCATION REQUIREMENT PERMIT CONDITION.REGULATORY ANALYSIS**

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

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

### ***Facility Classification***

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

- A = Use when any one HAP has permitted emissions > 10 T/yr or if the aggregate of all HAPS (Total HAPs) has permitted emissions > 25 T/yr.
- SM80 = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits > 8 T/yr of a single HAP or ≥ 20 T/yr of Total HAPs.
- SM = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits < 8 T/yr of a single HAP and/or < 20 T/yr of Total HAPs.
- B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 10 and 25 T/yr HAP major source thresholds.
- UNK = Class is unknown.

For All Other Pollutants:

- A = Use when permitted emissions of a pollutant are > 100 T/yr.
- SM80 = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are ≥ 80 T/yr.
- SM = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are < 80 T/yr.
- B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 100 T/yr major source threshold.
- UNK = Class is unknown.

**Table 9 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION**

<b>Pollutant</b>	<b>Uncontrolled PTE (T/yr)</b>	<b>Permitted PTE (T/yr)</b>	<b>Major Source Thresholds (T/yr)</b>	<b>AIRS/AFS Classification</b>
PM <sub>10</sub>	0.198	0.0499	<b>100</b>	B
PM <sub>2.5</sub>	0.118	0.0298	<b>100</b>	B
HAP (single)	4.32E-05	2.58E-05	<b>10</b>	B
Total HAPs	9.28E-05	1.09E-05	<b>25</b>	B

**Permit to Construct (IDAPA 58.01.01.201)**

IDAPA 58.01.01.201..... Permit to Construct Required

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

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

IDAPA 58.01.01.401..... Tier II Operating Permit

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

**Visible Emissions (IDAPA 58.01.01.625)**

IDAPA 58.01.01.624..... Visible Emissions

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 3.4.

**Fugitive Emissions (IDAPA 58.01.01.650)**

IDAPA 58.01.01.650..... Rules for the Control of Fugitive Emissions

The sources of fugitive emissions at this facility are subject to the State of Idaho fugitive emissions standards. These requirements are assured by Permit Conditions 2.1, 2.2, and 2.5.

**Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701)**

IDAPA 58.01.01.701..... Particulate Matter – New Equipment Process Weight Limitations

IDAPA 58.01.01.700 through 703 set PM emission limits for process equipment based on when the piece of equipment commenced operation and the piece of equipment’s process weight (PW) in pounds per hour (lb/hr). IDAPA 58.01.01.701 and IDAPA 58.01.01.702 establish PM emission limits for equipment that commenced operation on or after October 1, 1979 and for equipment operating prior to October 1, 1979, respectively.

For equipment that commenced operation on or after October 1, 1979, the PM allowable emission rate (E) is based on one of the following four equations:

IDAPA 58.01.01.701.01.a: If PW is < 9,250 lb/hr;  $E = 0.045 (PW)^{0.60}$

IDAPA 58.01.01.701.01.b: If PW is  $\geq 9,250$  lb/hr;  $E = 1.10 (PW)^{0.25}$

For equipment that commenced prior to October 1, 1979, the PM allowable emission rate is based on one of the following equations:

IDAPA 58.01.01.702.01.a: If PW is < 17,000 lb/hr;  $E = 0.045 (PW)^{0.60}$

IDAPA 58.01.01.702.01.b: If PW is  $\geq 17,000$  lb/hr;  $E = 1.12 (PW)^{0.27}$

As discussed previously in the Emissions Inventory Section, concrete has a density of 4,024 lb per cubic yard. Thus, for the new Concrete Batch Plant proposed to be installed as a result of this project with a proposed throughput of 30 y<sup>3</sup>/hr, E is calculated as follows:

Proposed throughput = 4,024 lb per cubic yard x 30 y<sup>3</sup>/hr = 120,720 lb/hr

Therefore, E is calculated as:

$$E = 0.045 \times PW^{0.60} = 0.045 \times (120,720)^{0.60} = 50.4 \text{ lb-PM/hr}$$

As presented previously in the Emissions Inventories Section of this evaluation the post project PTE for this emissions unit is 0.0831 lb-PM<sub>10</sub>/hr. Assuming PM is 50% PM<sub>10</sub> means that PM emissions will be 0.166 lb-PM/hr (0.0831 lb-PM<sub>10</sub>/hr ÷ 0.5 lb-PM<sub>10</sub>/lb-PM). Therefore, compliance with this requirement has been demonstrated.

### **Rules for Control of Odors (IDAPA 58.01.01.775)**

IDAPA 58.01.01.750..... Rules for Control of Odors

Section 776.01 states that 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. These requirements are assured by Permit Conditions 2.4 and 2.6.

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

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

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

### **PSD Classification (40 CFR 52.21)**

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

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52.21(b)(1). Therefore, in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is/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 any NSPS requirements 40 CFR Part 60.

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

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

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

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

### **Permit Conditions Review**

Permit Condition 1.1 establishes the permit to construct scope.

Permit Condition, Table 1.1, provides a description of the purpose of the permit and the regulated sources, the process, and the control devices used at the facility.

## ***FACILITY-WIDE CONDITIONS***

As discussed previously, Permit Condition 2.1 establishes that the permittee shall take all reasonable precautions to prevent fugitive particulate matter (PM) from becoming airborne and provides examples of the controls in accordance with IDAPA 58.01.01.650-651.

As discussed previously, Permit Condition 2.2 establishes that the concrete batch plant shall employ efficient fugitive dust controls and provides examples of the controls in accordance with IDAPA 58.01.01.808.01 and 808.02.

Permit Condition 2.3 establishes that the permittee shall not relocate the permitted equipment until a PTC has been obtained that allows operation at the proposed new site. This requirement is based upon imposing reasonable permit conditions for non-portable facilities.

As discussed previously, Permit Condition 2.4 establishes that there are to be no emissions of odorous gases, liquids, or solids from the permit equipment into the atmosphere in such quantities that cause air pollution.

As discussed previously, Permit Condition 2.5 establishes that the permittee shall monitor fugitive dust emissions on a daily basis to demonstrate compliance with the facility-wide permit requirements.

As discussed previously, Permit Condition 2.6 establishes that the permittee monitor and record odor complaints to demonstrate compliance with the facility-wide permit requirements.

Permit Condition 2.7 establishes that the permittee shall maintain records as required by the Recordkeeping General Provision.

## ***CONCRETE BATCH PLANT EQUIPMENT***

Permit Condition 3.1 provides a process description of the concrete production process at this facility.

Permit Condition 3.2 provides a description of the control devices used on the concrete production equipment at this facility.

Permit Condition 3.3 establishes hourly and annual emissions limits for PM<sub>10</sub> and PM<sub>2.5</sub> emissions from the concrete production operation at this facility.

As discussed previously, Permit Condition 3.4 establishes a 20% opacity limit for the cement storage silo filter stacks or functionally equivalent openings associated with the concrete production operation.

Permit Condition 3.5 establishes a daily and an annual concrete production limit for the concrete production operation as proposed by the applicant.

Permit Condition 3.6 requires that the applicant employ a filter to control emissions from the weigh batcher loadout operation as proposed by the applicant.

Permit Condition 3.7 requires that the applicant employ a boot or shroud with a water ring to control emissions from the truck loadout operation as proposed by the applicant.

Permit Condition 3.8 requires that the applicant maintain the cement storage silo in an airtight condition during times when cement powder is loaded by pneumatic conveyance.

Permit Condition 3.9 establishes that the permittee monitor and record hourly and daily concrete production to demonstrate compliance with the Concrete Production Limits permit condition.

Permit Condition 3.10 establishes that the permittee shall monitor and record the date of each silo loading and the subsequent date on which the filter system maintenance was performed to demonstrate compliance with the Cement Storage Silo Filter Control Equipment permit condition.

Permit Condition 3.11 establishes that the permittee shall establish procedures for operating the cement storage silo filter. This is a DEQ imposed standard requirement for operations using filters to control particulate emissions.

Permit Condition 3.12 establishes that the permittee shall maintain records as required by the Recordkeeping General Provision.

## **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 or IDAPA 58.01.01.404.01.c. During this time, there were comments on the application and 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

CRITERIA POLLUTANT EMISSION INVENTORY for Portable Concrete Batch Plant

11/12/21 11:08

<b>Facility Information</b>		<b>Assumptions Implied or Stated in Application:</b>	
Company: Facility ID: Permit and Project No.: Source Type: Manufacturer/Model:	Facility Name XXX-XXXXX P-20XX.OXXX Project XXXXX Portable/Staionary Concrete Batch Plant XXX	See control assumptions Truck Mix (T) or Central Mix (C) <input type="checkbox"/> T	

<b>Production Rates<sup>1</sup></b>				Per manufacturer Hours of operation per day at max capacity
Maximum Hourly Production Rate:	30	cy/hr		
Proposed Daily Production Rate:	100	cy/day	3.33	
Proposed Maximum Annual Production Rate:	5,000	cy/year		
Cement Storage Silo Capacity:	4540	ft <sup>3</sup> of aerated cement		
Cement Storage Silo Large Compartment Capacity for cement only:	65%	of the silo capacity		
Cement Storage Silo small Compartment Capacity for cement or ash:	35%	of the silo capacity		

Emissions Point	PM <sub>2.5</sub> Emission Factor <sup>1</sup> (lb/cy)		PM <sub>10</sub> Emission Factor <sup>2</sup> (lb/cy)		Controlled Emission Rate PM <sub>2.5</sub> Max.	Controlled Emission Rate PM <sub>10</sub> Max.	Controlled Emission Rate PM <sub>2.5</sub> 24-hour average		Controlled Emission Rate PM <sub>10</sub> 24-hour average		Controlled Emission Rate PM <sub>2.5</sub> annual average		Controlled Emission Rate PM <sub>10</sub> annual average		Control Assumptions:	
	Controlled	Uncontrolled	Controlled	Uncontrolled	lb/hr <sup>3</sup>	lb/hr <sup>3</sup>	lb/hr <sup>4</sup>	lb/day <sup>4</sup>	lb/hr <sup>4</sup>	lb/day <sup>4</sup>	lb/hr <sup>5</sup>	T/yr <sup>5</sup>	lb/hr <sup>5</sup>	T/yr <sup>5</sup>		
Aggregate delivery to ground storage		0.00096		0.0031	0.01	0.02	0.00	0.02	0.003	0.08	1.37E-04	6.00E-04	0.000	0.002	75%	Water Sprays at Operator's Discretion
Sand delivery to ground storage		0.000225		0.0007	0.00	0.01	2.34E-04	0.01	0.001	0.02	3.21E-05	1.41E-04	0.000	0.000	75%	Water Sprays at Operator's Discretion
Aggregate transfer to conveyor		0.00096		0.0031	0.01	0.02	0.00	0.02	0.003	0.08	1.37E-04	6.00E-04	0.000	0.002	75%	Water Sprays at Operator's Discretion
Sand transfer to conveyor		0.000225		0.0007	0.00	0.01	2.34E-04	0.01	0.001	0.02	3.21E-05	1.41E-04	0.000	0.000	75%	Water Sprays at Operator's Discretion
Aggregate transfer to elevated storage		0		0.0000	0.00	0.00	0.00	0.00	0.000	0.00	0.00E+00	0.00E+00	0.000	0.000	75%	Water Sprays at Operator's Discretion
Sand transfer to elevated storage		0		0.0000	0.00	0.00	0.00E+00	0.00	0.000	0.00	0.00E+00	0.00E+00	0.000	0.000	75%	Water Sprays at Operator's Discretion
Cement delivery to Silo (controlled EF)	0.00003		0.0001		9.00E-04	2.50E-03	1.25E-04	3.00E-03	3.48E-04	8.35E-03	1.71E-05	7.50E-05	4.76E-05	2.09E-04	0.00%	Baghouse is process equipment, use controlled EF
Cement supplement delivery to Silo (controlled EF)	0.000045		0.0002		1.35E-03	5.36E-03	1.88E-04	4.50E-03	7.45E-04	1.79E-02	2.57E-05	1.13E-04	1.02E-04	4.47E-04	0.00%	Baghouse is process equipment, use controlled EF
Weight hopper loading (sand & aggregate batcher loading)		0		0.00000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	99.0%	Sealed boot (vents back to silo) or baghouse.
Truck mix loading, Table 11.12-2, "0.310 lb/ton of cement+flyash" x ((491 lb cement + 73 lb flyash)/cy concrete)/ 2000 lb = 0.0874 lb/cy. PM2.5 was calculated as 15% of PM: "1.118 lb/ton of cement+flyash" x ((491 lb cement + 73 lb flyash)/cy concrete) * 0.15/ 2000 lb = 0.0473 lb/cy		0.0473		0.07874	3.55E-01	0.59	0.05	1.18	0.08	1.97	6.75E-03	2.96E-02	0.01	0.05	75.0%	Boot, enclosure, or equivalent or baghouse or boot w/water ring
Central mix loading, Table 11.12-2, "0.156 lb/ton of cement+flyash" x ((491 lb cement + 73 lb flyash)/cy concrete)/ 2000 lb = 0.0440 lb/cy. PM2.5 was calculated as 15% of PM: "0.572 lb/ton of cement+flyash" x ((491 lb cement + 73 lb flyash)/cy concrete) * 0.15/ 2000 lb = 0.0242 lb/cy		0.0000		0.0000	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00	0.00	75.0%	Baghouse control
<b>Point Sources Total Emissions</b>	<b>4.74E-02</b>		<b>7.90E-02</b>		<b>3.57E-01</b>	<b>5.98E-01</b>	<b>4.96E-02</b>	<b>1.19E+00</b>	<b>8.31E-02</b>	<b>1.99E+00</b>	<b>6.79E-03</b>	<b>2.98E-02</b>	<b>1.14E-02</b>	<b>4.99E-02</b>		
Process Fugitive Emissions	0.00237		0.0076		0.02	0.06	0.00	0.06	0.01	0.19	0.00	0.00	0.00	0.00		
Facility Wide Total: Point Sources + Process Fugitives (Except for Road Dust and Windblown Dust)			0.0866			0.66	0.05	1.25	0.09	2.18			0.01	0.05		

POINT SOURCE EMISSIONS for FACILITY CLASSIFICATION<sup>6</sup> Controlled EF at 262,800 cy/yr T/yr (controlled PTE @ 8,760)

Facility Classification Total PM <sup>6</sup>	8.40E-03	1.10E+00
Facility Classification Total PM10 <sup>6</sup>	2.62E-04	3.45E-02

Uncontrolled PTE	
PM10 (T/yr)	PM2.5 (T/yr)
0.198	0.118

<sup>1</sup> The EFs were calculated using EFs in lb/ton of material handled from Table 11.12-5, and a percentage of PM that is considered to be PM<sub>2.5</sub>. The percentage used to establish the EFs were based on AP-42, Appendix B, Table B-2.2, Category 3. It was established that the fraction that is PM<sub>2.5</sub> is 15%. Note that the aggregate and sand handling are static EFs in this spreadsheet, but varies during modeling as the wind speed changes each hour.

<sup>2</sup> The EFs were calculated using EFs in lb/ton of material handled from Table 11.12-5, typical composition per cubic yard of concrete (1965 lb aggregate, 1428 lbs sand, 491 lbs cement, 73 lbs cement supplement, and 20 gallons of water = 4024 lb/cy), and closely match Table 11.12-5 values (version 6/06) when rounded to the same number of figures. AP-42 lists the same EFs for uncontrolled and controlled emissions, so control estimates are based on the assumed control levels input on the right hand side of the table.

<sup>3</sup> Max. hourly rate includes reductions associated with control assumptions.

<sup>4</sup> Hourly emissions rate (24-hr average) = Max hourly emissions rate x (hrs per day) / 24.

Daily emissions rate = max emissions rate (1-hr average) x proposed hrs/day.

<sup>5</sup> Annual average hourly emissions rate = EF (lb/cy) x proposed annual production rate (cy/yr) / (8760 hr/yr).

Annual emissions rate = EF (lb/cy) x proposed annual production rate (cy/yr) / (2000 lb/T)

<sup>6</sup> Controlled EFs for PM = 0.0002 (cement silo) + 0.0003 (flyash silo) + 0.0079 (weigh batcher) for PM10 = 0.0001 (cement silo) + 0.0002 (flyash silo) + 0.0040 (weigh batcher)

<sup>7</sup> Emissions for Facility Classification are based on baghouses as process equipment, 24-hr day, 8760 hr/yr = 720 cy/day, and 262,800 cy/yr

<sup>8</sup> Emissions for Facility Classification do not include truck mix loading emissions; this is typically considered a fugitive emission source for concrete batch plants.

Emissions Point	Lead Emission Factor <sup>1</sup> (lb/ton of material loaded)	Increase in Emissions from this PTC				Emissions for Facility Classification	
		Emission Rate, Max.	Emissions for Comparison with DEQ Modeling Threshold	Emission Rate, Quarterly	Emissions for Facility Classification	T/yr	
Cement delivery to silo <sup>2</sup>	1.09E-08	7.36E-07	8.03E-08	8.14E-06	1.34E-05	1.11E-08	Point Source 3.52E-07
Cement supplement delivery to Silo <sup>3</sup>	5.20E-07	ND	5.69E-07	5.77E-05	9.49E-05	7.91E-08	Point Source 2.49E-06
Truck Loadout (with 99.9% control) <sup>8</sup>		3.62E-06	7.66E-06	7.76E-04	1.28E-03	1.06E-06	Fugitive 3.35E-05
Central Mix (with 130% control)		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Fugitive 0.00E+00
<b>Total</b>			<b>8.31E-06</b>	<b>8.42E-04</b>	<b>0.001</b>		<b>Point Sources 2.85E-06</b>
DEQ Modeling Threshold			100	0.6			
Modeling Required?			No	No			

<sup>1</sup> The emissions factors are from AP-42, Table 11.12-8 (version 06/06)

<sup>2</sup> Max. hourly rate = EF x pound of cement/ft<sup>3</sup> of concrete x max. hourly concrete production rate/(2000 lb/T)

<sup>3</sup> lb/mo = EF x pound of material/ft<sup>3</sup> of concrete x max. daily concrete production rate x (365/12)/(2000 lb/T)

<sup>4</sup> T/yr = EF x pound of material/ft<sup>3</sup> of concrete x max. annual concrete production rate/(2000 lb/T)

<sup>5</sup> lb/hr, qtrly avg = lb/mo x 3 months per qtr / (8760/4)hrs per qtr



## Data Input Tab

**Note: All blue text is meant to be edited by the processing engineer.**

- 1 Enter the facility information in the "Facility Information" boxes.
- 2 Enter the concrete production rates that were applied for.
- 3 Enter the daily operating hours for the facility.
- 4 Select "T" or "C" as the type of facility. "T" represents truck mix and "C" represents central mix  
The fugitive control efficiency can either be **75%** or **95%**. **0%** is used to calculate uncontrolled emissions.  
**75%** Fugitive Control assumes typical Best Management Practices like those identified in IDAPA 58.01.01.650-651.  
**95%** Fugitive Control assumes typical control methods such as limiting dust from traffic, enclosed aggregate piles, and covering or suppressing piles.  
This amount of control also assumes that no visible emissions will occur at the property boundary.  
Truck loadout control efficiency can be either **70%**, **95%**, or **99%**. **0%** is used to calculate uncontrolled emissions.  
**75%** Control Loadout assumes a boot shroud or enclosure with 70% control efficiency during truck loadout.  
**80%** Control Loadout assumes a boot shroud and a water ring spray system.  
**99%** Control Loadout assumes a boot shroud and a baghouse system.
- 5 Select the dropdown stating whether or not a water heater will be used onsite.  
If the selected answer is "Yes", fill out the remainder of the section. The facility may have up to two water heaters up to a heating input rating less than 10 MMBtu.  
Select the appropriate fuel type for each heater and enter the rating of each unit. Remember to set all heaters not used to fuel type "**N/A**".  
Enter the annual operating hours of the heaters. Note: It is assumed that they will operate simultaneously.
- 6 Select the dropdown stating whether or not an engine will be used as an electrical power source at the facility.  
If the selected answer is "Yes", enter the make, model, and the horsepower of the engine. **If the engine is a "non-road" IC engine (thus not stationary), "No" should be entered as well.**  
The EPA certification rating needs to be entered as well.  
Enter a zero if there is only one engine. For example, if there is only a 1,000 bhp engine, enter "0" as the rating for the small engine.  
Enter a negative one (-1) if there is only one engine. For example, if there is only a 1,000 bhp engine, enter -1 as the certification for the small engine.  
The facility may have up to 2 small engines (<=600 bhp) and one large engine (>600 bhp).  
Enter the number of operating hours for each engine.
- 7 Enter the number of transfer points at the facility; the default value is two (2).

## CBP Criteria Tab

- 9 Daily and annual throughput is restricted to specific amounts defined in the pulldown menu.
- 10 Depending on the data inputs, emissions are calculated for all criteria and TAP emissions associated with the concrete batch plant.  
Note that 20% Chromium VI is used for cement and 30% Cr 6+ is used for the supplement or flyash

## EI-Nat Gas Water Heater Tab

- 11 Natural Gas Water Heater - Limited to only natural gas as a fuel source.  
If two heaters are selected and both are natural gas, the rating will be additive.  
**If the water heater being used is not natural gas-fired the hr/day and hr/yr should both be set to zero**

## EI-Diesel Water Heater Tab

- 12 Diesel water heater - Limited to only 15 ppm sulfur content ASTM disillate fuel.  
If two heaters are selected and both are diesel-fired, the rating will be additive.  
**If the water heater being used is not diesel-fired the hr/day and hr/yr should both be set to zero**

## Propane Water Heater Tab

- 13 Propane water heater - Limited to only propane as a fuel source  
If two heaters are selected and both are propane, the rating will be additive.  
**If the water heater being used is not propane-fired the hr/day and hr/yr should both be set to zero**

## IC Engine Input Tab

- 14 This section reiterates the input parameters and makes a few calculations associated with the IC engine.

## Large and Small IC Engine Emissions Tabs

- 15 This tab displays the emissions associated with the IC engines. These emissions assume worst case scenario. There is no user input here.

## GHG Emissions

- 16 This tab displays the emissions associated with the generator. These emissions assume worst case scenario. There is no user input here.

## Transfer Points Tab

- 17 The number of transfer points may be updated by the user and is highlighted in blue. The default assumes 2.

## Final EI Tab

- 18 This tab provides the total emissions for the facility.

## Data Input

### 1. Facility Information

Facility Name:	Facility Name
Facility ID:	XXX-XXXXX
Permit and Project No.:	P-20XX.0XXX Project XXXXX
Source Type:	Portable/Staionary Concrete Batch Plant
Manufacturer/Model:	XXX

### 2. Concrete Production Rates

Maximum Hourly Concrete Production Rate:	30		
Proposed Daily Concrete Production Rate:	100	cy/day	3.33
Proposed Maximum Annual Concrete Production Rate:	5,000	cy/year	hr/day

### 3. Daily Operating Hours

Maximum daily hours of operation for facility?	9
------------------------------------------------	---

### 4. Concrete Batch Plant Specifications

Is the facility type a truck mix (T) or central mix (C)?	T
What level of PM control is used for loadout, either Truck or Central?	75%
What level of PM control is used for fugitive emissions?	75%

### 5. Water Heater Usage

Does this facility use a water heater?	No		
How many units?	0	Heat Input Rating	
<b>Water Heater #1</b>			
If using a water heater, select the proposed fuel types and enter the heat input rating of water heater #1.	Natural Gas	0	0
	Diesel	0	
	Propane	0	
<b>Water Heater #2</b>			
If multiple units, select the proposed fuel types and enter the heat input rating of water heater #2.	Natural Gas	0	0
	Diesel	0	
	Propane	0	
Are you assuming continual operations throughout the year?			
		Yes	
Maximum annual hours of water heater operation? (If assuming continual operation, enter 8,760)		8,760	

### 6. Internal Combustion Engine(s)

Are internal combustion engines used to provide electrical power at the facility?	No		
How many small engines (less than or equal to 600 bhp) are being used at the facility?	0		
Horsepower rating of small engine #1 (<=600 bhp)? (If non-road or no engine enter 0)	0		
Horsepower rating of small engine #2 (<=600 bhp)? (If non-road or no engine enter 0)	0		
Horsepower rating of large engine (greater than 600 bhp)? (If non-road or no engine enter 0)	0		

Please enter 0 for all units.

<b>Note: If there is no small or large engine enter -1 for the certification</b>	<b>Small IC Engine #1</b>	<b>Small IC Engine #2</b>	<b>Large IC Engine</b>
Select the EPA Certification:	-1	-1	-1
Not an EPA-certified IC engine: Enter "0" (zero)			
Certified Tier 1, Tier 2, Tier 3, or Tier 4 IC engine: Enter 1, 2, 3, or 4			
Certified "BLUE SKY" IC engine: Enter 5			

Enter the annual operating hours for the small IC engine(s)	2000
Enter the annual operating hours for the large IC engine	2000

### 7. Transfer Points

Enter the total number of transfer points in the facility? (2 is the default)	2
-------------------------------------------------------------------------------	---

**Toxic Air Pollutant (TAPs) EMISSIONS INVENTORY, Concrete Batch Plant**

<b>Facility Information</b>		Emissions estimates are based on EFs in AP-42, Table 11.12-8 (version 06/06) and the following composition of one yard of concrete:	
Company:	Facility Name	Coarse aggregate	1865 pounds
Facility ID:	XXX-XXXX	Sand	1428 pounds
Permit No.:	P-20XX.0XXX Project XXXX	Cement	491 pounds
Source Type:	Portable/Staionary Concrete Batch Plant	supplement	73 pounds
Manufacturer:	XXX	Water	20 gallons
		<b>Concrete</b>	<b>4024 pounds</b>

**Truck Mix Loadout Factor: 1**  
**Central Mix Batching Factor: 0**

**DEQ EI VERIFICATION WORKSHEET Version 032007**  
 Tip: Blue text or numbers are meant to be changed.  
 Black text or numbers indicates it's hard-wired or calculated.  
 Review these before you change them.

<b>Concrete Production</b>			
Maximum Hourly Production Rate:	30	cy/hr	
Proposed Daily Production Rate:	100	cy/day	
Proposed Maximum Annual Production Rate:	5,000	cy/year	

<b>Uncontrolled (Unlimited Production Rate)</b>			
	720	cy/day	24 hrs/day,
	262,800	cy/year	7 day/wk, 52 wks/year

**TAP Emission Factors from AP-42, Table 11.12-8 (Version 06/06)**

Emissions Point	Arsenic EF (lb/ton of material loaded)		Beryllium EF (lb/ton of material loaded)		Cadmium EF (lb/ton of material loaded)		Chromium EF (lb/ton of material loaded)		Manganese EF (lb/ton of material loaded)		Nickel EF (lb/ton of material loaded)		Phosphorus EF (lb/ton of material loaded)		Selenium EF (lb/ton of material loaded)		Chromium VI
	Controlled with Fabric filter	Uncontrolled	Controlled with Fabric filter	Uncontrolled	Controlled with Fabric filter	Uncontrolled	Controlled with Fabric filter	Uncontrolled	Controlled with Fabric filter	Uncontrolled	Controlled with Fabric filter	Uncontrolled	Controlled with Fabric filter	Uncontrolled	Controlled with Fabric filter	Uncontrolled	
Cement silo filling (with baghouse)	4.24E-09	1.68E-06	4.86E-10	1.79E-08	ND	2.34E-07	2.90E-08	2.52E-07	1.17E-07	2.02E-04	4.18E-08	1.76E-05	ND	1.18E-05	ND	ND	20%
Cement supplement silo filling (with baghouse)	1.00E-06	ND	9.04E-08	ND	1.98E-10	ND	1.22E-06	ND	2.56E-07	ND	2.28E-06	ND	3.54E-06	ND	7.24E-08	ND	30%
Truck loading (no boot or shroud)	6.02E-07	1.22E-05	1.04E-07	2.44E-07	9.06E-09	3.42E-08	4.10E-06	1.14E-05	2.08E-05	6.12E-05	4.78E-06	1.19E-05	1.23E-05	3.84E-05	1.13E-07	2.62E-06	21.29%
Central Mix Batching (NO boot or shroud)	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	21.29%

**UNCONTROLLED TAP EMISSIONS**

Note: Includes baghouses as process equipment.

720 cy/day, and

262,800 cy/yr

Emissions Point	Arsenic		Beryllium		Cadmium		Chromium		Manganese		Nickel		Phosphorus		Selenium		Chromium VI
	lb/hr annual avg.	T/yr <sup>4</sup>	lb/hr annual avg.	T/yr	lb/hr annual avg.	T/yr	lb/hr 24-hr avg.	T/yr <sup>5</sup>	lb/hr 24-hr avg.	T/yr	lb/hr annual avg.	T/yr	lb/hr 24-hr avg.	T/yr	lb/hr 24-hr avg.	T/yr	
Cement silo filling (with baghouse)	3.12E-08	1.37E-07	3.58E-09	1.57E-08	1.72E-06	7.55E-06	2.14E-07	8.13E-06	8.62E-07	3.77E-06	3.08E-07	1.35E-06	8.69E-05	3.81E-04	ND	ND	4.27E-08
Cement supplement silo filling (with baghouse)	1.10E-06	4.80E-06	9.90E-08	4.34E-07	2.17E-10	9.50E-10	1.34E-06	5.85E-06	2.80E-07	1.23E-06	2.50E-06	1.09E-05	3.88E-06	1.70E-05	7.93E-08	3.47E-07	4.01E-07
Truck loading (no boot or shroud)	1.03E-04	4.52E-04	2.06E-06	9.04E-06	2.89E-07	1.27E-06	9.64E-05	4.22E-04	5.18E-04	2.27E-03	1.01E-04	4.41E-04	3.25E-04	1.42E-03	2.22E-05	9.71E-05	2.05E-05
Central Mix Batching (NO boot or shroud)	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00
<b>Sources Total</b>	<b>1.04E-04</b>	<b>4.57E-04</b>	<b>2.17E-06</b>	<b>9.49E-06</b>	<b>2.01E-06</b>	<b>8.82E-06</b>	<b>9.80E-05</b>	<b>4.36E-04</b>	<b>5.19E-04</b>	<b>2.27E-03</b>	<b>1.03E-04</b>	<b>4.53E-04</b>	<b>4.16E-04</b>	<b>1.82E-03</b>	<b>2.22E-05</b>	<b>9.74E-05</b>	<b>2.10E-05</b>
IDAPA Screening EL (lb/hr)	1.50E-06		2.80E-05		3.70E-06		3.30E-02		3.33E-01		2.70E-05		7.00E-03		1.30E-02		5.60E-07
EXCEEDS EL?	Yes		No		No		No		No		Yes		No		No		Yes

Facility Classification: Total Annual HAPs Emissions

5.56E-03 Tons per year

**CONTROLLED TAP EMISSIONS**

Note: Includes baghouses as process equipment.

100 cy/day, and

5,000 cy/year

Emissions Point	Arsenic		Beryllium		Cadmium		Chromium		Manganese		Nickel		Phosphorus		Selenium		Chromium VI
	lb/hr annual avg.	T/yr <sup>4</sup>	lb/hr annual avg.	T/yr	lb/hr annual avg.	T/yr	lb/hr 24-hr avg.	T/yr <sup>5</sup>	lb/hr 24-hr avg.	T/yr	lb/hr annual avg.	T/yr	lb/hr 24-hr avg.	T/yr	lb/hr 24-hr avg.	T/yr	
Cement silo filling (with baghouse) <sup>1</sup>	5.94E-10	2.60E-09	6.81E-11	2.98E-10	3.28E-08	1.44E-07	2.97E-08	1.78E-08	1.20E-07	7.18E-08	5.86E-09	2.57E-08	ND	ND	ND	ND	8.13E-10
Cement supplement silo filling (with baghouse) <sup>2</sup>	2.08E-08	9.13E-08	1.88E-09	8.25E-09	4.13E-12	1.81E-11	1.25E-06	1.11E-07	2.62E-07	2.34E-08	4.75E-08	2.08E-07	3.62E-06	3.23E-07	1.10E-08	6.61E-09	7.63E-09
Truck loading (with baghouse)	4.91E-07	2.15E-06	9.82E-09	4.30E-08	1.38E-09	6.03E-09	3.35E-06	2.01E-06	1.80E-05	1.08E-05	4.79E-07	2.10E-06	1.13E-05	6.77E-06	7.70E-07	4.62E-07	9.77E-08
Central Mix Batching (WITH boot or shroud)	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00
<b>Sources Total</b>	<b>5.12E-07</b>	<b>2.24E-06</b>	<b>1.18E-08</b>	<b>5.16E-08</b>	<b>3.42E-08</b>	<b>1.50E-07</b>	<b>4.63E-06</b>	<b>2.14E-06</b>	<b>1.84E-05</b>	<b>1.09E-05</b>	<b>5.32E-07</b>	<b>2.33E-06</b>	<b>1.49E-05</b>	<b>7.09E-06</b>	<b>7.81E-07</b>	<b>4.68E-07</b>	<b>1.06E-07</b>
IDAPA Screening EL (lb/hr)	1.50E-06		2.80E-05		3.70E-06		3.30E-02		3.33E-01		2.70E-05		7.00E-03		1.30E-02		5.60E-07
Percent of EL	34.16%		0.04%		0.92%		0.01%		0.0055%		1.97%		0.21%		0.0060%		18.95%
EXCEEDS EL?	No		No		No		No		No		No		No		No		No

75.00% Boot, enclosure, or equivalent or baghouse or boot w/water ring

75.00% Baghouse control

2.54E-05 Tons per year

<sup>1</sup> lb/hr, annual average = EF x pound of cement / Yd<sup>3</sup> of concrete x annual concrete production rate / 2000lb/Ton / 8760 hr/yr; lb/hr, 24-hr = EF x pound of cement / Yd<sup>3</sup> of concrete x daily concrete production rate / 2000lb/Ton / 24 hr/day

<sup>2</sup> lb/hr, annual average = EF x pound of cement supplement / Yd<sup>3</sup> of concrete x annual concrete production rate / 2000lb/Ton / 8760 hr/yr; lb/hr, 24-hr average = EF x pound of cement supplement / Yd<sup>3</sup> of concrete x daily concrete production rate / 2000lb/Ton

<sup>3</sup> lb/hr, annual average = EF x pound of (cement + cement supplement) / Yd<sup>3</sup> of concrete x annual concrete production rate / 2000lb/Ton / 8760 hr/yr; lb/hr, 24-hr average = EF x pound of (cement + cement supplement) / Yd<sup>3</sup> of concrete x daily concrete production

<sup>4</sup> T/yr = lb/hr, annual avg x 8760 hr/yr x (1T/2000 lb)

<sup>5</sup> T/yr = EF x pound of cement, or cement supplement, or cement + cement supplement x annual concrete production rate /2000 lb/ton / 2000 lb/ton

NATURAL GAS COMBUSTION, AP-42 SECTION 1.4 (7/98)

Operating Assumptions:  
 0 MMBtu/hr      1,020 MMBtu/MMscf =      0.00E+00 MMscf/hr  
 0% used by heater 1      0 hr/day  
 0% used by heater 2      0 hr/yr

Fuel Use:  
 0.000 MMscf/day  
 0.000 MMscf/year

Criteria Air Pollutants	Emission Factor lb/MMscf	Emissions		CBP + Boiler Emissions T/yr	Modeling Threshold 2002 Guidance	Modeling Required?	Modeling Threshold Case-by-Case	Modeling Required?
		lb/hr	T/yr					
NO2	100	0.00E+00	0.00E+00	0.00E+00	1 T/yr	No	7 T/yr	No
CO	84	0.00E+00	0.00E+00	0.00E+00	14 lb/hr	No	70 lb/hr	No
PM10	7.6	0.00E+00	0.00E+00	4.99E-02	0.2 lb/hr	No	0.9 lb/hr	No
		0.00E+00	0.00E+00		1 T/yr	No	7 T/yr	No
PM2.5	7.6	0.00E+00	0.00E+00	2.98E-02				
		0.00E+00	0.00E+00					
SOx	0.6	0.00E+00	0.00E+00	0.00E+00	0.2 lb/hr	No	0.9 lb/hr	No
		0.00E+00	0.00E+00		1 T/yr	No	7 T/yr	No
VOC	5.5	0.00E+00	0.00E+00	0.00E+00	40 T/yr	No		
Lead	0.0005	0.00E+00	0.00E+00	1.38E-03	0.6 T/yr	No		
Lead, continued			5.37E-03	lb/quarter	10 lb/mo	No		
TOTAL			<b>0.00E+00</b>	T/yr	Note: 100 lb/mo Pb in guidance reduced by factor of 10 based on latest Pb NAAQS (reduced in 2008 from 1.5 ug/m3 to 0.15 ug/m3)			

Hazardous Air Pollutants (HAPs) and Toxic Air Pollutants (TAPs)					Exceeds EL/Modeling Required?
	lb/MMscf	lb/hr	T/yr	EL (lb/hr)	
<b>PAH HAPs</b>					
2-Methylnaphthalene	2.40E-05	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
3-Methylchloranthrene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	2.50E-06	No
7,12-Dimethylbenz(a)anthracene	1.80E-05	0.00E+00	0.00E+00		
Acenaphthene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Acenaphthylene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Anthracene	2.40E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Benzo(a)anthracene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	See POM
Benzo(a)pyrene	1.20E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	2.00E-06	See POM
Benzo(b)fluoranthene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Benzo(g,h,i)perylene	1.20E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Benzo(k)fluoranthene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Chrysene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Dibenz(a,h)anthracene	1.20E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Dichlorobenzene	1.20E-03	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Fluoranthene	3.00E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Fluorene	2.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Indeno(1,2,3-cd)pyrene	1.80E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Naphthalene	6.10E-04	0.00E+00	0.00E+00	3.33	No
Naphthalene	6.10E-04	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Phenanthrene	1.70E-05	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Pyrene	5.00E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Polycyclic Organic Matter (POM) 7-PAH Group		<b>0.00E+00</b>	<b>0.00E+00</b>	2.00E-06	No
<b>Non-PAH HAPs</b>					
Benzene	2.10E-03	<b>0.00E+00</b>	<b>0.00E+00</b>	8.00E-04	No
Formaldehyde	7.50E-02	<b>0.00E+00</b>	<b>0.00E+00</b>	5.10E-04	No
Hexane	1.80E+00	0.00E+00	0.00E+00	12	No
Toluene	3.40E-03	0.00E+00	0.00E+00	25	No
<b>Non-HAP Organic Compounds</b>					
Butane	2.10E+00	0.00E+00	0.00E+00		
Ethane	3.10E+00	0.00E+00	0.00E+00		
Pentane	2.60E+00	0.00E+00	0.00E+00	118	No
Propane	1.60E+00	0.00E+00	0.00E+00		
<b>Metals (HAPs)</b>					
Arsenic	2.00E-04	<b>0.00E+00</b>	<b>0.00E+00</b>	1.50E-06	No
Barium	4.40E-03	0.00E+00	0.00E+00	0.033	No
Beryllium	1.20E-05	<b>0.00E+00</b>	<b>0.00E+00</b>	2.80E-05	No
Cadmium	1.10E-03	<b>0.00E+00</b>	<b>0.00E+00</b>	3.70E-06	No
Chromium	1.40E-03	0.00E+00	0.00E+00	0.033	No
Cobalt	8.40E-05	0.00E+00	0.00E+00	0.0033	No
Copper	8.50E-04	0.00E+00	0.00E+00	0.013	No
Manganese	3.80E-04	0.00E+00	0.00E+00	0.067	No
Mercury	2.60E-04	0.00E+00	0.00E+00	0.003	No
Molybdenum	1.10E-03	0.00E+00	0.00E+00	0.333	No
Nickel	2.10E-03	<b>0.00E+00</b>	<b>0.00E+00</b>	2.70E-05	No
Selenium	2.40E-05	0.00E+00	0.00E+00	0.013	No
Vanadium	2.30E-03	0.00E+00	0.00E+00	0.003	No
Zinc	2.90E-02	0.00E+00	0.00E+00	0.667	No

Case-by-Case Modeling Thresholds may be used ONLY with DEQ Approval

TOTAL CBP + WATER HEATER EMISSIONS (POINT SOURCES, T/yr) **0.08**

NOTE: TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.

DIESEL COMBUSTION, AP-42 SECTION 1.3 (9/98)

Operating Assumptions:  
 0 MMBtu/hr / 140 MMBtu/10<sup>3</sup> gal = 0.00E+00 10<sup>3</sup> gal/hr Fuel Use:  
 0% used by heater 1 0 hr/day 0.00 gal/day  
 0% used by heater 2 0 hr/yr 0 gal/year  
 0.0015% sulfur

Criteria Air Pollutants	Emission Factor	Emissions		CBP + Boiler Emissions	Modeling Threshold	Modeling Required?	Modeling Threshold	Modeling Required?
		lb/10 <sup>3</sup> gal	lb/hr					
NO2	20	0.00E+00	0.00E+00	0.00E+00	1 T/yr	No	7 T/yr	No
CO	5	0.00E+00	0.00E+00	0.00E+00	14 lb/hr	No	70 lb/hr	No
PM10 (filterable + condensable)	3.3	0.00E+00	0.00E+00	4.99E-02	0.2 lb/hr	No	0.9 lb/hr	No
		0.00E+00	0.00E+00		1 T/yr	No	7 T/yr	No
PM2.5 (filterable + condensable)	1.8	0.00E+00	0.00E+00	2.98E-02				
		0.00E+00	0.00E+00					
SOx (SO2 + SO3)	0.216	0.00E+00	0.00E+00	0.00E+00	0.2 lb/hr	No	0.9 lb/hr	No
		0.00E+00	0.00E+00		1 T/yr	No	7 T/yr	No
VOC (TOC)	0.556	0.00E+00	0.00E+00	0.00E+00	40 T/yr	No		
Lead EF = 9 lb/10 <sup>12</sup> Btu	9	0.00E+00	0.00E+00	1.38E-03	0.6 T/yr	No		
Lead, continued			0.00E+00	lb/quarter	10 lb/mo	No		
<b>TOTAL</b>		<b>0.00E+00</b>	<b>T/yr</b>					

Note: 100 lb/mo Pb in guidance reduced by factor of 10 based on latest Pb NAAQS (reduced in 2008 from 1.5 ug/m3 to 0.15 ug/m3)

Hazardous Air Pollutants (HAPs) and Toxic Air Pollutants (TAPs)	lb/10 <sup>3</sup> gal	lb/hr	T/yr	EL (lb/hr)	Exceeds EL/Modeling Required?
Acenaphthene	2.11E-05	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Acenaphthylene	2.57E-07	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Anthracene	1.22E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Benzo(a)anthracene	4.01E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	See POM
Benzo(a)pyrene				2.00E-06	See POM
Benzo(b,k)fluoranthene	1.48E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Benzo(g,h,i)perylene	2.26E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Benzo(k)fluoranthene	0.00E+00	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Chrysene	2.38E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Dibenzo(a,h)anthracene	1.67E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Dichlorobenzene				9.10E-05	No
Fluoranthene	4.84E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Fluorene	4.47E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Indeno(1,2,3-cd)pyrene	2.14E-06	<b>0.00E+00</b>	<b>0.00E+00</b>		See POM
Naphthalene	1.13E-03	0.00E+00	0.00E+00	3.33	No
Naphthalene	1.13E-03	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Phenanthrene	1.05E-05	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Pyrene	4.25E-06	<b>0.00E+00</b>	<b>0.00E+00</b>	9.10E-05	No
Polycyclic Organic Matter (POM)	7-PAH Group	<b>0.00E+00</b>	<b>0.00E+00</b>	2.00E-06	No
<b>Non-PAH HAPs</b>					
Benzene	2.14E-04	<b>0.00E+00</b>	<b>0.00E+00</b>	8.00E-04	No
Ethyl benzene	6.36E-05	0.00E+00	0.00E+00	2.90E+01	No
Formaldehyde	3.30E-02	<b>0.00E+00</b>	<b>0.00E+00</b>	5.10E-04	No
Hexane	1.80E+00	0.00E+00	0.00E+00	12	No
Toluene	6.20E-03	0.00E+00	0.00E+00	25	No
o-Xylene	1.09E-04			0.007	
<b>Metals (HAPs)</b>	lb/10 <sup>12</sup> Btu				
Arsenic	4.00E+00	<b>0.00E+00</b>	<b>0.00E+00</b>	1.50E-06	No
Barium				0.033	No
Beryllium	3.00E+00	<b>0.00E+00</b>	<b>0.00E+00</b>	2.80E-05	No
Cadmium	3.00E+00	<b>0.00E+00</b>	<b>0.00E+00</b>	3.70E-06	No
Chromium	3.00E+00	0.00E+00	0.00E+00	0.033	No
Cobalt				0.0033	No
Copper	6.00E+00	0.00E+00	0.00E+00	0.013	No
Manganese	6.00E+00	0.00E+00	0.00E+00	0.067	No
Mercury	3.00E+00	0.00E+00	0.00E+00	0.003	No
Molybdenum				0.333	No
Nickel	3.00E+00	<b>0.00E+00</b>	<b>0.00E+00</b>	2.70E-05	No
Selenium	1.50E+01	0.00E+00	0.00E+00	0.013	No
Vanadium				0.003	No
Zinc	4.00E+00	0.00E+00	0.00E+00	0.667	No

NOTE: TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.

1,1,1-Trichloroethane

2.36E-04 Not a HAP (1,1,2 TCA is a HAP). Not a 585 or 586 TAP.

Case-by-Case Modeling Thresholds may be used ONLY with DEQ Approval

TOTAL CBP + WATER HEATER EMISSIONS (POINT SOURCES, T/yr) **0.08**

**PROPANE/BUTANE COMBUSTION, AP-42 SECTION 1.5 (9/98)**

Operating Assumptions:  
 0 MMBtu/hr / 91.5 MMBtu/10<sup>3</sup> gal = 0.00E+00 10<sup>3</sup> gal/hr Fuel Use:  
 0% used by heater 1 0 hr/day 0.00 gal/day  
 0% used by heater 2 0 hr/yr 0 gal/year

Criteria Air Pollutants	Emission Factor	Emissions		CBP + Boiler Emissions	Modeling Threshold	Modeling Required?	Modeling Threshold	Modeling Required?
		lb/10 <sup>3</sup> gal	lb/hr					
NO2	15	0.00E+00	0.00E+00	0.00E+00	1 T/yr	No	7 T/yr	No
CO	8.4	0.00E+00	0.00E+00	0.00E+00	14 lb/hr	No	70 lb/hr	No
PM10 (filterable + condensable)	0.8	0.00E+00	0.00E+00	4.99E-02	0.2 lb/hr	No	0.9 lb/hr	No
		0.00E+00	0.00E+00		1 T/yr	No	7 T/yr	No
PM2.5 (filterable + condensable)	0.8	0.00E+00	0.00E+00	2.98E-02				
		0.00E+00	0.00E+00					
SOx (SO2 + SO3)	1.479	0.00E+00	0.00E+00	0.00E+00	0.2 lb/hr	No	0.9 lb/hr	No
		0.00E+00	0.00E+00		1 T/yr	No	7 T/yr	No
VOC (TOC)	1.1	0.00E+00	0.00E+00	0.00E+00	40 T/yr	No		
Lead EF = 9 lb/10 <sup>12</sup> Btu	0	0.00E+00	0.00E+00	1.38E-03	0.6 T/yr	No		
Lead, continued			0.00E+00	lb/quarter	10 lb/mo	No		
<b>TOTAL</b>			<b>0.00E+00</b>	T/yr				

Note: 100 lb/mo Pb in guidance reduced by factor of 10 based on latest Pb NAAQS (reduced in 2008 from 1.5 ug/m3 to 0.15 ug/m3)

Case-by-Case Modeling Thresholds may be used ONLY with DEQ Approval

<b>TOTAL CBP + WATER HEATER EMISSIONS (POINT SOURCES, T/YR)</b>	<b>0.08</b>
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## CURRENT PTC APPLICATION ESTIMATES

Do you have an internal combustion engine? No

Internal Combustion Engine(s) AP-42 Section 3.3 or 3.4 (diesel fueled)			
		Fuel Type(s)	Generator Toggle
Generator Make/Model	Enter Info	#2 Fuel Oil (Diesel)	1
Rating of Large Engine (hp)	0.0	Max Sulfur weight percent (w/o)	0.0015%
Rating of Small Engine #1 (hp)	0.0		
Rating of Small Engine #2 (hp)	0.0		
EF OPTIONS:		Use EFs in lb/MMBtu fuel input	
1 hp = 0.7456999 kW	0.7457	Calculated Max Fuel Use Rate, gal/hr (Large)	0.00
Avg brake-specific fuel consumption (BSFC) = 7000 Btu/hp-hr	7000	Calculated Max Fuel Use Rate, gal/hr (small #1)	0.00
Fuel Heating Value, Btu/gal	137,030	Calculated Max Fuel Use Rate, gal/hr (small #2)	0.00
		Calculated MMBtu/hr (Large)	0.00
		Calculated MMBtu/hr (Small #1)	0.00
		Calculated MMBtu/hr (Small #2)	0.00
Note: AP-42 Tables 3.3-x,3.4-x: avg diesel heating value is based on 19,300 Btu/lb with density equal 7.1 lb/gal=> Btu/gal =			137,030

EPA Certification for Large Engine:	-1
Not EPA-certified: Enter "0" (zero)	
Certified Tier I, Tier 2, Tier 3, or Tier 4: Enter 1, 2, 3, or 4	
Certified "BLUE SKY" engine: Enter 5	

EPA Certification for Small Engine #1:	-1	EPA Certification for Small Engine #2:	-1
Not EPA-certified: Enter "0" (zero)		Not EPA-certified: Enter "0" (zero)	
Certified Tier I, Tier 2, Tier 3, or Tier 4: Enter 1, 2, 3, or 4		Certified Tier I, Tier 2, Tier 3, or Tier 4: Enter 1, 2, 3, or 4	
Certified "BLUE SKY" engine: Enter 5		Certified "BLUE SKY" engine: Enter 5	

Facility: Facility Name

11/12/2021 11:08

Permit/Facility ID:

Project

XXXXX

XXX-XXXXX

User Input Weight % Sulfur = 0.0015%

SO2 EF = 1.01 x S

**Large Engine**

Fuel Type Toggle = 0  
 0 hp Engine  
 Fuel Consumption Rate 0.00 gal/hr  
 Calculated MMBtu/hr 0.0000 MMBtu/hr  
 Max Daily Operation 9 hr/day  
 Max Annual Operation 2,000 hrs/yr

Pollutant	Emission Factor <sup>a</sup> (lb/MMBtu)	Emissions (lb/hr)	Emissions (T/yr)	TAPs Emissions (lb/hr) Annual or 24-hr Average
PM <sup>b</sup>	0.1	0.000	0.00	
PM-10 (total) <sup>d</sup>	0.000	0.000	0.000	
P.M.-2.5	0.000	0.000	0.000	
CO <sup>b</sup>	0.00	0.000	0.00	
NOx <sup>b</sup>	0.000	0.000	0.00	
SO <sub>2</sub> <sup>b</sup> (total SOx presume)	0.001515	0.000	0.000	
VOC <sup>b</sup> (total TOC--> VOC)	0.000	0.000	0.000	
Lead				
HCl <sup>e</sup>				
<b>Dioxins<sup>e</sup></b>				
2,3,7,8-TCDD				
Total TCDD				
1,2,3,7,8-PeCDD				
Total PeCDD				
1,2,3,4,7,8-HxCDD <sup>f</sup>				
1,2,3,6,7,8-HxCDD				
1,2,3,7,8,9-HxCDD <sup>f</sup>				
Total HxCDD				
1,2,3,4,6,7,8-Hp-CDD <sup>f</sup>				
Total HpCDD <sub>2</sub>				
Octa CDD <sup>f</sup>				
Total PCDD <sup>f</sup>				
<b>Furans<sup>e</sup></b>				
2,3,7,8-TCDF				
Total TCDF <sup>f</sup>				
1,2,3,7,8-PeCDF				
2,3,4,7,8-PeCDF				
Total PeCDF <sup>f</sup>				
1,2,3,4,7,8-HxCDF				
1,2,3,6,7,8-HxCDF				
2,3,4,6,7,8-HxCDF				
1,2,3,7,8,9-HxCDF				
Total HxCDF <sup>f</sup>				
1,2,3,4,6,7,8-HpCDF				
1,2,3,4,7,8,9-HpCDF				
Total HpCDF <sup>f</sup>				
Octa CDF <sup>f</sup>				
Total PCDF <sup>f</sup>				
Total PCDD/PCDF <sup>f</sup>				
<b>Non-PAH HAPs</b>				
Acetaldehyde <sup>c</sup>	7.67E-04	0.00E+00	0.00E+00	<b>0.00E+00</b>
Acrolein <sup>c</sup>	9.25E-05	0.00E+00	0.00E+00	0.00E+00
Benzene <sup>c,e</sup>	9.33E-04	0.00E+00	0.00E+00	<b>0.00E+00</b>
1,3-Butadiene <sup>c,e</sup>	3.91E-05	0.00E+00	0.00E+00	<b>0.00E+00</b>
Ethylbenzene <sup>e</sup>				
Formaldehyde <sup>c,e</sup>	1.18E-03	0.00E+00	0.00E+00	<b>0.00E+00</b>
Hexane <sup>e</sup>				
Isooctane				
Methyl Ethyl Ketone <sup>e</sup>				
Pentane <sup>e</sup>				
Propionaldehyde <sup>e</sup>				
Quinone <sup>e</sup>				
Methyl chloroform <sup>e</sup>				
Toluene <sup>c,e</sup>	4.09E-04	0.00E+00	0.00E+00	0.00E+00
Xylene <sup>c,e</sup>	2.85E-04	0.00E+00	0.00E+00	0.00E+00
<b>PAH, Total</b>		0.00E+00		<b>0.00E+00</b>
<b>POM (7-PAH Group)</b>		0.00E+00	0.00E+00	<b>0.00E+00</b>

Pollutant	Emission Factor <sup>a</sup> (lb/MMBtu)	Emissions (lb/hr)	Emissions (T/yr)	TAPs Emissions (lb/hr) Annual or 24-hr Average
<b>PAH HAPs</b>				
<b>2-Methylnaphthalene</b>				
<b>3-Methylchloranthrene<sup>e</sup></b>				
Acenaphthene <sup>c1</sup>	1.42E-06	0.00E+00	0.00E+00	<b>0.00E+00</b>
Acenaphthylene <sup>c1</sup>	5.06E-06	0.00E+00	0.00E+00	<b>0.00E+00</b>
Anthracene <sup>c1</sup>	1.87E-06	0.00E+00	0.00E+00	<b>0.00E+00</b>
Benzo(a)anthracene <sup>c1</sup>	1.68E-06	0.00E+00	0.00E+00	<b>0.00E+00</b>
Benzo(a)pyrene <sup>c1,e</sup>	1.88E-07	0.00E+00	0.00E+00	<b>0.00E+00</b>
Benzo(b)fluoranthene <sup>c1</sup>	9.91E-08	0.00E+00	0.00E+00	<b>0.00E+00</b>
Benzo(e)pyrene				
Benzo(g,h,i)perylene <sup>c1</sup>	4.89E-07	0.00E+00	0.00E+00	<b>0.00E+00</b>
Benzo(k)fluoranthene <sup>c1</sup>	1.55E-07	0.00E+00	0.00E+00	<b>0.00E+00</b>
Chrysene <sup>c1</sup>	3.53E-07	0.00E+00	0.00E+00	<b>0.00E+00</b>
Dibenzo(a,h)anthracene <sup>c1</sup>	5.83E-07	0.00E+00	0.00E+00	<b>0.00E+00</b>
<b>Dichlorobenzene</b>				
Fluoranthene <sup>c1</sup>	7.61E-06	0.00E+00	0.00E+00	<b>0.00E+00</b>
Fluorene <sup>c1</sup>	2.92E-05	0.00E+00	0.00E+00	<b>0.00E+00</b>
Indeno(1,2,3-cd)pyrene <sup>c1</sup>	3.75E-07	0.00E+00	0.00E+00	<b>0.00E+00</b>
Naphthalene <sup>c1,e</sup>	8.48E-05	0.00E+00	0.00E+00	<b>0.00E+00</b>
Perylene				
Phenanthrene <sup>c1</sup>	2.94E-05	0.00E+00	0.00E+00	<b>0.00E+00</b>
Pyrene <sup>c1</sup>	4.78E-06	0.00E+00	0.00E+00	<b>0.00E+00</b>
<b>Non-HAP Organic Compounds</b>				
Acetone <sup>e</sup>				
Benzaldehyde				
Butane				
Butyraldehyde				
Crotonaldehyde <sup>e</sup>				
Ethylene				
Heptane				
Hexanal				
Isovaleraldehyde				
2-Methyl-1-pentene				
2-Methyl-2-butene				
3-Methylpentane				
1-Pentene				
n-Pentane				
Valeraldehyde				
<b>Metals</b>				
Antimony <sup>e</sup>				
Arsenic <sup>e</sup>				
Barium <sup>e</sup>				
Beryllium <sup>e</sup>				
Cadmium <sup>e</sup>				
Chromium <sup>e</sup>				
Cobalt <sup>e</sup>				
Copper <sup>e</sup>				
Hexavalent Chromium <sup>e</sup>				
Manganese <sup>e</sup>				
Mercury <sup>e</sup>				
Molybdenum <sup>e</sup>				
Nickel <sup>e</sup>				
Phosphorus <sup>e</sup>				
Silver <sup>e</sup>				
Selenium <sup>e</sup>				
Thallium <sup>e</sup>				
Vanadium <sup>e</sup>				
Zinc <sup>e</sup>				

- a) Emission factors are from AP-42
- b) AP-42, Table 3.4-1, Gaseous Emission Factors for Large Stationary Diesel and All Stationary Dual Fuel Engines, 10/96
- c) AP-42, Table 3.4-3, Speciated Organic Compound Emission Factors for Large Uncontrolled Stationary Diesel Engines, Emission Factor Rating E, 10/96
- d) AP-42, Table 3.4-4, PAH Emission Factors for Large Uncontrolled Stationary Diesel Engines, Emission Factor Rating E, 10/96
- e) AP-42, Table 3.4-2, Particulate and Particle-Sizing Emission Factors for Large Uncontrolled Stationary Diesel Engines, Emission Factor Rating E, 10/96
- f) IDAPA Toxic Air Pollutant

TAPs lb/hr rates are 24-hr averages except for those in bold text. Lb/hr rates for bold TAPs (carcinogens) are annual averages.







Facility:  
11/12/2021 11:08

Facility Name  
Permit/Facility ID:

P-20XX.0XXX  
Project XXXXX XXX-XXXXX

**Greenhouse Gas Emissions when Combusting Natural Gas**

Water Heater #1 Emissions	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	120000	lb/MMscf	AP-42 Table 1.4-2	0.00	1	0.00
Methane	2.3	lb/MMscf	AP-42 Table 1.4-2	0.00E+00	21	0.00E+00
N <sub>2</sub> O	2.2	lb/MMscf	AP-42 Table 1.4-2	0.00E+00	310	0.00E+00

\* Water Heater #1 does not burn Natural Gas.

Water Heater #2 Emissions	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	120000	lb/MMscf	AP-42 Table 1.4-2	0.00	1	0.00
Methane	2.3	lb/MMscf	AP-42 Table 1.4-2	0.00E+00	21	0.00E+00
N <sub>2</sub> O	2.2	lb/MMscf	AP-42 Table 1.4-2	0.00E+00	310	0.00E+00

\* Water Heater #2 does not burn Natural Gas.

**Greenhouse Gas Emissions when Combusting #2 Diesel**

Water Heater #1 Emissions	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	Molecular conversion from C to CO <sub>2</sub>			0.00	1	0.00
Methane	1	lb/10 <sup>3</sup> gal	AP-42 Table 1.3-3	0.00E+00	21	0.00E+00
N <sub>2</sub> O	0.53	lb/10 <sup>3</sup> gal	AP-42 Table 1.3-8	0.00E+00	310	0.00E+00

\* Water Heater #1 does not burn Diesel.

Water Heater #2 Emissions	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	Molecular conversion from C to CO <sub>2</sub>			0.00	1	0.00
Methane	1	lb/10 <sup>3</sup> gal	AP-42 Table 1.3-3	0.00E+00	21	0.00E+00
N <sub>2</sub> O	0.53	lb/10 <sup>3</sup> gal	AP-42 Table 1.3-8	0.00E+00	310	0.00E+00

\* Water Heater #2 does not burn Diesel.

**Greenhouse Gas Emissions when Combusting LPG**

Water Heater #1 Emissions	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	14300	lb/10 <sup>3</sup> gal	AP-42 Table 1.5-1	0.00	1	0.00
Methane	0.9	lb/10 <sup>3</sup> gal	AP-42 Table 1.5-1	0.00E+00	21	0.00E+00
N <sub>2</sub> O	0.2	lb/10 <sup>3</sup> gal	AP-42 Table 1.5-1	0.00E+00	310	0.00E+00

\* Water Heater #1 does not burn Propane.

Water Heater #2 Emissions	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	14300	lb/10 <sup>3</sup> gal	AP-42 Table 1.5-1	0.00	1	0.00
Methane	0.9	lb/10 <sup>3</sup> gal	AP-42 Table 1.5-1	0.00E+00	21	0.00E+00
N <sub>2</sub> O	0.2	lb/10 <sup>3</sup> gal	AP-42 Table 1.5-1	0.00E+00	310	0.00E+00

\* Water Heater #2 does not burn Propane.

**Greenhouse Gas Emissions when Combusting Diesel Fuel**

Small Engine #1 Emissions ≤ 600 bhp	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	1.15	lb/bhp-hr	AP-42 Table 3.3-1	0.00	1	0.00

\* There are no engines at this facility.

Small Engine #2 Emissions ≤ 600 bhp	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	1.15	lb/bhp-hr	AP-42 Table 3.3-1	0.00	1	0.00

\* There is no second small engine at this facility.

Large Engine #1 Emissions > 600 bhp	Emission Factor (EF)	EF Units	EF Source	T/yr	Global Warming Potential	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	1.16	lb/bhp-hr	AP-42 Table 3.4-1	0.00	1	0.00

\* There is no large engine at this facility.

**Total Greenhouse Gas Emissions**

	CO <sub>2</sub> e (T/yr)
CO <sub>2</sub>	0.00
Methane	0.00
N <sub>2</sub> O	0.00
<b>Total<sup>1</sup></b>	<b>0</b>

Facility: 11/12/2021 11:08 Facility Name Permit/Facility ID: XXX-XXXX P-20XX.0XXX Project XXXXX

Max Hourly Production 30 cy/hr 82% T/hr is Aggregate = 25 cy/hr  
 Max Daily Production 100 cy/day 82% T/hr is Aggregate = 82 cy/day  
 Max Annual Production 5,000 cy/yr 82% T/hr is Aggregate = 4,100 cy/yr

Aggregate is considered both coarse and fine (sand). The 82% is 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

**Truck Mix Operations Drop Points, AP-42 11-12 (06/06)**

$E = k (0.0032) \times (U^a / M^b) + c =$  9.71E-02 3.88E-02 lb/ton for PM10 5.83E-03 lb/ton for PM2.5

k = particle size multiplier 0.8 for PM 0.32 for PM10 0.048 for PM2.5  
 a = exponent 1.75 for PM 1.75 for PM10 1.75 for PM2.5  
 b = exponent 0.3 for PM 0.3 for PM10 0.3 for PM2.5  
 c = constant 0.013 for PM 0.0052 for PM10 0.00078 for PM2.5  
 U = mean wind speed = 10 mph  
 M = moisture content = 6 %

Mean wind speed 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>).  
 Moisture Content: 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 Cement plant in Roanoke, VA, 1994. (AP-42 11-12 06/06).

Wind Category	Windspeed Variation Factors for AERMOD modeling:			PM10		PM2.5	
	Upper windspeed (m/sec)	Avg windspeed (m/sec)	Avg windspeed (mph)	E @ avg mph	F = Eavg mph/ E@10mph	E @ avg mph	mph/ E@10mph
Cat 1:	1.54	0.77	1.72	6.75E-03	0.1738	1.01E-03	0.1738
Cat 2:	3.09	2.32	5.18	1.58E-02	0.4077	2.38E-03	0.4077
Cat 3:	5.14	4.12	9.20	3.43E-02	0.8831	5.15E-03	0.8831
Cat 4:	8.23	6.69	14.95	7.32E-02	1.885	1.10E-02	1.885
Cat 5:	10.80	9.52	21.28	1.31E-01	3.382	1.97E-02	3.382
Cat 6:	14.00	12.40	27.74	2.06E-01	5.298	3.09E-02	5.298

**Central Mix Operations Drop Points, AP-42 11-12 (06/06)**

$E = k (0.0032) \times (U^a / M^b) + c =$  2.08E-03 1.23E-03 lb/ton for PM10 2.54E-04 lb/ton for PM2.5

k = particle size multiplier 0.19 for PM 0.13 for PM10 0.03 for PM2.5  
 a = exponent 0.95 for PM 0.45 for PM10 0.45 for PM2.5  
 b = exponent 0.9 for PM 0.9 for PM10 0.9 for PM2.5  
 c = constant 0.001 for PM 0.001 for PM10 0.0002 for PM2.5  
 U = mean wind speed = 10 mph  
 M = moisture content = 6 %

Mean wind speed 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>).  
 Moisture Content: 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

Wind Category	Windspeed Variation Factors for AERMOD modeling:			PM10		PM2.5	
	Upper windspeed (m/sec)	Avg windspeed (m/sec)	Avg windspeed (mph)	E @ avg mph	F = Eavg mph/ E@10mph	E @ avg mph	mph/ E@10mph
Cat 1:	1.54	0.77	1.72	1.11E-03	0.8964	2.24E-04	0.8938
Cat 2:	3.09	2.32	5.18	1.87E-03	1.5160	2.40E-04	0.9456
Cat 3:	5.14	4.12	9.20	2.13E-03	1.7261	2.52E-04	0.9922
Cat 4:	8.23	6.69	14.95	2.41E-03	1.949	2.65E-04	1.0422
Cat 5:	10.80	9.52	21.28	2.65E-03	2.146	2.76E-04	1.0860
Cat 6:	14.00	12.40	27.74	2.86E-03	2.315	2.85E-04	1.1238

**Conveyor and Scalping Screen Emission Points**

Moisture/Control %:  
 Aggregate for CBP typically stabilizes between 5-6% by weight--> Apply additional 25% control to lb/hr, etc. for the higher moisture.  
 Sand aggregate for CBPs is 36%  
 Coarse aggregate for CBPs is 46%

**Fine Aggregate (Sand) Transfer to Conveyor**

Transfer from truck to conveyor: 25 cy/hr 2 Transfer Points

Pollutant	Emission Factor Table 11.12-5 CONVEYOR TRANSFER PT CONTROLLED (lb/cy)	Emissions Per Transfer Point				Total Emissions			
		Emissions (lb/hr) 1-hr Average	Emissions (lb/hr) 24-hr Average	Emissions (T/yr)	Emissions (lb/hr) Annual Average	Emissions (lb/hr) 1-hr Average	Emissions (lb/hr) 24-hr Average	Emissions (T/yr)	Emissions (lb/hr) Annual Average
PM (total)	0.0015	0.012	0.002	9.98E-04	2.28E-04	0.024	0.003	2.00E-03	4.56E-04
PM-10 (total)	7.00E-04	0.006	0.001	4.66E-04	1.06E-04	0.011	0.002	9.32E-04	2.13E-04
PM-2.5 (total)	2.25E-04	0.002	0.000	1.50E-04	6.56E-04	0.004	0.000	3.00E-04	1.31E-03

0.186

**Coarse Aggregate Transfer to Conveyor**

Transfer from truck to conveyor: 25 cy/hr 2 Transfer Points

Pollutant	Emission Factor Table 11.12-5 CONVEYOR TRANSFER PT CONTROLLED (lb/cy)	Emissions Per Transfer Point				Total Emissions			
		Emissions (lb/hr) 1-hr Average	Emissions (lb/hr) 24-hr Average	Emissions (T/yr)	Emissions (lb/hr) Annual Average	Emissions (lb/hr) 1-hr Average	Emissions (lb/hr) 24-hr Average	Emissions (T/yr)	Emissions (lb/hr) Annual Average
PM (total)	0.0064	0.066	0.009	5.52E-03	1.26E-03	0.132	0.018	1.10E-02	2.52E-03
PM-10 (total)	3.10E-03	0.032	0.004	2.67E-03	6.10E-04	0.064	0.009	5.35E-03	1.22E-03
PM-2.5 (total)	9.60E-04	0.010	0.001	8.28E-04	3.63E-03	0.020	0.003	1.66E-03	7.25E-03

1.256

**Final Concrete Batch Plant Emissions Inventory**

Listed Below are the emissions estimates for the units selected.

<b>Company:</b>	Facility Name
<b>Facility ID:</b>	XXX-XXXXX
<b>Permit No.:</b>	P-20XX.0XXX Project XXXXX
<b>Source Type:</b>	Portable/Staionary Concrete Batch Plant
<b>Manufacturer/Model:</b>	XXX

**Production**

Maximum Hourly Production Rate:	30 cy/hr
Proposed Daily Production Rate:	100 cy/day
Proposed Maximum Annual Production Rate:	5000 cy/year

		Tons/year								
Emissions Units		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>	Truck Mix	0.02975	0.04987	NA	NA	NA	NA	2.85E-06		N/A
<b>Water Heater #1:</b>	No Water Heater	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00		0
<b>Water Heater #2:</b>	No Water Heater	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00		0
<b>Small Diesel Engine(s) *:</b>	No Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA		0
<b>Large Diesel Engine **:</b>	No Large Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA		0
<b>Annual Totals (T/yr)</b>		<b>0.02975</b>	<b>0.04987</b>	<b>0.00E+00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.85E-06</b>	<b>2.58E-05</b>	<b>0</b>

		Pounds/hour							
Emissions Units		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>	Truck Mix	0.04958	0.08311	NA	NA	NA	NA	8.31E-06	
<b>Water Heater #1:</b>	No Water Heater	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00	
<b>Water Heater #2:</b>	No Water Heater	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.00E+00	
<b>Small Diesel Engine(s) *:</b>	No Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA	
<b>Large Diesel Engine**:</b>	No Large Engine	0.00	0.00	0.00E+00	0.00	0.00	0.00	NA	
<b>Daily Totals (lb/hr)</b>		<b>0.0496</b>	<b>0.0831</b>	<b>0.00E+00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>8.31E-06</b>	<b>3.99E-05</b>

\* The Large engine may run :  
 \* The Small engine(s) may run :

There is no large engine. hr/yr  
 There is no small engine. hr/yr

HAPS & TAPS Emissions Inventory

Metals	HAP	TAP	lb/hr	T/yr	Averaging Period	EL lb/hr	Exceeded?	
Arsenic	X	X	5.12E-07	2.24E-06	Annual	1.50E-06	No	34.16%
Barium		X	0.00E+00	0.00E+00	24-hour	3.30E-02	No	0.00%
Beryllium	X	X	1.18E-08	5.16E-08	Annual	2.80E-05	No	0.04%
Cadmium	X	X	3.42E-08	1.50E-07	Annual	3.70E-06	No	0.92%
Cobalt	X	X	0.00E+00	0.00E+00	24-hour	3.30E-03	No	0.00%
Copper		X	0.00E+00	0.00E+00	24-hour	1.30E-02	No	0.00%
Chromium	X	X	4.63E-06	2.14E-06	24-hour	3.30E-02	No	0.01%
Manganese	X	X	1.84E-05	1.09E-05	24-hour	3.33E-01	No	0.01%
Mercury	X	X	0.00E+00	0.00E+00	24-hour	N/A	No	
Molybdenum (soluble)		X	0.00E+00	0.00E+00	24-hour	3.33E-01	No	0.00%
Nickel	X	X	5.32E-07	2.33E-06	Annual	2.70E-05	No	1.97%
Phosphorus	X	X	1.49E-05	7.09E-06	24-hour	7.00E-03	No	0.21%
Selenium	X	X	7.81E-07	4.68E-07	24-hour	1.30E-02	No	0.01%
Vanadium		X	0.00E+00	0.00E+00	24-hour	3.00E-03	No	0.00%
Zinc		X	0.00E+00	0.00E+00	24-hour	6.67E-01	No	0.00%
Chromium VI	X	X	1.06E-07	4.65E-07	Annual	5.60E-07	No	18.95%
<b>Non PAH Organic Compounds</b>								
Pentane		X	0.00E+00	0.00E+00	24-hour	118	No	0.00%
Methyl Ethyl Ketone	X	X	0.00E+00	0.00E+00	24-hour	39.3	No	0.00%
<b>Non-PAH HAPs</b>								
Acetaldehyde	X	X	0.00E+00	0.00E+00	Annual	3.00E-03	No	0.00%
Acrolein	X	X	0.00E+00	0.00E+00	24-hour	1.70E-02	No	0.00%
Benzene	X	X	0.00E+00	0.00E+00	Annual	8.00E-04	No	0.00%
1,3 - Butadiene	X	X	0.00E+00	0.00E+00	Annual	2.40E-05	No	0.00%
Ethyl Benzene	X	X	0.00E+00	0.00E+00	24-hour	29	No	0.00%
Formaldehyde	X	X	0.00E+00	0.00E+00	Annual	5.10E-04	No	0.00%
Hexane	X	X	0.00E+00	0.00E+00	24-hour	12	No	0.00%
Methyl Chloroform	X	X	0.00E+00	0.00E+00	24-hour	127	No	0.00%
Propionaldehyde	X	X	0.00E+00	0.00E+00	24-hour	2.87E-02	No	0.00%
Quinone	X	X	0.00E+00	0.00E+00	24-hour	2.70E-02	No	0.00%
Toluene	X	X	0.00E+00	0.00E+00	24-hour	25	No	0.00%
o-Xylene	X	X	0.00E+00	0.00E+00	24-hour	29	No	0.00%
<b>PAH HAPs</b>								
2-Methylnaphthalene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
3-Methylcholanthrene	X	X	0.00E+00	0.00E+00	Annual	2.50E-06	No	0.00%
7,12-Dimethylbenz(a)anthracene	X		0.00E+00	0.00E+00	N/A	N/A	N/A	
Acenaphthene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Acenaphthylene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Anthracene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Benzo(a)anthracene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Benzo(a)pyrene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
Benzo(b)fluoranthene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
Benzo(e)pyrene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
Benzo(g,h,i)perylene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Benzo(k)fluoranthene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
Chrysene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
Dibenzo(a,h)anthracene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
Dichlorobenzene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Fluoranthene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Fluorene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Indeno(1,2,3-cd)pyrene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
Naphthalene (24-hour)	X	X	0.00E+00	0.00E+00	24-hour	3.33	No	0.00%
Naphthalene (Annual)	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Perylene	X		0.00E+00	0.00E+00	N/A	N/A	N/A	
Phenanthrene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
Pyrene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No	0.00%
PAH HAPs Total	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%
7-PAH Group (586 listed TAP)	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No	0.00%

Total HAPs Emissions (lb/hr) and (T/yr): 3.99E-05 2.58E-05

Uncontrolled Criteria Pollutants

Source	PM10/PM2.5		SO2		NOx	CO
	lb/hr	T/yr	lb/hr	T/yr	T/yr	T/yr
Concrete Batch Plant	4.51E-02	1.98E-01	N/A	N/A	N/A	N/A
Water Heater #1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water Heater #2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Small Diesel Engine	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Large Diesel Engine	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Note: The emissions from the transfer drop points are the emissions from the material handling

VOC
T/yr
N/A
0.00E+00
0.00E+00
0.00E+00
0.00E+00



Facility:  
11/12/2021 11:08

Facility Name  
Permit P-20XX.0XXX Project XXXXX

Facility ID: XXX-XXXX

**Internal Combustion Engine > 600 hp (447 kW)**

Fuel Type Toggle =	0
Fuel Consumption Rate	0.00 gal/hr
Calculated MMBtu/hr	0.00 MMBtu/hr
Max Daily Operation	9 hr/day
Max Annual Operation	2,000 hrs/yr

**Rated Power of Large (hp): 0**

Not EPA Certified:	No
Certified EPA Tier 1:	No
Certified EPA Tier 2:	No
Certified EPA Tier 3:	No
Certified EPA Tier 4:	No
Blue Sky Engine:	No

**Small Internal Combustion Engine #1 < 600 hp (447 kW)**

Fuel Type Toggle =	0
Fuel Consumption Rate	0.00 gal/hr
Calculated MMBtu/hr	0.00 MMBtu/hr
Max Daily Operation	9 hr/day
Max Annual Operation	2,000 hrs/yr

**Rated Power of Small #1 (hp): 0**

Not EPA Certified:	No
Certified EPA Tier 1:	No
Certified EPA Tier 2:	No
Certified EPA Tier 3:	No
Certified EPA Tier 4:	No
Blue Sky Engine:	No

**Small Internal Combustion Engine #2 < 600 hp (447 kW)**

Fuel Type Toggle =	0
Fuel Consumption Rate	0.00 gal/hr
Calculated MMBtu/hr	0.00 MMBtu/hr
Max Daily Operation	9 hr/day
Max Annual Operation	2,000 hrs/yr

**Rated Power of Small #2 (hp): 0**

Not EPA Certified:	No
Certified EPA Tier 1:	No
Certified EPA Tier 2:	No
Certified EPA Tier 3:	No
Certified EPA Tier 4:	No
Blue Sky Engine:	No

**Conversion Factors:**

Avg brake-specific fuel consumption (BSFC) =	7000	Btu/hp-hr
1 hp =	0.746	kW
1 lb =	453.592	g

g/kW-hr x (lb/453g) x (hp-hr/7000 Btu) x (0.746 kW/hp) x 10<sup>6</sup> Btu/MMBtu = lb/MMBtu  
g/kW-hr x 0.23486 = lb/MMBtu

Pollutant:	NOx	VOC (total TOC--> VOCs)	CO	PM=PM10
<b>EMISSION FACTORS USED FOR SMALL ENGINE (lb/MMBtu):</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.000</b>
Pollutant:	NOx	VOC (total TOC--> VOCs)	CO	PM=PM10
<b>EMISSION FACTORS USED FOR LARGE ENGINE (lb/MMBtu):</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.000</b>

**AP-42, 3.4 (10/96) EMISSION FACTORS (diesel fueled, uncontrolled)**

Pollutant:	NOx	VOC (total TOC--> VOCs)	CO	PM10
Emission Factor (lb/MMBtu)	0	0	0.00	0
Emission Factor (g/kW-hr)	0.00	0.00	0.00	0.00

**AP-42, Ch 3.3 (10/96) EMISSION FACTORS (diesel fueled, uncontrolled)**

Pollutant:	NOx	VOC (total TOC--> VOCs)	CO	PM10
Emission Factor (lb/MMBtu)	4.41	0.36	0.95	0.31
Emission Factor (g/kW-hr)	18.78	1.53	4.05	1.32

Note: Rating for AP-42 PM10 EF of 0.0573 is "E" or Poor. Used Tier 1 PM EF and presumed PM = PM10

**40 CFR 89 and 1039, EPA CERTIFIED GENERATOR EMISSION FACTORS (g/kW-hr converted to lb/MMBtu)**

Rated Power (kW)	Tier	Applicable?	Model Year <sup>1</sup>	NOx	HC	NMHC + NOx	CO	PM = PM10
kW < 8	1	0	2000	0.0	0.36	2.47	1.88	0.23
kW < 8	2	0	2005	0.00	0.36	1.76	1.88	0.19
kW < 8	4	0	2008	0.00	0.36	1.76	1.88	0.09
kW < 8	BlueSky	0	n/a	0.00	0.36	1.08	1.88	0.11
8 ≤ kW < 19	1	0	2000	0.00	0.36	2.23	1.55	0.19
8 ≤ kW < 19	2	0	2005	0.00	0.36	1.76	1.55	0.19
8 ≤ kW < 19	4	0	2008	0.00	0.36	1.76	1.55	0.09
8 ≤ kW < 19	BlueSky	0	n/a	0.00	0.36	1.06	1.55	0.11
19 ≤ kW < 37	1	0	1999	0.00	0.36	2.23	1.29	0.19
19 ≤ kW < 37	2	0	2004	0.00	0.36	1.76	1.29	0.14
19 ≤ kW < 37	4	0	2008	0.00	0.36	1.10	1.29	0.007
19 ≤ kW < 37	BlueSky	0	n/a	0.00	0.36	1.06	1.29	0.085
37 ≤ kW < 75	1	0	1998	2.16	0.36	0.00	---	---
37 ≤ kW < 75	2	0	2004	0.00	0.36	1.76	1.17	0.09
37 ≤ kW < 75	3	0	2008	0.00	0.36	1.10	1.17	0.09
37 ≤ kW < 75	4	0	2008	0.00	0.36	1.10	1.17	0.007
37 ≤ kW < 75	BlueSky	0	n/a	0.00	0.36	1.10	1.17	0.056
75 ≤ kW < 130	1	0	1997	2.16	0.36	0.00	---	---
75 ≤ kW < 130	2	0	2003	0.00	0.36	1.55	1.17	0.07
75 ≤ kW < 130	3	0	2007	0.00	0.36	0.94	1.17	0.07
75 ≤ kW < 130	4	0	2008	0.09	0.04	0.00	1.17	0.005
75 ≤ kW < 130	BlueSky	0	n/a	0.00	0.36	0.94	1.17	0.042
130 ≤ kW < 225	1	0	1996	2.16	0.31	0.00	2.68	0.13
130 ≤ kW < 225	2	0	2003	0.00	0.31	1.55	0.82	0.05
130 ≤ kW < 225	3	0	2006	0.00	0.31	0.94	0.82	0.05
130 ≤ kW < 225	4	0	2008	0.09	0.04	0.00	0.82	0.005
130 ≤ kW < 225	BlueSky	0	n/a	0.00	0.31	0.94	0.82	0.028
225 ≤ kW < 450	1	0	1996	2.16	0.31	0.00	2.68	0.13
225 ≤ kW < 450	2	0	2001	0.00	0.31	1.50	0.82	0.05
225 ≤ kW < 450	3	0	2006	0.00	0.31	0.94	0.82	0.05
450 ≤ kW < 560	1	0	1996	2.16	0.31	0.00	2.68	0.13
450 ≤ kW < 560	2	0	2002	0.00	0.31	1.50	0.82	0.05
450 ≤ kW < 560	3	0	2006	0.00	0.31	0.94	0.82	0.05
kW > 560	1	0	2000	2.16	0.31	0.00	2.68	0.13
kW > 560	2	0	2006	0.00	0.31	1.50	0.82	0.05
kW > 560	BlueSky	0	n/a	0.00	0.31	0.89	0.82	0.028

40 CFR 89 and 1039, EPA CERTIFIED GENERATOR EMISSION FACTORS FOR LARGE ENGINE (lb/MMBtu)

Rated Power (kW)	Tier	Applicable?	Model Year <sup>1</sup>	NOx	HC	NMHC + NOx	CO	PM10
kW < 8	1	0	2000	0.00	0.00	0.00	0.00	0.00
kW < 8	2	0	2005	0.00	0.00	0.00	0.00	0.00
kW < 8	4	0	2008	0.00	0.00	0.00	0.00	0.00
kW < 8	BlueSky	0	n/a	0.00	0.00	0.00	0.00	0.00
8 < kW < 19	1	0	2000	0.00	0.00	0.00	0.00	0.00
8 < kW < 19	2	0	2005	0.00	0.00	0.00	0.00	0.00
8 < kW < 19	4	0	2008	0.00	0.00	0.00	0.00	0.00
8 < kW < 19	BlueSky	0	n/a	0.00	0.00	0.00	0.00	0.00
19 < kW < 37	1	0	1999	0.00	0.00	0.00	0.00	0.00
19 < kW < 37	2	0	2004	0.00	0.00	0.00	0.00	0.00
19 < kW < 37	4	0	2008	0.00	0.00	0.00	0.00	0.00
19 < kW < 37	BlueSky	0	n/a	0.00	0.00	0.00	0.00	0.00
37 < kW < 75	1	0	1998	0.00	0.00	0.00	0.00	0.00
37 < kW < 75	2	0	2004	0.00	0.00	0.00	0.00	0.00
37 < kW < 75	3	0	2008	0.00	0.00	0.00	0.00	0.00
37 < kW < 75	4	0	2008	0.00	0.00	0.00	0.00	0.00
37 < kW < 75	BlueSky	0	n/a	0.00	0.00	0.00	0.00	0.00
75 < kW < 130	1	0	1997	0.00	0.00	0.00	0.00	0.00
75 < kW < 130	2	0	2003	0.00	0.00	0.00	0.00	0.00
75 < kW < 130	3	0	2007	0.00	0.00	0.00	0.00	0.00
75 < kW < 130	4	0	2008	0.00	0.00	0.00	0.00	0.00
75 < kW < 130	BlueSky	0	n/a	0.00	0.00	0.00	0.00	0.00
130 < kW < 225	1	0	1996	0.00	0.00	0.00	0.00	0.00
130 < kW < 225	2	0	2003	0.00	0.00	0.00	0.00	0.00
130 < kW < 225	3	0	2006	0.00	0.00	0.00	0.00	0.00
130 < kW < 560	4	0	2008	0.00	0.00	0.00	0.00	0.00
130 < kW < 560	BlueSky	0	n/a	0.00	0.00	0.00	0.00	0.00
225 < kW < 450	1	0	1996	0.00	0.00	0.00	0.00	0.00
225 < kW < 450	2	0	2001	0.00	0.00	0.00	0.00	0.00
225 < kW < 450	3	0	2006	0.00	0.00	0.00	0.00	0.00
450 < kW < 560	1	0	1996	0.00	0.00	0.00	0.00	0.00
450 < kW < 560	2	0	2002	0.00	0.00	0.00	0.00	0.00
450 < kW < 560	3	0	2006	0.00	0.00	0.00	0.00	0.00
kW > 560	1	0	2000	0.00	0.00	0.00	0.00	0.00
kW > 560	2	0	2006	0.00	0.00	0.00	0.00	0.00
kW > 560	BlueSky	0	n/a	0.00	0.00	0.00	0.00	0.00

2.14E-06
1.09E-05
7.09E-06
4.68E-07
2.24E-06
5.16E-08
1.50E-07
4.65E-07
2.33E-06

2.58E-05

## **APPENDIX B – PROCESSING FEE**

## PTC Processing Fee Calculation Worksheet

**Instructions:**

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

**Company:** Incredible Concrete - 00629  
**Address:** 4294 S 4000 E  
**City:** Franklin  
**State:** Idaho  
**Zip Code:** 83237  
**Facility Contact:** Kyle Chatterton  
**Title:** Owner  
**AIRS No.:** 327320

- Y** Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
- Y** Did this permit require engineering analysis? Y/N
- N** Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO <sub>x</sub>	0.0	0	0.0
SO <sub>2</sub>	0.0	0	0.0
CO	0.0	0	0.0
PM10	0.05	0	0.05
VOC	0.0	0	0.0
<b>Total:</b>	0.0	0	<b>0.05</b>
Fee Due	<b>\$ 500.00</b>		

Comments: