

Statement of Basis

Concrete Batch Operations General Permit

**Pocatello Ready Mix, Inc.
American Falls Ready Mix
American Falls, Idaho
Facility ID No. 077-00034**

**Permit to Construct P-2013.0003
Project No. 61145**

**February 28, 2013
Darrin Pampaian, P.E.
Permit Writer**

D.P.

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.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE	2
FACILITY INFORMATION	4
Description	4
Permitting History	4
Application Scope	4
Application Chronology	4
TECHNICAL ANALYSIS	5
Emissions Units and Control Devices	5
Emissions Inventories	6
Ambient Air Quality Impact Analyses	7
REGULATORY ANALYSIS	8
Attainment Designation (40 CFR 81.313)	8
Permit to Construct (IDAPA 58.01.01.201).....	8
Tier II Operating Permit (IDAPA 58.01.01.401)	8
Visible Emissions (IDAPA 58.01.01.625).....	8
Rules For Control of Fugitive Dust (IDAPA 650-651).....	8
Rules For Control of Odors (IDAPA 58.01.01.775-776).....	8
Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70).....	8
PSD Classification (40 CFR 52.21 and IDAPA 205).....	8
NSPS Applicability (40 CFR 60)	8
NESHAP Applicability (40 CFR 61)	9
MACT Applicability (40 CFR 63)	9
CAM Applicability (40 CFR 64).....	9
Permit Conditions Review	9
PUBLIC REVIEW	14
Public Comment Opportunity	14
APPENDIX A – EMISSIONS INVENTORIES	
APPENDIX B – PERMIT FEES	

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

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

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

FACILITY INFORMATION

Description

American Falls Ready Mix is a truck 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 truck along with a measured amount of water for in-transit mixing of the concrete. Electrical power will be supplied to the facility by the local power grid. Also, water heater(s) may be used to heat the water in cold weather prior to use for the mixing of concrete.

Permitting History

This is the initial PTC for a new facility thus there is no permitting history.

Application Scope

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

Application Chronology

January 17, 2013	A PTC application and combined application and processing fee (\$1,500) were received.
Jan. 30 – Feb. 14, 2013	A 15-day opportunity for a public comment period was held. No requests for a public comment period were received.
January 29, 2013	P-2013.0003 project 61145 application was deemed complete.
February 28, 2013	Final permit and statement of basis were issued.

TECHNICAL ANALYSIS

Emissions Units and Control Devices

Table 1 CONCRETE BATCH PLANT AND CONTROL DEVICE INFORMATION^a

Emissions Unit Description	Control Device Description	Emissions Discharge Point ID No. and/or Description
<p><u>Concrete Batch Plant – Truck Mix</u> Manufacturer: Belgrade Steel Tank Co., Inc. Model: 12 Yd Accumulative Maximum capacity: 100 cy/hr Maximum production: 500 cy/day</p>	<p><u>Cement Storage Silo Baghouse No. 1^b:</u> Manufacturer: Belgrade Steel Tank Co., Inc. Model: 225 sq. ft. Dust Collector 18 bags, 6' x 0.67' baghouse</p> <p><u>Cement Supplement Storage Silo Flyash Baghouse No. 2^b:</u> Manufacturer: Belgrade Steel Tank Co., Inc. Model: 225 sq. ft. Dust Collector 18 bags, 6' x 0.67' baghouse</p> <p><u>Weigh Batcher Baghouse:</u> Manufacturer: Belgrade Steel Tank Co., Inc. Model: 16 sq. ft. Dust Vent 4 bags, 2' x 0.67' baghouse</p> <p><u>Load-out Shroud:</u> Boot or shroud</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: 53 feet Exit diameter: 3.67 feet Exit air flow rate: 650 acfm Exit Temperature: Ambient Control efficiency: 99%</p> <p><u>Baghouse No. 2 stack</u> Stack height: 51 feet Exit diameter: 3.67 feet Exit air flow rate: 650 acfm Exit Temperature: Ambient Control efficiency: 99%</p> <p><u>Weigh Batcher Baghouse:</u> Stack height: 31 feet Exit diameter: 1' x 3' x 2' Exit air flow rate: 40 acfm Exit Temperature: Ambient Control efficiency: 99%</p> <p><u>Load-out Boot:</u> Control efficiency: 95%</p> <p><u>Materials Transfer:</u> Control Efficiency: 75%</p>

- a. Note that this table is for informational purposes only and the actual operation at the facility may deviate slightly.
- b. Both the storage silo baghouse and supplement storage silo flyash baghouse are considered process equipment and therefore there is no associated control efficiency. Controlled PM₁₀ emission factors were used when determining PTE and for modeling purposes.

Emissions Inventories

The emissions inventory for this 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: 100 cy per hour concrete production capacity and concrete production limits of 500 cy per day and 100,000 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 5.0 MMBtu/hr diesel-fired water heater and a 1,340 bhp diesel-fired internal combustion engine 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_{2.5} and PM₁₀ from batch plant material transfer points were assumed to be controlled by manual water sprays, sprinklers, or spray bars, or an equivalent method (e.g., enclosing the entire process inside a building) that reduce the emissions by an estimated 75%. The assumed 75% control efficiency is based on the Western Regional Air Partnership Fugitive Dust Handbook. According to the Handbook, water suppressant of material handling can range from 50-90% control. Assuming the average of 70% and including another 5% due to Best Management Practices required by the permit allow for 75% control to be a conservative estimate.

Aggregate is washed before delivery to the batch plant site, and water is used on-site to control the temperature of the aggregate. Particulate matter and PM₁₀ emissions from the weigh batcher transfer point are controlled by a baghouse/cartridge, and truck mix load-out emissions are controlled by a boot. Capture efficiency of the truck mix load-out boot or equivalent was estimated at 95%.

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 95% 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/flyash. 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 Transfer Points

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

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

Where:

k = particle size multiplier

a = exponent

b = exponent

c = constant

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

U = mean wind speed

M = moisture content

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

Table 2 FACILITY WIDE CRITERIA POLLUTANT EMISSION ESTIMATES

Emissions Unit	PM _{2.5} T/yr	PM ₁₀ T/yr	SO ₂ T/yr	NO _x T/yr	CO T/yr	VOC T/yr	Lead T/yr	CO2e T/yr
Concrete Batch Plant	0.21	0.21	--	--	--	--	9.49E-06	--
Transfer Points	0.19	0.19	--	--	--	--	--	--
Total	0.40	0.40						

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

DEQ's modeling group reviewed the permit application forms and it appears the potential/allowable emissions of PM₁₀ and PM_{2.5} are below established DEQ modeling thresholds. The modeling thresholds are as follows:

- PM_{2.5} 24-hour = 0.054 lb/hr (daily rate divided by 24);
- PM_{2.5} annual = 0.0799 lb/hr (annual rate divided by 8,760);
- PM₁₀ 24-hour = 0.22 lb/hr (daily rate divided by 24).

Since emissions are below modeling thresholds, no additional analyses are needed to demonstrate that emissions associated with the project will not cause or significantly contribute to a violation of NAAQS.

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

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

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

Visible Emissions (IDAPA 58.01.01.625)

The sources of PM₁₀ emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Condition 6.

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

All sources of fugitive dust emissions at the facility are subject to the State of Idaho rules for controlling fugitive dust. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne. This requirement is assured by Permit 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 8 and 9.

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

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

PSD Classification (40 CFR 52.21 and IDAPA 205)

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

NSPS Applicability (40 CFR 60)

The facility is not subject to the requirements of 40 CFR 60 Subpart Dc – 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 because there are not engines on site.

NESHAP Applicability (40 CFR 61)

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

MACT Applicability (40 CFR 63)

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

Area source MACT requirements that would apply to the IC engines include Subpart ZZZZ:

40 CFR 63, Subpart ZZZZ.....National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines

American Falls Ready Mix is not subject to this subpart as there are no engines onsite.

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

Fugitive Dust Control

Permit Condition 3.

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 4.

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 5.

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 6.

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 7.

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 8.

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

Permit Condition 9.

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

Nonattainment Areas

Permit Condition 10.

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 11.

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.

Concrete Batch Plant

Description

Permit Condition 12.

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

Permit Condition 13.

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

Operating Requirements

Permit Condition 14.

Limits the finished concrete production for any future site.

Permit Condition 15.

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 16.

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 17.

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.

Permit Condition 18.

Truck loadout emissions must be controlled to a minimum of 95% efficiency. This is achieved by requiring a shroud or boot enclosure.

Monitoring & Recordkeeping Requirements

Permit Condition 19.

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

General Provisions

General Compliance

Permit Condition 20.

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 21.

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 22.

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 23.

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 24.

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 25.

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 26.

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 27.

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 28.

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 29.

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 30.

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 31.

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 32.

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 33.

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 34.

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 35.

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 INVENTORIES

Data Entry Form

Facility Information

Company:	American Falls Ready Mix
Facility ID:	077-00034
Permit No.:	P-2013.0003
Source Type:	Portable Concrete Batch Plant
Manufacturer/Model:	Belgrade Steel Tank Co., Inc.

Production Rates

Maximum Hourly Production Rate:	100		
Proposed Daily Production Rate:	500	cy/day	5.00
Proposed Maximum Annual Production Rate:	100,000	cy/year	hr/day

Concrete Batch Plant Specifications

Is the facility a Truck Mix (T) or Central mix (C)?	T
What level of Control is used for loadout, either Truck or Central?	95%
What level of Control is used for fugitive emissions?	75%

Boiler Usage

Does this facility use a boiler?	No
What type of boiler, Diesel or Natural Gas?	N/A

Remember to Select N/A

Internal Combustion Engine(s)

Do you have an internal combustion engine?	No
One (1) large engine of greater than 600 bhp may be used.	0
One (1) small engine of less than or equal to 600 bhp may be used.	0

Set the number of hours

No further input is necessary

Note: Enter the number zero (0) if there is no small or large engine and enter -1 for the certification

	Large	Small
Select the EPA Certification:	0	0
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		

Enter the number of operating hours for the small engine	0
The number of operating hours for the larger engine are:	0

Transfer Points

Enter the number of transfer points in the facility? (2 is the default)	3
---	---

CRITERIA POLLUTANT EMISSION INVENTORY for Portable Concrete Batch Plant

2/21/13 7:18

Facility Information		Assumptions Implied or Stated in Application:	
Company:	American Falls Ready Mix	See control assumptions	
Facility ID:	077-00034	Truck Mix (T) or Central Mix (C)? <input type="checkbox"/> T	
Permit No.:	P-2013.0003		
Source Type:	Portable Concrete Batch Plant		
Manufacturer/Model:	Belgrade Steel Tank Co., Inc.		

INCREASE IN Production¹

Maximum Hourly Production Rate:	100	cy/hr	
Proposed Daily Production Rate:	500	cy/day	5.00
Proposed Maximum Annual Production Rate:	100,000	cy/year	
Cement Storage Silo Capacity:	4540	ft ³ 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	

Per manufacturer
Hours of operation per day at max capacity

DEQ EI VERIFICATION WORKSHEET v. 012010
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.

Change in PM₁₀ Emissions due to this PTC

Emissions Point	PM ₁₀ Emission Factor ¹ (lb/cy)		Controlled Emission Rate, Max.	Controlled Emission Rate, 24-hour average		Controlled Emission Rate, annual average		Control Assumptions:
	Controlled	Uncontrolled	lb/hr ²	lb/hr ³	lb/day ³	lb/hr ⁴	T/yr ⁴	
Aggregate delivery to ground storage		0.0031	0.08	0.016	0.39	0.009	0.039	75% Water Sprays at Operator's Discretion
Sand delivery to ground storage		0.0007	0.02	0.004	0.09	0.002	0.009	75% Water Sprays at Operator's Discretion
Aggregate transfer to conveyor		0.0031	0.08	0.016	0.39	0.009	0.039	75% Water Sprays at Operator's Discretion
Sand transfer to conveyor		0.0007	0.02	0.004	0.09	0.002	0.009	75% Water Sprays at Operator's Discretion
Aggregate transfer to elevated storage		0.0031	0.08	0.016	0.39	0.009	0.039	75% Water Sprays at Operator's Discretion
Sand transfer to elevated storage		0.0007	0.02	0.004	0.09	0.002	0.009	75% Water Sprays at Operator's Discretion
Cement delivery to Silo (controlled EF)	0.0001		8.35E-03	1.74E-03	4.17E-02	9.53E-04	4.17E-03	0.00% Baghouse is process equipment, use controlled EF
Cement supplement delivery to Silo (controlled EF)	0.0002		1.79E-02	3.73E-03	8.94E-02	2.04E-03	8.94E-03	0.00% Baghouse is process equipment, use controlled EF
Weigh hopper loading (sand & aggregate batcher loading)		0.0040	3.95E-03	8.23E-04	1.98E-02	4.51E-04	1.98E-03	99.0% Sealed boot (vents back to silo) or baghouse.
Truck mix loading, Table 11.12-2, "0.278 lb/ton of cement+flyash" x ((491 lb cement + 73 lb flyash)/cy concrete) / 2000 lb = 0.0784 lb/cy		0.0784	0.39	0.08	1.98	0.04	0.20	95.0% Boot, enclosure, or equivalent or baghouse or boot w/water ring
Central mix loading, Table 11.12-2, "0.134 lb/ton of cement+flyash" x ((491 lb cement + 73 lb flyash)/cy concrete) / 2000 lb = 0.0378 lb/cy		0.0000	0.00	0.00	0.00	0.00	0.00	99.0% Baghouse control
Point Sources Total Emissions		8.26E-02	4.22E-01	8.79E-02	2.11E+00	4.82E-02	2.11E-01	
Process Fugitive Emissions		0.0114	0.29	0.06	1.43	0.03	0.14	
Facility Wide Total: Point Sources + Process Fugitives (Except for Road Dust and Windblown Dust)		0.0940	0.71	0.15	3.54	0.08	0.35	

POINT SOURCE EMISSIONS for FACILITY CLASSIFICATION⁶

Controlled EF	at	876,000 cy/yr	T/yr
Facility Classification Total PM ⁵	8.40E-03		3.68E+00
Facility Classification Total PM10 ^{5,7}	4.21E-03		1.85E+00

¹ The EFs were calculated using EFs in lb/ton of material handled from Table 11.12-2, typical composition per cubic yard of concrete (1865 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.

² Max. hourly rate includes reductions associated with control assumptions.

³ 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.

⁴ Annual average hourly emissions rate = EF (lb/cy) x proposed annual production rate (cy/yr) / (8760 hr/yr).

⁵ Annual emissions rate = EF (lb/cy) x proposed annual production rate (cy/yr) / (2000 lb/T)

⁶ 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)

⁷ Emissions for Facility Classification are based on baghouses as process equipment, 24-hr day, 8760 hr/yr =

2,400 cy/day, and

876,000 cy/yr

⁷ Emissions for Facility Classification do not include truck mix loading emissions; this is typically considered a fugitive emission source for concrete batch plants.

Lead emissions

Emissions Point	Lead Emission Factor ¹ (lb/ton of material loaded)		Increase in Emissions from this PTC				Emissions for Facility Classification	
	Controlled with fabric filter	Uncontrolled	Emission Rate, Max.	Emissions for Comparison with DEQ Modeling Threshold		Emission Rate, Quarterly Avg.		T/yr
			lb/hr, 1-hr avg. ²	lb/month ³	T/yr ⁴	lb/hr qtrly avg. ⁵		
Cement delivery to silo ²	1.09E-08	7.36E-07	2.68E-07	4.07E-05	2.68E-04	5.57E-08	Point Source	1.17E-06
Cement supplement delivery to Silo ³	5.20E-07	ND	1.90E-06	2.89E-04	1.90E-03	3.95E-07	Point Source	8.31E-06
Truck Loadout (with 99.9% control) ⁷		3.62E-06	5.10E-06	7.76E-04	5.10E-03	1.08E-06	Fugitive	2.24E-05
Central Mix (with 99.9% control)		0.00E+00	0.00E-00	0.00E+00	0.00E+00	0.00E+00	Fugitive	0.00E+00
Total			7.27E-06	1.11E-03	0.007		Point Sources	9.49E-06
DEQ Modeling Threshold			100	0.8				
Modeling Required?			No	No				

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

² Max. hourly rate = EF x pound of cement/cy³ of concrete x max. hourly concrete production rate/(2000 lb/T)

³ lb/mo = EF x pound of material/cy³ of concrete x max. daily concrete production rate x (365/12)/(2000 lb/T)

⁴ T/yr = EF x pound of material/cy³ of concrete x max. annual concrete production rate/(2000 lb/T)

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

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

2/21/2013 7:19

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:

Coarse aggregate	1865 pounds
Sand	1428 pounds
Cement	491 pounds
Supplement	79 pounds
Water	20 gallons
Concrete	4024 pounds

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

DEC EI VERIFICATION WORKSHEET Version 03/2007
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.

Increase in Production

Maximum Hourly Production Rate:	100 c/yhr
Proposed Daily Production Rate:	500 c/day
Proposed Maximum Annual Production Rate:	100,000 c/year

Uncontrolled (Unlimited Production Rate)

2,400 c/day	24 hrs/day,
876,000 c/year	7 day/wk,
	52 wks/year

TAP Emission Factors from AP-42, Table 11.12-9 (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	Percent of total Cr that is Cr(VI)	
Cement delivery to silo (with baghouses)	4.24E-08	1.06E-06	4.86E-10	1.78E-06	4.86E-10	2.39E-07	2.90E-08	2.39E-07	1.17E-07	2.02E-04	4.18E-08	1.74E-05	1.18E-05	ND	ND	ND	20%	
Cement supplement delivery to Silo (with baghouses)	1.00E-06	ND	9.04E-08	ND	1.98E-08	ND	1.22E-06	ND	2.56E-07	ND	2.28E-06	ND	3.54E-06	ND	7.24E-08	ND	30%	
Truck Loadout (with baghouses)	3.04E-06	1.04E-07	3.04E-06	1.04E-07	3.04E-06	1.04E-07	3.04E-06	1.04E-07	3.04E-06	1.04E-07	3.04E-06	1.04E-07	3.04E-06	1.04E-07	3.04E-06	1.04E-07	21.29%	
Central Mix Batching (NO F-304 or F-404)	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	21.29%	

UNCONTROLLED TAP EMISSIONS

Note: Includes baghouses as process equipment.

Emissions Point	Arsenic		Beryllium		Cadmium		Chromium		Manganese		Nickel		Phosphorus		Selenium		Chromium VI	
	lb/yr annual avg.	Tyr ^a	lb/yr annual avg.	Tyr	lb/yr annual avg.	Tyr	lb/yr 24-hr avg.	Tyr ^b	lb/yr 24-hr avg.	Tyr	lb/yr annual avg.	Tyr	lb/yr 24-hr avg.	Tyr	lb/yr 24-hr avg.	Tyr	lb/yr annual avg.	Tyr
Cement delivery to silo (with baghouses)	1.04E-07	4.86E-07	1.19E-08	5.29E-08	1.19E-08	5.29E-08	7.12E-07	2.71E-05	2.87E-06	1.28E-05	1.03E-08	4.48E-06	1.27E-03	ND	ND	1.42E-07		
Cement supplement delivery to Silo (with baghouses)	3.85E-06	1.80E-05	3.30E-07	1.45E-06	7.23E-08	3.17E-07	4.48E-06	1.95E-05	9.34E-07	4.09E-06	8.32E-06	3.65E-05	5.68E-05	2.64E-07	1.16E-06	1.34E-06		
Truck Loadout (with baghouses)	8.57E-05	3.75E-04	6.88E-06	3.01E-05	9.64E-07	4.22E-06	3.21E-04	1.41E-03	1.73E-03	7.58E-03	3.36E-04	1.47E-03	1.08E-03	4.74E-03	7.39E-05	3.24E-04	6.85E-05	
Central Mix Batching (NO F-304 or F-404)	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Sources Total	8.68E-05	3.82E-04	7.22E-06	3.16E-05	1.95E-06	4.58E-06	3.27E-04	1.45E-03	1.73E-03	7.58E-03	3.48E-04	1.51E-03	1.38E-03	6.07E-03	7.41E-05	3.25E-04	6.89E-05	
IDAPA Screening EL (lb/yr)	1.50E-06	ND	2.80E-05	ND	3.70E-06	ND	3.30E-02	ND	3.33E-01	ND	2.70E-05	ND	7.00E-03	ND	1.30E-02	ND	5.80E-07	
EXCEEDS EL?	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	Yes	

CONTROLLED TAP EMISSIONS

Note: Includes baghouses as process equipment.

Emissions Point	Arsenic		Beryllium		Cadmium		Chromium		Manganese		Nickel		Phosphorus		Selenium		Chromium VI	
	lb/yr annual avg.	Tyr ^a	lb/yr annual avg.	Tyr	lb/yr annual avg.	Tyr	lb/yr 24-hr avg.	Tyr ^b	lb/yr 24-hr avg.	Tyr	lb/yr annual avg.	Tyr	lb/yr 24-hr avg.	Tyr	lb/yr 24-hr avg.	Tyr	lb/yr annual avg.	Tyr
Cement delivery to silo (with baghouses)	1.18E-08	5.20E-08	1.36E-09	5.97E-08	1.36E-09	5.97E-08	1.48E-07	3.58E-07	5.88E-07	1.44E-06	1.17E-07	5.13E-07	ND	ND	ND	1.63E-08		
Cement supplement delivery to Silo (with baghouses)	4.17E-07	1.83E-06	3.77E-08	1.65E-07	6.25E-09	3.61E-08	6.24E-08	2.23E-06	1.31E-06	4.67E-07	9.50E-07	4.18E-06	1.81E-05	6.46E-06	5.51E-08	1.32E-07	1.53E-07	
Truck Loadout (with baghouses)	4.89E-07	2.14E-06	3.93E-08	1.72E-07	5.50E-09	2.41E-08	3.38E-06	6.04E-06	1.80E-05	4.31E-05	1.92E-06	8.39E-06	1.13E-05	2.71E-05	7.70E-07	1.85E-06	3.91E-07	
Sources Total	9.18E-07	4.02E-06	7.83E-08	3.43E-07	1.51E-08	6.62E-08	9.74E-06	1.08E-05	1.99E-05	4.50E-05	2.98E-06	1.31E-05	2.94E-05	3.35E-05	8.28E-07	1.98E-06	5.59E-07	
IDAPA Screening EL (lb/yr)	1.50E-06	ND	2.80E-05	ND	3.70E-06	ND	3.30E-02	ND	3.33E-01	ND	2.70E-05	ND	7.00E-03	ND	1.30E-02	ND	5.80E-07	
Percent of EL EXCEEDS EL?	61.18%	ND	0.41%	ND	0.41%	ND	0.03%	ND	0.00833%	ND	11.05%	ND	0.42%	ND	0.0833%	ND	99.81%	
1 lb/yr, annual average = EF x pound of cement / Yd ³ of concrete x annual concrete production rate / 2000lb/Ton / 24 hr/day																		
2 lb/yr, annual average = EF x pound of cement supplement / Yd ³ of concrete x annual concrete production rate / 2000lb/Ton / 24 hr/day																		
3 lb/yr, annual average = EF x pound of cement / Yd ³ of concrete x annual concrete production rate / 2000lb/Ton / 8760 hr/yr																		
4 Tyr = lb/yr, annual avg = EF x pound of cement supplement / Yd ³ of concrete x annual concrete production rate / 2000lb/Ton / 8760 hr/yr																		
5 Tyr = lb/yr, annual avg = EF x pound of cement supplement / Yd ³ of concrete x annual concrete production rate / 2000lb/Ton / 8760 hr/yr																		
6 Tyr = 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)

Enter 0 in the hr/day and hr/yr cells if there is no natural gas boiler

Operating Assumptions: 5 MMBtu/hr / 1,020 MMBtu/MMscf = 4.90E-03 MMscf/hr
 0 hr/day
 0 hr/yr

Fuel Use: 0.000 MMscf/day
 0.000 MMscf/year

Criteria Air Pollutants	Emission Factor	Emissions		CBP + Boiler Emissions	Modeling Threshold	Modeling Required ?	Modeling Threshold	Modeling Required?
		lb/MMscf	lb/hr					
NO2	100	4.90E-01	0.00E+00	0.00E+00	1 T/yr	No	7 T/yr	No
CO	84	4.12E-01	0.00E+00	0.00E+00	14 lb/hr	No	70 lb/hr	No
PM10	7.8	3.73E-02	0.00E+00	2.11E-01	0.2 lb/hr	No	0.9 lb/hr	No
SOx	0.6	3.73E-02	0.00E+00	0.00E+00	1 T/yr	No	7 T/yr	No
		2.94E-03	0.00E+00	0.00E+00	0.2 lb/hr	No	0.9 lb/hr	No
		2.94E-03	0.00E+00	0.00E+00	1 T/yr	No	7 T/yr	No
VOC	5.5	2.70E-02	0.00E+00	0.00E+00	40 T/yr	No		
Lead	0.0005	2.45E-06	0.00E+00	7.27E-03	0.6 T/yr	No		
Lead, continued			5.37E-03	lb/quarter	10 lb/mo	No		
TOTAL			0.00E+00	T/yr				

Note: 100 lb/mo Pb in guidance reduced by factor of 10 based on latest Pb NAAQS (reduced in 2006 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)	
PAH HAPs					
2-Methylnaphthalene	2.40E-05	0.00E+00	0.00E+00	9.10E-05	No
3-Methylchloranthrene	1.80E-06	0.00E+00	0.00E+00	2.50E-06	No
Acenaphthene	1.80E-06	0.00E+00	0.00E+00	9.10E-05	No
Acenaphthylene	1.80E-06	0.00E+00	0.00E+00	9.10E-05	No
Anthracene	2.40E-06	0.00E+00	0.00E+00	9.10E-05	No
Benzo(a)anthracene	1.80E-06	0.00E+00	0.00E+00	9.10E-05	See POM
Benzo(a)pyrene	1.20E-06	0.00E+00	0.00E+00	2.00E-06	See POM
Benzo(b)fluoranthene	1.80E-06	0.00E+00	0.00E+00		See POM
Benzo(g,h,i)perylene	1.20E-06	0.00E+00	0.00E+00	9.10E-05	No
Benzo(k)fluoranthene	1.80E-06	0.00E+00	0.00E+00		See POM
Chrysene	1.80E-06	0.00E+00	0.00E+00		See POM
Dibenzo(a,h)anthracene	1.20E-06	0.00E+00	0.00E+00		See POM
Dichlorobenzene	1.20E-03	0.00E+00	0.00E+00	9.10E-05	No
Fluoranthene	3.00E-06	0.00E+00	0.00E+00	9.10E-05	No
Fluorene	2.80E-06	0.00E+00	0.00E+00	9.10E-05	No
Indeno(1,2,3-cd)pyrene	1.80E-06	0.00E+00	0.00E+00		See POM
Naphthalene	6.10E-04	0.00E+00	0.00E+00	3.33	No
Naphthalene	6.10E-04	0.00E+00	0.00E+00	9.10E-05	No
Phenanthrene	1.70E-05	0.00E+00	0.00E+00	9.10E-05	No
Pyrene	5.00E-06	0.00E+00	0.00E+00	9.10E-05	No
Polycyclic Organic Matter (POM)	7-PAH C	0.00E+00	0.00E+00	2.00E-06	No
Non-PAH HAPs					
Benzene	2.10E-03	0.00E+00	0.00E+00	8.00E-04	No
Formaldehyde	7.50E-02	0.00E+00	0.00E+00	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
Non-HAP Organic Compounds					
7,12-Dimethylbenz(a)anthracene	1.60E-05	0.00E+00	0.00E+00		
Butane	2.10E+00	0.00E+00	0.00E+00		
Ethane	3.10E+00	0.00E+00	0.00E+00		
Pentane	2.80E+00	0.00E+00	0.00E+00	118	No
Propane	1.60E+00	0.00E+00	0.00E+00		
Metals (HAPs)					
Arsenic	2.00E-04	0.00E+00	0.00E+00	1.50E-06	No
Barium	4.40E-03	0.00E+00	0.00E+00	0.033	No
Beryllium	1.20E-05	0.00E+00	0.00E+00	2.80E-05	No
Cadmium	1.10E-03	0.00E+00	0.00E+00	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	2.80E-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	0.00E+00	0.00E+00	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	0.687	No

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

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

TOTAL CBP + BOILER EMISSIONS (POINT SOURCES, T/yr) 0.22

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

Enter 0 in the hr/day and hr/yr cells if there is no diesel fired boiler

5 MMBtu/hr / 140 MMBtu/10³ gal = 3.57E-02 10³ gal/hr Fuel Use:

Operating Assumptions: 0 hr/day 0.00 gal/day
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 ³ gal	lb/hr					
NO2	20	7.14E-01	0.00E+00	0.00E+00	1 T/yr	No	7 T/yr	No
CO	5	1.79E-01	0.00E+00	0.00E+00	14 lb/hr	No	70 lb/hr	No
PM10 (filterable + condensab	3.3	1.18E-01	0.00E+00	2.11E-01	0.2 lb/hr	No	0.9 lb/hr	No
		1.18E-01	0.00E+00		1 T/yr	No	7 T/yr	No
SOx (SO2 + SO3)	0.216	7.71E-03	0.00E+00	0.00E+00	0.2 lb/hr	No	0.9 lb/hr	No
		7.71E-03	0.00E+00		1 T/yr	No	7 T/yr	No
VOC (TOC)	0.556	1.99E-02	0.00E+00	0.00E+00	40 T/yr	No		
Lead EF = 9 lb/10 ¹² Btu	9	4.50E-05	0.00E+00	7.27E-03	0.6 T/yr	No		
Lead, continued			0.00E+00	lb/quarter	10 lb/mo	No		
		TOTAL	0.00E+00	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)				EL (lb/hr)	Exceeds EL/Modeling Required?
	lb/10 ³ gal	lb/hr	T/yr		
PAH HAPs					
Acenaphthene	2.11E-05	0.00E+00	0.00E+00	9.10E-05	No
Acenaphthylene	2.57E-07	0.00E+00	0.00E+00	9.10E-05	No
Anthracene	1.22E-06	0.00E+00	0.00E+00	9.10E-05	No
Benzo(a)anthracene	4.01E-06	0.00E+00	0.00E+00	9.10E-05	See POM
Benzo(a)pyrene				2.00E-06	See POM
Benzo(b,k)fluoranthene	1.48E-06	0.00E+00	0.00E+00		See POM
Benzo(g,h,i)perylene	2.26E-06	0.00E+00	0.00E+00	9.10E-05	No
Benzo(k)fluoranthene	0.00E+00	0.00E+00	0.00E+00		See POM
Chrysenes	2.38E-06	0.00E+00	0.00E+00		See POM
Dibenzof(a,h)anthracene	1.67E-06	0.00E+00	0.00E+00		See POM
Dichlorobenzene				9.10E-05	No
Fluoranthene	4.84E-06	0.00E+00	0.00E+00	9.10E-05	No
Fluorene	4.47E-06	0.00E+00	0.00E+00	9.10E-05	No
Indeno(1,2,3-cd)pyrene	2.14E-06	0.00E+00	0.00E+00		See POM
Naphthalene	1.13E-03	0.00E+00	0.00E+00	3.33	No
Naphthalene	1.13E-03	0.00E+00	0.00E+00	9.10E-05	No
Phenanthrene	1.05E-05	0.00E+00	0.00E+00	9.10E-05	No
Pyrene	4.25E-06	0.00E+00	0.00E+00	9.10E-05	No
Polycyclic Organic Matter (POM)	7-PAH C	0.00E+00	0.00E+00	2.00E-06	No
Non-PAH HAPs					
Benzene	2.14E-04	0.00E+00	0.00E+00	8.00E-04	No
Ethyl benzene	6.36E-05	0.00E+00	0.00E+00	2.90E+01	No
Formaldehyde	3.30E-02	0.00E+00	0.00E+00	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	
Metals (HAPs)					
Arsenic	4.00E+00	0.00E+00	0.00E+00	1.50E-06	No
Barium				0.033	No
Beryllium	3.00E+00	0.00E+00	0.00E+00	2.80E-06	No
Cadmium	3.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	2.70E-06	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	0.687	No

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

TOTAL CBP + BOILER EMISSIONS (POINT SOURCES, T/yr) 0.22

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.

CURRENT PTC APPLICATION ESTIMATES

CAUTION: EI SUMMARY WORKSHEETS ALLOW ONLY ONE LARGE AND/OR ONE SMALL ENGINE.

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 Small Engine (hp)	0.0	Max Sulfur weight percent (w/o)	0.0015%
Rating of Large Engine (hp)	0.0		
EF OPTIONS:		Use EFs in lb/MMBtu fuel input	
1 hp = 0.7456999 kW	0.7457	Max Operational Hours per Day	24
Avg brake-specific fuel consumption (BSFC) = 7000 Btu/hp-hr	7000	Max Operational Hours per Year	0
Fuel Heating Value, Btu/gal	137,030	Calculated Max Fuel Use Rate, gal/hr (Large)	0.00
		Calculated Max Fuel Use Rate, gal/hr (small)	0.00
		Calculated MMBtu/hr (Large)	0.00
		Calculated MMBtu/hr (Small)	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:		0
Not EPA-certified:	Enter "0" (zero)	
Certified Tier 1, Tier 2, Tier 3, or Tier 4:	Enter 1, 2, 3, or 4	
Certified "BLUE SKY" engine:	Enter E	

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

Facility:
2/21/2013 7:19

American Falls Ready Mix
Permit/Facility ID: P-2013.0003 077-00034

User Input Weight % Sulfur = 0.0015%

SO2 EF = 1.01 x S

Fuel Type Toggle = 0
0 hp Engine
Fuel Consumption Rate 0.00 gal/hr
Calculated MMBtu/hr 0.0000 MMBtu/hr
Max Daily Operation 24 hr/day
Max Annual Operation 0 hrs/yr

Pollutant	Emission Factor ^a (lb/MMBtu)	Emissions (lb/hr)	Emissions (T/yr)	TAPs Emissions (lb/hr) Annual or 24-hr Average
PM ^b	0.1	0.000	0.00	
PM-10 (total) ^d	0.310	0.000	0.000	
P.M.-2.5		0.000		
CO ^b	0.95	0.000	0.00	
NOx ^b	4.410	0.000	0.00	
SO ₂ ^b (total SOx presumed SO2)	0.001615	0.000	0.000	
VOC ^b (total TOC -> VOCs)	0.360	0.000	0.000	
Lead				
HCl ^e				
Dioxins^a				
2,3,7,8-TCDD				
Total TCDD				
1,2,3,7,8-PeCDD				
Total PeCDD				
1,2,3,4,7,8-HxCDD ^a				
1,2,3,6,7,8-HxCDD				
1,2,3,7,8,9-HxCDD ^a				
Total HxCDD				
1,2,3,4,6,7,8-Hp-CDD ^a				
Total HpCDD ₂				
Octa CDD ^a				
Total PCDD ^a				
Furans^a				
2,3,7,8-TCDF				
Total TCDF ^a				
1,2,3,7,8-PeCDF				
2,3,4,7,8-PeCDF				
Total PeCDF ^a				
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 ^a				
1,2,3,4,6,7,8-HpCDF				
1,2,3,4,7,8,9-HpCDF				
Total HpCDF ^a				
Octa CDF ^a				
Total PCDF ^a				
Total PCDD/PCDF ^a				
Non-PAH HAPs				
Acetaldehyde ^a	7.67E-04	0.00E+00	0.00E+00	0.00E+00
Acrolein ^a	9.25E-05	0.00E+00	0.00E+00	0.00E+00
Benzene ^{a,a}	9.33E-04	0.00E+00	0.00E+00	0.00E+00
1,3-Butadiene ^{a,a}	3.91E-05			
Ethylbenzene ^a				
Formaldehyde ^{a,a}	1.18E-03	0.00E+00	0.00E+00	0.00E+00
Hexane ^a				
Isocane				
Methyl Ethyl Ketone ^a				
Pentane ^a				
Propionaldehyde ^a				
Quinone ^a				
Methyl chloroform ^a				
Toluene ^{a,a}	4.09E-04	0.00E+00	0.00E+00	0.00E+00
Xylene ^{a,a}	2.85E-04	0.00E+00	0.00E+00	0.00E+00
PAH, Total		0.00E+00		0.00E+00
POM (7-PAH Group)		0.00E+00	0.00E+00	0.00E+00

Pollutant	Emission Factor ^a (lb/MMBtu)	Emissions (lb/hr)	Emissions (T/yr)	TAPs Emissions (lb/hr) Annual or 24-hr Average
PAH HAPs				
2-Methylnaphthalene				
3-Methylchloranthrene ^a				
Acenaphthene ^{a1}	1.42E-06	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene ^{a1}	5.06E-06	0.00E+00	0.00E+00	0.00E+00
Anthracene ^{a1}	1.87E-06	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene ^{a1}	1.68E-06	0.00E+00	0.00E+00	0.00E+00
Benzo(a)pyrene ^{a1,a}	1.88E-07	0.00E+00	0.00E+00	0.00E+00
Benzo(b)fluoranthene ^{a1}	9.81E-08	0.00E+00	0.00E+00	0.00E+00
Benzo(e)pyrene				
Benzo(g,h,i)perylene ^{a1}	4.89E-07	0.00E+00	0.00E+00	0.00E+00
Benzo(k)fluoranthene ^{a1}	1.55E-07	0.00E+00	0.00E+00	0.00E+00
Chrysene ^{a1}	3.53E-07	0.00E+00	0.00E+00	0.00E+00
Dibenzo(a,h)anthracene ^{a1}	5.83E-07	0.00E+00	0.00E+00	0.00E+00
Dichlorobenzene				
Fluoranthene ^{a1}	7.81E-08	0.00E+00	0.00E+00	0.00E+00
Fluorene ^{a1}	2.92E-05	0.00E+00	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene ^{a1}	3.75E-07	0.00E+00	0.00E+00	0.00E+00
Naphthalene ^{a1,a}	8.48E-05	0.00E+00	0.00E+00	0.00E+00
Perylene				
Phenanthrene ^{a1}	2.94E-05	0.00E+00	0.00E+00	0.00E+00
Pyrene ^{a1}	4.78E-08	0.00E+00	0.00E+00	0.00E+00
Non-HAP Organic Compounds				
Acetone ^a				
Benzaldehyde				
Butane				
Butyraldehyde				
Crotonaldehyde ^a				
Ethylene				
Heptane				
Hexanal				
Isovaleraldehyde				
2-Methyl-1-pentene				
2-Methyl-2-butene				
3-Methylpentane				
1-Pentene				
n-Pentane				
Valeraldehyde				
Metals				
Antimony ^a				
Arsenic ^a				
Barium ^a				
Beryllium ^a				
Cadmium ^a				
Chromium ^a				
Cobalt ^a				
Copper ^a				
Hexavalent Chromium ^a				
Manganese ^a				
Mercury ^a				
Molybdenum ^a				
Nickel ^a				
Phosphorus ^a				
Silver ^a				
Selenium ^a				
Thallium ^a				
Vanadium ^a				
Zinc ^a				

- a) Emission factors are from AP-42
- b) AP-42, Table 3.3-1, Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines, 10/96
- c) AP-42, Table 3.3-2, Speciated Organic Compound Emission Factors for Uncontrolled Diesel Engine, Emission Factor Rating E, 10/96
- d) (reserved)
- e) 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.

Fuel Type Toggle = 0 0 hp Engine
 Fuel Consumption Rate 0.000 gal/hr
 Calculated MMBtu/hr 0.000 MMBtu/hr
 Max Daily Operation 24 hr/day
 Max Annual Operation 0 hrs/yr

Pollutant	Emission Factor ^a (lb/MMBtu)	Emissions (lb/hr)	Emissions (T/yr)	TAPs Emissions (lb/hr) Annual or 24-hr Average
PM ^b	0.1	0.000	0.00	
PM-10 (total) ^a	0.000	0.000	0.000	
PM-2.5		0.000		
CO ^b	0.00	0.000	0.00	
NOx ^c	0.000	0.000	0.00	
SO ₂ ^b (total SOx presumed SO2)	0.001515	0.000	0.000	
VOC ^b (total TOC → VOCs)	0.000	0.000	0.000	
Lead				
HCl ^a				
Dioxins ^a				
2,3,7,8-TCDD				
Total TCDD				
1,2,3,7,8-PeCDD				
Total PeCDD				
1,2,3,4,7,8-HxCDD ^d				
1,2,3,6,7,8-HxCDD				
1,2,3,7,8,9-HxCDD ^d				
Total HxCDD				
1,2,3,4,6,7,8-HpCDD ^d				
Total HpCDD ₂				
Octa CDD ^d				
Total PCDD ^d				
Furans ^a				
2,3,7,8-TCDF				
Total TCDF ^e				
1,2,3,7,8-PeCDF				
2,3,4,7,8-PeCDF				
Total PeCDF ^e				
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 ^e				
1,2,3,4,6,7,8-HpCDF				
1,2,3,4,7,8,9-HpCDF				
Total HpCDF ^e				
Octa CDF ^e				
Total PCDF ^e				
Total PCDD/PCDF ^e				
Non-PAH HAPs				
Acetaldehyde ^f	2.52E-05	0.00E+00	0.00E+00	0.00E+00
Acrolein ^f	7.88E-06	0.00E+00	0.00E+00	0.00E+00
Benzene ^{g,h}	7.78E-04	0.00E+00	0.00E+00	0.00E+00
1,3-Butadiene ^{g,h}				
Ethylbenzene ^g				
Formaldehyde ^{g,h}	7.89E-06	0.00E+00	0.00E+00	0.00E+00
Hexane ^g				
Isooctane ^g				
Methyl Ethyl Ketone ^g				
Pentane ^g				
Propionaldehyde ^g				
Quinone ^g				
Methyl chloroform ^g				
Toluene ^{g,h}	2.81E-04	0.00E+00	0.00E+00	0.00E+00
Xylene ^{g,h}	1.93E-04	0.00E+00	0.00E+00	0.00E+00
PAH, Total		0.00E+00		0.00E+00
POM (7-PAH Group)		0.00E+00	0.00E+00	0.00E+00

Pollutant	Emission Factor ^a (lb/MMBtu)	Emissions (lb/hr)	Emissions (T/yr)	TAPs Emissions (lb/hr) Annual or 24-hr Average
PAH HAPs				
2-Methylnaphthalene				
3-Methylchloranthrene ^a				
Acenaphthene ^{c1}	4.68E-06	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene ^{c1}	9.23E-06	0.00E+00	0.00E+00	0.00E+00
Anthracene ^{c1}	1.23E-06	0.00E+00	0.00E+00	0.00E+00
Benzo(a)anthracene ^{c1}	6.22E-07	0.00E+00	0.00E+00	0.00E+00
Benzo(a)pyrene ^{c1,g}	2.57E-07	0.00E+00	0.00E+00	0.00E+00
Benzo(b)fluoranthene ^{c1}	1.11E-06	0.00E+00	0.00E+00	0.00E+00
Benzo(e)pyrene				
Benzo(g,h,i)perylene ^{c1}	5.56E-07	0.00E+00	0.00E+00	0.00E+00
Benzo(k)fluoranthene ^{c1}	2.18E-07	0.00E+00	0.00E+00	0.00E+00
Chrysene ^{c1}	1.53E-06	0.00E+00	0.00E+00	0.00E+00
Dibenzo(a,h)anthracene ^{c1}	3.46E-07	0.00E+00	0.00E+00	0.00E+00
Dichlorobenzene				
Fluoranthene ^{c1}	4.03E-06	0.00E+00	0.00E+00	0.00E+00
Fluorene ^{c1}	1.28E-05	0.00E+00	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene ^{c1}	4.14E-07	0.00E+00	0.00E+00	0.00E+00
Naphthalene ^{c1,g}	1.30E-04	0.00E+00	0.00E+00	0.00E+00
Perylene				
Phenanthrene ^{c1}	4.08E-05	0.00E+00	0.00E+00	0.00E+00
Pyrene ^{c1}	3.71E-06	0.00E+00	0.00E+00	0.00E+00
Non-HAP Organic Compounds				
Acetone ^a				
Benzaldehyde				
Butane				
Butyraldehyde				
Crotonaldehyde ^a				
Ethylene				
Heptane				
Hexanal				
Isovaleraldehyde				
2-Methyl-1-pentene				
2-Methyl-2-butane				
3-Methylpentane				
1-Pentene				
n-Pentane				
Valeraldehyde				
Metals				
Antimony ^a				
Arsenic ^a				
Barium ^a				
Beryllium ^a				
Cadmium ^a				
Chromium ^a				
Cobalt ^a				
Copper ^a				
Hexavalent Chromium ^a				
Manganese ^a				
Mercury ^a				
Molybdenum ^a				
Nickel ^a				
Phosphorus ^a				
Silver ^a				
Selenium ^a				
Thallium ^a				
Vanadium ^a				
Zinc ^a				

- 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.

Pollutant	Total Emissions (lb/hr)	Total Emissions (T/yr)	Pollutant	Total Emissions (lb/hr)	Total Emissions (T/yr)
PM ^b	0.000	0.00	PAH HAPs		
PM-10 (total) ^a	0.000	0.00	2-Methylnaphthalene		
P.M.-2.5	0.000	0.00	3-Methylchloranthrene ^a		
CO ^b	0.000	0.00	Acenaphthene ^{c1}	0.00E+00	0.00E+00
NO _x ^b	0.000	0.00	Acenaphthylene ^{c1}	0.00E+00	0.00E+00
SO ₂ ^b (total SO _x presumed SO ₂)	0.000	0.00	Anthracene ^{c1}	0.00E+00	0.00E+00
VOC ^b (total TOC -> VOCs)	0.000	0.00	Benzo(a)anthracene ^{c1}	0.00E+00	0.00E+00
Lead			Benzo(a)pyrene ^{c1,a}	0.00E+00	0.00E+00
HCl ^a			Benzo(b)fluoranthene ^{c1}	0.00E+00	0.00E+00
Dioxins ^a			Benzo(e)pyrene		
2,3,7,8-TCDD			Benzo(g,h,i)perylene ^{c1}	0.00E+00	0.00E+00
Total TCDD			Benzo(k)fluoranthene ^{c1}	0.00E+00	0.00E+00
1,2,3,7,8-PeCDD			Chrysene ^{c1}	0.00E+00	0.00E+00
Total PeCDD			Dibenzo(a,h)anthracene ^{c1}	0.00E+00	0.00E+00
1,2,3,4,7,8-HxCDD ^f			Dichlorobenzene		
1,2,3,6,7,8-HxCDD			Fluoranthene ^{c1}	0.00E+00	0.00E+00
1,2,3,7,8,9-HxCDD ^f			Fluorene ^{c1}	0.00E+00	0.00E+00
Total HxCDD			Indeno(1,2,3-cd)pyrene ^{c1}	0.00E+00	0.00E+00
1,2,3,4,6,7,8-HpCDD ^f			Naphthalene ^{c1,a}	0.00E+00	0.00E+00
Total HpCDD _s			Perylene		
Octa CDD ^f			Phenanthrene ^{c1}	0.00E+00	0.00E+00
Total PCDD ^f			Pyrene ^{c1}	0.00E+00	0.00E+00
Furans ^a			Non-HAP Organic Compounds		
2,3,7,8-TCDF			Acetone ^a		
Total TCDF ^e			Benzaldehyde		
1,2,3,7,8-PeCDF			Butane		
2,3,4,7,8-PeCDF			Butyraldehyde		
Total PeCDF ^e			Crotonaldehyde ^a		
1,2,3,4,7,8-HxCDF			Ethylene		
1,2,3,6,7,8-HxCDF			Heptane		
2,3,4,6,7,8-HxCDF			Hexanal		
1,2,3,7,8,9-HxCDF			Isovaleraldehyde		
Total HxCDF ^e			2-Methyl-1-pentene		
1,2,3,4,6,7,8-HpCDF			2-Methyl-2-butene		
1,2,3,4,7,8,9-HpCDF			3-Methylpentane		
Total HpCDF ^e			1-Pentene		
Octa CDF ^e			n-Pentane		
Total PCDF ^e			Valeraldehyde		
Total PCDD/PCDF ^e			Metals		
Non-PAH HAPs			Antimony ^a		
Acetaldehyde ^a	0.00E+00	0.00E+00	Arsenic ^a		
Acrolein ^a	0.00E+00	0.00E+00	Barium ^a		
Benzene ^{a,a}	0.00E+00	0.00E+00	Beryllium ^a		
1,3-Butadiene ^{a,a}			Cadmium ^a		
Ethylbenzene ^a			Chromium ^a		
Formaldehyde ^{a,a}	0.00E+00	0.00E+00	Cobalt ^a		
Hexane ^a			Copper ^a		
Isocitane			Hexavalent Chromium ^a		
Methyl Ethyl Ketone ^a			Manganese ^a		
Pentane ^a			Mercury ^a		
Propionaldehyde ^a			Molybdenum ^a		
Quinone ^a			Nickel ^a		
Methyl chloroform ^a			Phosphorus ^a		
Toluene ^{a,a}	0.00E+00	0.00E+00	Silver ^a		
Xylene ^{a,a}	0.00E+00	0.00E+00	Selenium ^a		
			Thallium ^a		
PAH, Total	0.00E+00	0.00E+00	Vanadium ^a		
POM (7-PAH Group)	0.00E+00	0.00E+00	Zinc ^a		

Facility: American Falls Ready Mix
 2/21/2013 7:19 Permit/Facility ID: 077-00034 P-2013.0003

Max Hourly Production 100 cy/hr 82% T/hr is Aggregate = 32 cy/hr
 Max Daily Production 500 cy/day 82% T/hr is Aggregate = 410 cy/day
 Max Annual Production 100,000 cy/yr 82% T/hr is Aggregate = 82,030 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)

$E = k(0.0032) \times (U^a / M^b) + c = 5.81E-02 \quad 2.32E-02 \text{ lb/ton for PM10} \quad 3.48E-03 \text{ lb/ton for PM2.5}$

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 = 7 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.html#DAHO>).
 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	Upper windspeed (m/sec)	Avg windspeed (m/sec)	Avg windspeed (mph)	PM10		PM2.5	
				E @ avg mph	F = Eavg mph / E@10mph	E @ avg mph	mph / E@10mph
Cat 1:	1.54	0.77	1.72	8.75E-03	0.2907	1.01E-03	0.2907
Cat 2:	3.09	2.32	5.18	1.58E-02	0.6810	2.38E-03	0.6810
Cat 3:	5.14	4.12	9.20	3.43E-02	1.4771	5.15E-03	1.4771
Cat 4:	8.23	6.89	14.95	7.32E-02	3.163	1.10E-02	3.163
Cat 5:	10.80	9.52	21.28	1.31E-01	5.658	1.97E-02	5.658
Cat 6:	14.00	12.40	27.74	2.06E-01	8.861	3.08E-02	8.861

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

$E = k(0.0032) \times (U^a / M^b) + c = 1.77E-03 \quad 1.20E-03 \text{ lb/ton for PM10} \quad 2.46E-04 \text{ lb/ton for PM2.5}$

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 = 7 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.html#DAHO>).
 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	Upper windspeed (m/sec)	Avg windspeed (m/sec)	Avg windspeed (mph)	PM10		PM2.5	
				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	0.8223	2.24E-04	0.8126
Cat 2:	3.09	2.32	5.18	1.87E-03	1.5688	2.40E-04	0.9783
Cat 3:	5.14	4.12	9.20	2.13E-03	1.7780	2.62E-04	1.0245
Cat 4:	8.23	6.89	14.95	2.41E-03	2.006	2.66E-04	1.0781
Cat 5:	10.80	9.52	21.28	2.65E-03	2.208	2.78E-04	1.1213
Cat 6:	14.00	12.40	27.74	2.86E-03	2.381	2.85E-04	1.1603

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

Pollutant	Emission Factor Table 11.12-5 CONVEYOR TRANSFER PT CONTROLLED (lb/cy)	Transfer from truck to conveyor: 82 cy/hr				3 Transfer Points			
		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	0.040	0.008	2.00E-02	4.56E-03	0.120	0.025	5.99E-02	1.37E-02
PM-10 (total)	7.00E-04	0.019	0.004	9.32E-03	2.13E-03	0.056	0.012	2.80E-02	6.36E-03

Coarse Aggregate Transfer to Conveyor

Pollutant	Emission Factor Table 11.12-5 CONVEYOR TRANSFER PT CONTROLLED (lb/cy)	Transfer from truck to conveyor: 82 cy/hr				3 Transfer Points			
		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)	0.0084	0.221	0.046	1.10E-01	2.52E-02	0.662	0.138	3.31E-01	7.58E-02
PM-10 (total)	3.10E-03	0.107	0.022	5.35E-02	1.22E-02	0.321	0.067	1.80E-01	3.68E-02

Final Concrete Batch Plant Emissions Inventory

Listed Below are the emissions estimates for the units selected.

Company:	American Falls Ready Mix
Facility ID:	077-00634
Permit No.:	P-2013.0003
Source Type:	Portable Concrete Batch Plant
Manufacturer/Model:	Belgrade Steel Tank Co., Inc.

Production

Maximum Hourly Production Rate:	100 cy/hr
Proposed Daily Production Rate:	500 cy/day
Proposed Maximum Annual Production Rate:	100000 cy/year

Emissions Units		Tons/year						
		PM ₁₀	SO ₂	NO _x	CO	VOC	Lead	THAPs
CBP Type:	Truck Mix	0.21	NA	NA	NA	NA	9.49E-06	
Water Heater/Boiler:	No Boiler	0.000	0.000	0.000	0.000	0.000	0.00E+00	
Diesel Engine*:	No Engine	0.00	0.00	0.00	0.00	0.00	NA	
	Transfer/Drop Points	0.19	NA	NA	NA	NA	NA	
	Totals	0.40	0.00	0.00	0.00	0.00	9.49E-06	1.01E-04

Emissions Units		Pounds/hour						
		PM ₁₀	SO ₂	NO _x	CO	VOC	Lead	THAPs
CBP Type:	Truck Mix	0.05	NA	NA	NA	NA	7.27E-06	
Water Heater/Boiler:	No Boiler	0.000	0.000	0.000	0.000	0.000	0.00E+00	
Diesel Engine*:	No Engine	0.00	0.00	0.00	0.00	0.00	NA	
	Transfer/Drop Points	0.08	NA	NA	NA	NA	NA	
	Totals	0.13	0.00	0.00	0.00	0.00	7.27E-06	5.83E-05

* The Large engine may run : There is no large engine. hr/yr
 * The Small engine may run : 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	8.18E-07	4.02E-06	Annual	1.50E-06	No
Barium		X	0.00E+00	0.00E+00	24-hour	3.30E-02	No
Beryllium	X	X	7.83E-08	3.43E-07	Annual	2.80E-05	No
Cadmium	X	X	1.51E-06	6.62E-08	Annual	3.70E-06	No
Cobalt	X	X	0.00E+00	0.00E+00	24-hour	3.30E-03	No
Copper		X	0.00E+00	0.00E+00	24-hour	1.30E-02	No
Chromium	X	X	3.70E-06	0.00E+00	24-hour	3.30E-02	No
Manganese	X	X	1.99E-05	4.50E-05	24-hour	3.33E-01	No
Mercury	X	X	0.00E+00	0.00E+00	24-hour	3.00E-03	No
Molybdenum		X	0.00E+00	0.00E+00	24-hour	2.70E-05	No
Nickel	X	X	2.98E-06	1.31E-05	Annual	2.70E-05	No
Phosphorus	X	X	2.94E-05	3.35E-05	24-hour	7.00E-03	No
Selenium	X	X	8.25E-07	1.98E-06	24-hour	1.30E-02	No
Vanadium		X	0.00E+00	0.00E+00	24-hour	3.00E-03	No
Zinc		X	0.00E+00	0.00E+00	24-hour	6.67E-01	No
Chromium VI	X	X	5.58E-07	2.45E-06	Annual	5.90E-07	No
Non PAH Organic Compounds							
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
Non-PAH HAPs							
Acetaldehyde	X	X	0.00E+00	0.00E+00	Annual	3.00E-03	No
Acrolein	X	X	0.00E+00	0.00E+00	24-hour	1.70E-02	No
Benzene	X	X	0.00E+00	0.00E+00	Annual	8.00E-04	No
1,3-Butadiene	X	X	0.00E+00	0.00E+00	Annual	2.40E-05	No
Ethyl Benzene	X	X	0.00E+00	0.00E+00	24-hour	28	No
Formaldehyde	X	X	0.00E+00	0.00E+00	Annual	5.10E-04	No
Hexane	X	X	0.00E+00	0.00E+00	24-hour	12	No
Isocotane	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	0.00E+00	0.00E+00	24-hour	25	No
o-Xylene	X	X	0.00E+00	0.00E+00	24-hour	7.00E-03	No
PAH HAPs							
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
Acenaphthene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Acenaphthylene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Anthracene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Benzo(a)anthracene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Benzo(a)pyrene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No
Benzo(b)fluoranthene	X	X	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	Annual	9.10E-05	No
Benzo(k)fluoranthene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No
Chrysene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No
Dibenzo(a,h)anthracene	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No
Dichlorobenzene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Fluoranthene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Fluorene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Indeno(1,2,3-cd)pyrene	X	X	0.00E+00	0.00E+00	Annual	2.00E-05	No
Naphthalene	X	X	0.00E+00	0.00E+00	24-hour	3.33	No
Naphthalene	X	X	0.00E+00	0.00E+00	24-hour	9.10E-05	No
Perylene	X		0.00E+00	0.00E+00	NA	NA	NA
Phenanthrene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Pyrene	X	X	0.00E+00	0.00E+00	Annual	9.10E-05	No
Polycyclic Organic Matter (POM)	X	X	0.00E+00	0.00E+00	Annual	2.00E-06	No

Total HAPs Emissions: 5.83E-05 1.01E-04 4.50E-05

Facility: American Falls Ready Mix
 2/21/2013 7:19 Permit P-2013.0003

Facility ID: 077-00034

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	24 hr/day
Max Annual Operation	0 hrs/yr

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	24 hr/day
Max Annual Operation	0 hrs/yr

Rated Power of Large (hp): 0

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

Rated Power of Small (hp): 0

Not EPA Certified:	Yes
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

$$\text{g/kW-hr} \times (\text{lb}/453\text{g}) \times (\text{hp-hr}/7000 \text{ Btu}) \times (0.746 \text{ kW}/\text{hp}) \times 10^6 \text{ Btu/MMBtu} = \text{lb/MMBtu}$$

$$\text{g/kW-hr} \times 0.23486 = \text{lb/MMBtu}$$

Pollutant:	NOx	VOC (total TOC-> VOCs)	CO	PM=PM10
EMISSION FACTORS USED FOR SMALL ENGINE (lb/MMBtu):	4.41	0.36	0.95	0.310
Pollutant:	NOx	VOC (total TOC-> VOCs)	CO	PM=PM10
EMISSION FACTORS USED FOR LARGE ENGINE (lb/MMBtu):	0.00	0.00	0.00	0.000

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

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

Rated Power (kW)	Tier	Applicable?	Model Year ¹	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

EMISSION FACTORS FOR GENERATOR (lb/MMBTU): 0.00 0.00 0.00 0.00 0.000

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

Rated Power (kW)	Tier	Applicable?	Model Year ¹	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

EMISSION FACTORS FOR GENERATOR (lb/MMBTU): 0.00 0.00 0.00 0.00 0.000