Air Quality Permitting
Statement of Basis

January 21, 2004

Permit to Construct No. P-040519

Burns Concrete, Inc., Portable

Facility ID No. 777-00347

Prepared by:

Shawnee Chen, P.E., Senior Engineer
AIR QUALITY DIVISION

FINAL

Table of Contents

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURES 3

1. PURPOSE 4

2. FACILITY DESCRIPTION 4

3. FACILITY / AREA CLASSIFICATION 4

4. APPLICATION SCOPE 4

5. PERMIT ANALYSIS 4

6. PERMIT CONDITIONS 9

7. PUBLIC COMMENT 10

8. RECOMMENDATION 10

APPENDIX A - EMISSIONS INVENTORY AND AMBIENT IMPACT ANALYSIS

APPENDIX B -SCREEN3 MODEL OUTPUT

APPENDIX C - AIRS INFORMATION

Acronyms, Units, and Chemical Nomenclatures

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
CO	carbon monoxide
cy/hr	cubic yards per hour
cy/day	cubic yards per day
cy/yr	cubic yards per year
DEQ	Department of Environmental Quality
HAPs	Hazardous Air Pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
lb/day	pound per day
MACT	Maximum Achievable Control Technology
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
Rules	Rules for the Control of Air Pollution in Idaho
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	sulfur dioxide
T/yr	tons per year
$\mu g/m^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing permits to construct (PTC).

2. FACILITY DESCRIPTION

This facility is a portable concrete batch plant. The concrete is manufactured in a central mix drum and transferred to a transport truck. The plant is powered by electricity from the power line.

3. FACILITY / AREA CLASSIFICATION

Burns Concrete, Inc. (Burns Concrete) is defined as a natural minor facility because without permit limits on the potential to emit, the emissions of any single regulated air pollutant will not exceed 100 tons per year. The AIRS classification is "B" because the Burns Concrete is a natural minor facility.

The AIRS information provided in Appendix C defines the classification for each regulated air pollutant at Burns Concrete.

4. APPLICATION SCOPE

The applicant requested a PTC for a new portable concrete batch plant with a central mix drum.

4.1 Application Chronology

August 9, 2004	DEQ received a PTC application from Burns Concrete
August 23, 2004	DEQ received additional information from Burns Concrete
September 7, 2004	DEQ declared the application incomplete
September 20, 2004	DEQ received additional information
October 20, 2004	DEQ declared the application complete
December 20, 2004	DEQ provided a draft permit for facility review
January 5, 2005	DEQ received comments on the facility draft permit from the facility's consultant
January 11, 2005	DEQ received information on the fraction of flyash and cement used in the product.

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

5.1 Equipment Listing

The equipment in this permit application includes the portable concrete batch plant.

The plant has a Concrete Equipment Co. (CON-E-CO), Model 454w/12s central drum mixer with maximum throughput of 450 cubic yards per hour (cy/hr). The emissions from weight hopper loading and central mixer loading are controlled by the mixer baghouse.

The plant also has two cement storage silos: silo No. 1 and silo No. 2, which have the following characteristics:

- Cement silo No.1 has storage capacity of 3,060 cubic feet. The emissions from No.1 cement silo are controlled by cem I baghouse.
- Cement silo No.2 has two identical compartments with total storage capacity of 2,940 cubic feet. The emissions from each compartment of No.2 cement silo are controlled by cem II baghouse and cem III baghouse, respectively. These two silo No. 2 baghouses are identical.

5.2 Emissions Inventory

The methodology used to estimate emissions in PM_{10} attainment areas from each point source is described in the footnote a through footnote f of Table 5.1. Burns Concrete proposed production rate of 9,600 cy/day and 1,000,000 cy/yr in the September 20, 2004 submittal. These production rates are used in the emissions estimates for PM_{10} attainment areas.

Table 5.1 CONCRETE BATCH PLANT EMISSIONS SUMMARY FOR PM_{10} ATTAINMENT AREAS

Source	Emission Factor[a, b]	Emission Rate, 24-hour average		Emission Rate, annual average	
	lb/yd³	lb/hr[c]	lb/day[d]	lb/hr[e]	T/yr[f]
Mixer Baghouse, PJ-850 (Emissions from Weigh Hopper Loading and Central Mixer Loading)	0.0049	1.96	47.04	0.559	2.45
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	0.0001	0.023	0.55	0.007	0.029
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	0.0001	0.011	0.26	0.003	0.014
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	0.0002	0.012	0.29	0.003	0.015
Facility wide, including fugitive	0.036				18

[a] Emission factor for mixer Baghouse is the sum of emission factors for weigh hopper loading and for central mix loading (controlled) from AP-42 Table 11.12-4.

[b] Per the phone conversation with the facility's consultant on 1/5/05, the silo no.1 and compartment No.2A of silo No.2 store cement only, and compartment No.2B of silo No.2 stores flyash only. Therefore, emissions factor for cement storage silo No.1 and for cement storage silo No.2 compartment 2A is the emissions factor taken from AP-42 Table 11.12-4 for cement delivery to silo (with control); the emission factor for cement storage silo No.2 compartment 2B is the emissions factor taken from AP-42 Table 11.12-4 for cement supplement (flyash) delivery to silo (with control). By reviewing AP-42, Section 11.12 (10/01), it appears that the baghouse is a part of the process for cement transfer. Therefore, the PTE of the cement silo is the controlled emissions.

[c] Hourly emissions rate is based on 24-hour average. For Baghouse cem I, It is calculated as: (EF lb/yd³) x (daily production in yd³/day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem II, It is calculated as: (EF lb/yd³) x (daily production in yd³/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem III, It is calculated as: (EF lb/yd³) x (daily production in yd³/day) x 15% / (24 hours/day). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for emissions estimates is reasonable.

[d] Daily emissions is calculated as: hourly emissions rate, 24-hr average x 24 hr/day.

[e] Annual hourly emissions rate is calculated as: (annual emissions T/yr) /(8760 hours/yr) x (2000 lb/T)

[f] Annual emissions calculation. For Baghouse cem I, It is calculated as: (EF lb/yd³) x (annual production in yd³/day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem II, It is calculated as: (EF lb/yd³) x (annual production in yd³/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem III, It is calculated as: (EF lb/yd³) x (daily production in yd³/day) x 15% / (2000 lb/T). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for the emissions estimates is reasonable.

For PM_{10} non-attainment areas, the methodology used to estimate emissions from each point source and to establish the production limitation is described in footnote a through footnote f of Table 5.2. In short, the production limitations in the permit of 1,460 cy/day and 532,000 cy/yr were back calculated based on significant contribution of 5 $\mu g/m^3$, 24-hour average, and 1 $\mu g/m^3$, annual average.

Table 5.2 CONCRETE BATCH PLANT EMISSIONS SUMMARY FOR PM_{10} NONATTAINMENT AREA

Point Source	Emission Factor[a, b]	Emission Rate, 24-hour average		Emission Rate, annual average	
	lb/yd³	Lb/hr[c]	lb/day[d]	lb/hr[e]	T/yr[f]
Mixer Baghouse, PJ-850 (Emissions from Weigh Hopper Loading and Central Mixer Loading)	0.0049	0.30	7.11	0.298	1.30
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	0.0001	0.004	0.08	0.004	0.015
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	0.0001	0.002	0..04	0.002	0.007
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	0.0002	0.002	0.04	0.002	0.008
Facility Wide	0.036				9.576

[a] Emission factor for mixer baghouse is the sum of emission factors for weigh hopper loading and for central mix loading from AP-42 Table 11.12-4.

[b] Per the phone conversation with the facility's consultant on 1/5/05, the silo no.1 and compartment No.2A of silo No.2 store cement only, and compartment No.2B of silo No.2 stores flyash only. Therefore, emissions factor for cement storage silo No.1 and for cement storage silo No.2 compartment 2A is the emisaions factor taken from AP-42 Table 11.12-4 for cement delivery to silo (with control); the emission factor for cement storage silo No.2 compartment 2B is the emissions factor taken from AP-42 Table 11.12-4 for cement supplement (flyash) delivery to silo (with control). By reviewing AP-42, Section 11.12 (10/01), it appears that the baghouse is a part of the process for cement transfer. Therefore, the PTE of the cement silo is the controlled emissions.

[c] Hourly emissions rate is based on 24-hour average. For Baghouse cem I, It is calculated as: (EF lb/yd3) x (daily production in yd3/day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem II, It is calculated as: (EF lb/yd3) x (daily production in yd3/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem III, It is calculated as: (EF lb/yd3) x (daily production in yd3/day) x 15% / (24 hours/day). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for emissions estimates is reasonable.

[d] Daily emissions is calculated as: hourly emissions rate, 24-hr average x 24 hr/day.

[e] Annual hourly emissions rate is calculated as: (annual emissions T/yr) /(8760 hours/yr) x (2000 lb/T)

[f] Annual emissions calculation. For Baghouse cem I, It is calculated as: (EF lb/yd3) x (annual production in yd3/day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem II, It is calculated as: (EF lb/yd3) x (annual production in yd3/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem III, It is calculated as: (EF lb/yd3) x (daily production in yd3/day) x 15% / (2000 lb/T). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for the emissions estimates is reasonable.

Per the information in facility's August 9, 2004 application, this plant will not operate simultaneously with the other Burns Concrete plant under permit facility number 777-00242, which is located at the same site. Analysis for collocation of this source with other rock crusher, concrete batch plant, or hot mix asphalt plant was not conducted; all the production limits are developed under the assumption that this concrete plant will be operated alone. Should the facility be moved adjacent to another rock crusher, concrete batch plant, or hot mix asphalt plant, then a new permit application will have to be submitted and a collocation analysis will have to be performed.

5.3 *Modeling*

Dispersion modeling was conducted for three storage silo baghouses and the mixer baghouse using the Screen3 dispersion model. Each emissions point was modeled separately at the emissions rate of 1 lb/hr. Then the modeled ambient concentration at a unit rate is multiplied by the source emissions rate to obtain the source ambient concentration. The maximum impacts from each emissions point were summed to conservatively estimate the maximum PM_{10} plant wide ambient concentrations.

Table 5.3 is the summary of the stack parameters used in the modeling, which were provided by the applicant.

Table 5.3 SUMMARY OF THE STACK PARAMETERS

Point Source	Stack Height	Stack Area (rectangular)	Stack Diameter, $A = \pi d^2/4$	Air Flowrate	Stack Temperature (not provided, assumed atmosphere temp)	Stack Exit configuration
	feet(ft)	ft^2	Ft	Acfm	C^0	Horizontal
Mixer Baghouse, PJ-850 (Emissions from Weigh Hopper Loading and Central Mix Loading)	26	1.92	1.56	5000	20	√
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	85	1.75	1.49	4560	20	√
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	83	0.94	1.09	2280	20	√
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	83	0.94	1.09	2280	20	√

PM_{10} Attainment Area

The plant wide 24-hour PM_{10} ambient concentration is added to the background for portable source at PM_{10} attainment area. Then the sum is compared to the 24-hour average NAAQS. The plant is in compliance with the NAAQS, 88% of the standard, at its proposed production rate of 9,600 cy/day.

The plant wide annual PM_{10} ambient concentration is added to the background for portable source at PM_{10} attainment area. Then the sum is compared to the annual average NAAQS. The plant is in compliance with the annual NAAQS, 72% of the standard, at its proposed production rate of one million cubic yards per year.

Tables 5.4 provides the summary of the plant ambient impacts at PM_{10} attainment area.

Table 5.4 PM_{10} AMBIENT IMPACT AT PM_{10} ATTAINMENT AREAS

Source	Modeling Output @ Its Emissions Rate[1]		Background Concentration[2]		Total Ambient Concentration[3]	
	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average
Mixer Baghouse, PJ-850 (Emissions from Weigh Hopper Loading and Central Mix Loading)	32.36	1.847	100	34.1	132.55	35.96
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	0.08	0.005				
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	0.05	0.003				
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	0.06	0.003				
Total	32.55	1.86				

[1] multiplying ambient concentration at 1lb/hr rate with emissions rates to obtain ambient concentration for each emissions unit.
[2] background concentration for portable source that obtained from modeling coordinator
[3] Adding ambient concentration to background concentration to obtain total ambient concentration

PM_{10} Non-Attainment Area

The plant wide increment of 24-hour PM_{10} ambient concentration exceeds the significant level of 5 $\mu g/m^3$ at facility's proposed production rate. In order to meet the standard, the plant has to take a permit limit on daily concrete production. The daily production limit of 1,460 cy/day is established to meet the significant level.

The plant wide increment of annual PM_{10} ambient concentration exceeds the significant level of 1 $\mu g/m^3$ at facility's proposed production rate. In order to meet the standard, the plant has to take a permit limit on annual concrete production. The annual production rate of 532,000 cy/yr is established to meet the significant level.

Tables 5.5 provides the summary of the plant ambient impacts at PM_{10} nonattainment areas.

Detailed ambient impact analysis and Screen3 modeling output files can be found in Appendices A and B of the Statement of Basis, respectively.

Table 5.5 PM_{10} AMBIENT IMPACT AT PM_{10} NON-ATTAINMENT AREA

Source	Modeling Output @ Emissions Rate of Each Emissions Point[1]	
	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average
Mixer Baghouse, PJ-850 (Emissions from Weigh Hopper Loading and Central Mix Loading)	4.92	0.982
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	0.01	0.003
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	0.01	0.002
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	0.01	0.002
Total	4.95	0.99

[1] multiplying ambient concentration at 1lb/hr rate with emissions rates to obtain ambient concentration for each emissions unit.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201 ..... Permit to Construct Required

This facility is proposing to operate air pollutant emitting equipment that requires a PTC.

40 CFR 60 ..... New Source Performance Standards

This facility is not subject to NSPS.

40 CFR 61 and 63 ..... National Emission Standards for Hazardous Air Pollutants & MACT

This facility is not subject to NESHAP or MACT.

5.5 Fee Review

This permit action is subject to a $1,000 application fee in accordance with IDAPA 58.01.01.224. This permit action is also subject to a processing fee of $500 for a general permit in accordance with IDAPA 58.01.01.225. DEQ received both the application fee and processing fee on August 10, 2004.

5.6 *Draft Permit Review*

A draft permit was provided for regional office review on November 30, 2004. No comments on the draft permit were received. The regional office asked some good questions. The questions were discussed between the state program office and the regional office.

A draft permit was provided for facility review on December 20, 2004. DEQ received the comments provide by facility's consultant on January 5, 2005. The final permit addressed the facility's comments.

6. PERMIT CONDITIONS

6.1 Permit Condition 2.1 limits the opacity of all visible emissions from any stack, vent, or other functionally equivalent opening to no more that 20% for a period or periods exceeding three minutes in any 60 minute period. The permittee is required to develop an operations and maintenance (O&M) manual that contains a maintenance schedule and the manufacturer specifications for pressure drop of each baghouse. The permittee will show compliance with the visible emissions limit by monitoring and recording the pressure drop across the mixer baghouse once per week while the batch plant is operating and by monitoring and recording the pressure drop across each storage silo baghouse once per month during the month when the storage silo is filled. These requirements are included in Section 2 of the permit.

6.2 Permit Condition 2.2 requires the facility to reasonably control fugitive emissions. The permit condition contains various methods that are to be used, where practical to prevent particulate matter from becoming airborne. The permittee will show compliance with this requirement by conducting weekly facility-wide inspections of potential fugitive emissions sources. The permittee is required to record the periodic methods used to control fugitive emissions.

Permit Condition 2.3 requires the facility to use fugitive dust control strategies based on triggering events. The triggering events are when fugitives are observed leaving the property boundary and when visible emission exceed 20%.

6.3 Permit Condition 2.9 requires the permittee to register the concrete batch plant with DEQ at least 10 days prior to relocation.

6.4 Permit Condition 3.1 limits the facility's daily and annual concrete production to 9,600 cy/day and 1,000,000 cy/yr, respectively, while operating in attainment or unclassifiable areas. These production limits were proposed by the permittee. The permittee will show compliance with this limit by monitoring and recording the concrete production on a daily and monthly basis and summing the concrete production over the most recent 12-month period, as required in Section 2 of the permit.

6.5 Permit Conditions 3.2 and 4.2 specify that this concrete batch plant shall not operate simultaneously with any other rock crusher, concrete batch plant, or hot mix asphalt plant. Per the information in facility's August 9, 2004 application, this plant will not operate simultaneously with the other Burns Concrete plant under permit facility number 777-00242, which is located at the same site. Analysis for collocation of this source with other rock crusher, concrete batch plant, or hot mix asphalt plant was not conducted; all the production limits are developed under the assumption that this concrete plant will be operated alone. Should the facility be moved adjacent to another rock crusher, concrete batch plant, or hot mix asphalt plant, then a new permit application will have to be submitted and a collocation analysis will have to be performed.

6.6 Permit Condition 4.1 limits the plant's daily concrete production to 1,460 cy/day and 532,000 cy/yr when the facility is located in a PM_{10} nonattainment area. The daily production is limited to assure that the 24-hour average ambient impacts from the facility do not exceed the significant impact of 5 $\mu g/m^3$. The annual production is limited to assure that the annual average ambient impacts from the facility do not exceed the significant impact of 1 $\mu g/m^3$. The permittee will show compliance with these limits by monitoring and recording the concrete production on a daily basis and by monitoring and recording the monthly and annual production, as required in Section 2 of the permit.

6.7 Permit Condition 4.3 specifies that prior to moving to Sandpoint PM_{10} nonattainment area, the permittee needs to get DEQ approval. This is because Sandpoint SIP has specific modeling requirement for Sandpoint PM_{10} nonattainment area, which was not conducted for this permit. Should the facility be moved to that area, then a modeling analysis to satisfy Sandpoint SIP needs to be conducted.

7. PUBLIC COMMENT

A draft permit was provided for regional office review on November 30, 2004. No comments on the draft permit were received. The regional office asked some good questions. The questions were discussed between the state program office and the regional office.

A draft permit was provided for facility review on December 20, 2004. DEQ received the comments provide by facility's consultant on January 5, 2005. The final permit addressed the facility's comments.

An opportunity for public comment period on the PTC application was provided, in accordance with IDAPA 58.01.01.209.01.c., from October 29, 2004 to November 30, 2004. During this time, there were no comments on the application and no requests for a public comment period on DEQ's proposed action.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommend that Burns Concrete be issued final PTC No. P-040519 for the portable concrete batch plant. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

SC/sd Permit No. P-040519

G:\AIR QUALITY\STATIONARY SOURCES\SS LTD\PTC\BURNS P-040519\FINAL\P-040519 SOB.DOC

APPENDIX A

EMISSIONS INVENTORY AND AMBIENT IMPACT ANALYSIS

Emissions Calculation for Portable Concrete Batch Plants with Central Mix Drum (PM_{10} attainment area)

Facility Information

Company:	Burns Concrete, Inc.
Facility ID:	777-00347
Permit No.:	P-040519
Source Type:	Portable Concrete Batch Plant
Manufacturer:	Concrete Equipment Co. (Con-E-Co) Model 454w/12s Mixer

Ambient Impact Analysis

Total Ambient Concentration	
$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average
132.55	35.96

Production[g]

Maximum Hourly Production Rate:	450	yd^3/hr
Proposed Daily Production Rate:	9,600	yd^3/day
Proposed Annual Production Rate:	1,000,000	yd^3/yr
Cement Storage Silo No.1 Capacity:	3060	ft^3
Cement Storage Silo No.2 Compartment 2A Capacity:	1452	ft^3
Cement Storage Silo No.2 Compartment 2B Capacity:	1452	ft^3

PM_{10} Emissions

Point Source	Emission Factor[a, b]	Emission Rate, 24-hour average		Emission Rate, annual average	
	lb/yd^3	lb/hr[c]	lb/day[d]	lb/hr[e]	T/yr[f]
Mixer Baghouse, PJ-850 (Emissions from Weigh Hopper Loading and Central Mix Loading)	0.0049	1.96	47.04	0.559	2.45
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	0.0001	0.023	0.55	0.007	0.029
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	0.0001	0.011	0.26	0.003	0.014
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	0.0002	0.012	0.29	0.003	0.015
Facility Wide	0.036				18

[a] Emission factor for mixer Baghouse is the sum of emission factors for weigh hopper loading and for central mix loading (controlled) from AP-42 Table 11.12-4.

[b] Per the phone conversation with the facility's consultant on 1/5/05, the silo no.1 and compartment No.2A of silo No.2 store cement only, and compartment No.2B of silo No.2 stores flyash only. Therefore, emissions factor for cement storage silo No.1 and for cement storage silo No.2 compartment 2A is the emissions factor taken from AP-42 Table 11.12-4 for cement delivery to silo (with control); the emission factor for cement storage silo No.2 compartment 2B is the emissions factor taken from AP-42 Table 11.12-4 for cement supplement (flyash) delivery to silo (with control). By reviewing AP-42, Section 11.12 (10/01), it appears that the baghouse is a part of the process for cement transfer. Therefore, the PTE of the cement silo is the controlled emissions.

[c] Hourly emissions rate is based on 24-hour average. For Baghouse cem I, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem II, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem III, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 15% / (24 hours/day). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for emissions estimates is reasonable.

[d] Daily emissions is calculated as: hourly emissions rate, 24-hr average x 24 hr/day.

[e] Annual hourly emissions rate is calculated as: (annual emissions T/yr) /(8760 hours/yr) x (2000 lb/T)

[f] Annual emissions calculation. For Baghouse cem I, it is calculated as: (EF lb/yd^3) x (annual production in yd^3 /day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem II, it is calculated as: (EF lb/yd^3) x (annual production in yd^3/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem III, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 15% / (2000 lb/T). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for the emissions estimates is reasonable.

[g] Information from the applicant's submittal received by DEQ on 9/20/04

Ambient Impact Analysis for Portable Concrete Batch Plants with Central Mix Drum (PM_{10} attainment area)

Facility Information

Company:	Burns Concrete, Inc.
Facility ID:	777-00347
Permit No.:	P-040519
Source Type:	Portable Concrete Batch Plant
Manufacturer:	Concrete Equipment Co. (Con-E-Co) Model 454w/12s Mixer

Ambient Impact Analysis

Total Ambient Concentration (source impact + background)	
$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average
132.55	35.98

Modeling Output

Point Source	modeling output @ 1lb/hr or 0.126 g/s[1]		modeling output @ 1lb/hr or 0.126 g/s, 24-hour avg.[2]	modeling output @ 1lb/hr or 0.126 g/s, annual avg.[3]	modeling output @ its emissions rate[4]		Background concentration[5]		Total Ambient Concentration[6]		% of NAAQS	
	Max. Conc. @ m	$\mu g/m^3$	Screen3 conc. x 24-hour persistent factor of 0.4	Screen3 conc. x annul persistent factor of 0.08	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average
(Emissions from Weigh Hopper Loading and Central Mixer Loading)	722	41.27	16.5	3.3	32.36	1.847	100	34.1	132.55	35.98	88%	72%
Baghouse cam I, PJC900 (emissions from cement storage silo No.1)	213	8.975	3.6	0.7	0.08	0.005						
Baghouse cam II, PJC 450 (emissions from cement storage silo No.2A)	386	11.97	4.8	1.0	0.05	0.003						
Baghouse cam III, PJC 450 (emissions from cement storage silo No.2B)	386	11.97	4.8	1.0	0.08	0.003						
Facility Wide					32.55	1.86						

[1] Modeled ambient concentration and the distance from the respective emissions point were taken from output files of screen3

[2] converting hourly ambient concentration to 24-hour average ambient concentration

[3] converting hourly ambient concentration to annual average ambient concentration

[4] multiplying ambient concentration at 1lb/hr rate with emissions rates to obtain ambient concentration for each emissions unit.

[5] background concentration for portable source that obtained from modeling coordinator

[6] Adding ambient concentration to background concentration to obtain total ambient concentration

Emissions Calculation for Portable Concrete Batch Plants with Central Mix Drum (PM_{10} non-attainment area)

Facility Information

Company:	Burns Concrete, Inc.
Facility ID:	777-00347
Permit No.:	P-040519
Source Type:	Portable Concrete Batch Plant
Manufacturer:	Concrete Equipment Co. (Con-E-Co) Model 454w/12s Mixer

Production[g]

Maximum Hourly Production Rate:	450	yd^3/hr
Permitted Daily Production Rate:	1,460	yd^3/day
Permitted Annual Production Rate:	532,000	yd^3/yr
Cement Storage Silo No.1 Capacity:	3060	ft^3
Cement Storage Silo No.2 Compartment 2A Capacity:	1452	ft^3
Cement Storage Silo No.2 Compartment 2B Capacity:	1452	ft^3

Ambient Impact Analysis

Increased Concentration	
$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average
4.95	0.99
% of significant contribution	
99%	99%

PM_{10} Emissions

Point Source	Emission Factor[a, b]	Emission Rate, 24-hour average		Emission Rate, annual average	
	lb/yd^3	lb/hr[e]	lb/day[d]	lb/hr[e]	T/yr[f]
Mixer Baghouse, PJ-650 (Emissions from Weigh Hopper Loading and Central Mix Loading)	0.0049	0.30	7.15	0.298	1.30
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	0.0001	0.004	0.08	0.004	0.015
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	0.0001	0.002	0.04	0.002	0.007
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	0.0002	0.002	0.04	0.002	0.008
Facility Wide	0.036				9.576

[a] The emissions factor for mixer baghouse cem I and baghouse cem II is the sum of emission factors for weigh hopper loading and for central mix loading from AP-42 Table 11.12-4.

[b] Per the phone conversation with the facility's consultant on 1/5/05, the silo no.1 and compartment No.2A of silo No.2 store cement only, and compartment No.2B of silo No.2 stores flyash only. Therefore, emissions factor for cement storage silo No.1 and for cement storage silo No.2 compartment 2A is the emissions factor taken from AP-42 Table 11.12-4 for cement delivery to silo (with control); the emission factor for cement storage silo No.2 compartment 2B is the emissions factor taken from AP-42 Table 11.12-4 for cement supplement (flyash) delivery to silo (with control). By reviewing AP-42, Section 11.12 (10/01), it appears that the baghouse is a part of the process for cement transfer. Therefore, the PTE of the cement silo is the controlled

[e] Hourly emissions rate is based on 24-hour average. For Baghouse cem I, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem II, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (24 hours/day). For Baghouse cem III, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 15% / (24 hours/day). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for emissions estimates is reasonable.

[d] Daily emissions is calculated as: hourly emissions rate, 24-hr average x 24 hr/day.

[e] Annual hourly emissions rate is calculated as: (annual emissions T/yr) /(8760 hours/yr) x (2000 lb/T)

[f] Annual emissions calculation. For Baghouse cem I, it is calculated as: (EF lb/yd^3) x (annual production in yd^3/day) x 85% x (the capacity of silo No.1 / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem II, it is calculated as: (EF lb/yd^3) x (annual production in yd^3/day) x 85% x (the capacity of silo No.2 compartment 2A / the sum of capacity of silo No.1 and silo No.2 compartment 2A) / (2000 lb/T). For Baghouse cem III, it is calculated as: (EF lb/yd^3) x (daily production in yd^3/day) x 15% / (2000 lb/T). Per the information provided by the facility's consultant, the use of flyash in the production is from 0 to maximum 30 percent; using average 15% of flyash in the product for the emissions estimates is reasonable.

[g] Maximum hourly production rate and silo capacities were provided by the applicant.

Ambient Impact Analysis for Portable Concrete Batch Plants with Central Mix Drum (PM_{10} non-attainment area)

Facility Information

Company:	Burns Concrete, Inc.
Facility ID:	777-00347
Permit No.:	P-040519
Source Type:	Portable Concrete Batch Plant
Manufacturer:	Concrete Equipment Co. (Con-E-Co) Model 454w/12s Mixer

Ambient Impact Analysis

Increased Concentration	
$\mu g/m^3$, 24-	$\mu g/m^3$, annual average
4.95	0.99
% of significant contribution	
99%	99%

Modeling Output

Point Source	modeling output @ 1lb/hr or 0.126 g/s[1]		modeling output @ 1lb/hr or 0.126 g/s, 24-hour avg[2]	modeling output @ 1lb/hr or 0.126 g/s, annual avg[3]	modeling output @ emissions rate of each emissions point[4]		% of significant contribution	
	Max. Conc. @ m	$\mu g/m^3$	Screen3 conc. x 24-hour persistent factor of 0.4	Screen3 conc. x annul persistent factor of 0.08	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average	$\mu g/m^3$, 24-hour average	$\mu g/m^3$, annual average
Mixer Baghouse, PJ-850 (Emissions from Weigh Hopper Loading and Central Mix Loading)	722	41.27	16.51	3.30	4.92	0.982	99%	99%
Baghouse cem I, PJC900 (emissions from cement storage silo No.1)	213	8.975	3.59	0.72	0.01	0.003		
Baghouse cem II, PJC 450 (emissions from cement storage silo No.2A)	386	11.97	4.79	0.96	0.01	0.002		
Baghouse cem III, PJC 450 (emissions from cement storage silo No.2B)	386	11.97	4.79	0.96	0.01	0.002		
Facility Wide					4.950	0.988		

[1] Modeled ambient concentration and the distance from the respective emissions point were taken from output files of SCREEN3

[2] converting hourly ambient concentration to 24-hour average ambient concentration

[3] converting hourly ambient concentration to annual average ambient concentration

[4] multiplying ambient concentration from screen3 at 1lb/hr rate with emissions rates to obtain ambient concentration for each emissions unit.

APPENDIX B

SCREEN3 MODEL OUTPUT

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Burns Concrete, Mixer Baghouse (emissions from weigh hopper loading and central

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	7.9248
STK INSIDE DIAM (M)	=	0.4755
STK EXIT VELOCITY (M/S)	=	13.2893
STK GAS EXIT TEMP (K)	=	293.1500
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 9.983 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	26.88	1.66	1.62	NO
100.	27.39	2	2.5	2.5	800.0	15.51	19.39	10.82	NO
200.	28.21	3	1.5	1.5	480.0	20.56	23.89	14.49	NO
300.	31.57	5	1.0	1.0	10000.0	18.85	17.18	9.24	NO
400.	39.45	5	1.0	1.0	10000.0	18.85	22.23	11.25	NO
500.	40.24	5	1.0	1.0	10000.0	18.85	27.20	13.18	NO
600.	38.67	6	1.0	1.0	10000.0	17.87	21.43	10.09	NO
700.	41.23	6	1.0	1.0	10000.0	17.87	24.62	11.29	NO
800.	40.87	6	1.0	1.0	10000.0	17.87	27.78	12.31	NO
900.	39.53	6	1.0	1.0	10000.0	17.87	30.91	13.29	NO
1000.	37.68	6	1.0	1.0	10000.0	17.87	34.00	14.24	NO
1100.	35.55	6	1.0	1.0	10000.0	17.87	37.07	15.09	NO
1200.	33.44	6	1.0	1.0	10000.0	17.87	40.12	15.91	NO
1300.	31.40	6	1.0	1.0	10000.0	17.87	43.14	16.71	NO
1400.	29.49	6	1.0	1.0	10000.0	17.87	46.13	17.49	NO
1500.	27.70	6	1.0	1.0	10000.0	17.87	49.11	18.25	NO
1600.	26.04	6	1.0	1.0	10000.0	17.87	52.07	19.00	NO
1700.	24.52	6	1.0	1.0	10000.0	17.87	55.01	19.72	NO
1800.	23.11	6	1.0	1.0	10000.0	17.87	57.94	20.43	NO
1900.	21.81	6	1.0	1.0	10000.0	17.87	60.85	21.13	NO
2000.	20.62	6	1.0	1.0	10000.0	17.87	63.74	21.81	NO
2100.	19.55	6	1.0	1.0	10000.0	17.87	66.62	22.39	NO
2200.	18.57	6	1.0	1.0	10000.0	17.87	69.48	22.96	NO
2300.	17.66	6	1.0	1.0	10000.0	17.87	72.33	23.51	NO
2400.	16.83	6	1.0	1.0	10000.0	17.87	75.17	24.06	NO
2500.	16.06	6	1.0	1.0	10000.0	17.87	78.00	24.59	NO
2600.	15.34	6	1.0	1.0	10000.0	17.87	80.81	25.11	NO

2700.	14.67	6	1.0	1.0	10000.0	17.87	83.62	25.63	NO
2800.	14.06	6	1.0	1.0	10000.0	17.87	86.41	26.14	NO
2900.	13.48	6	1.0	1.0	10000.0	17.87	89.19	26.63	NO
3000.	12.94	6	1.0	1.0	10000.0	17.87	91.97	27.13	NO
3500.	10.79	6	1.0	1.0	10000.0	17.87	105.69	29.12	NO
4000.	9.198	6	1.0	1.0	10000.0	17.87	119.20	30.97	NO
4500.	7.971	6	1.0	1.0	10000.0	17.87	132.53	32.70	NO
5000.	7.003	6	1.0	1.0	10000.0	17.87	145.70	34.33	NO
5500.	6.222	6	1.0	1.0	10000.0	17.87	158.72	35.87	NO
6000.	5.582	6	1.0	1.0	10000.0	17.87	171.60	37.34	NO
6500.	5.048	6	1.0	1.0	10000.0	17.87	184.36	38.75	NO
7000.	4.596	6	1.0	1.0	10000.0	17.87	197.01	40.10	NO
7500.	4.223	6	1.0	1.0	10000.0	17.87	209.56	41.26	NO
8000.	3.900	6	1.0	1.0	10000.0	17.87	222.00	42.38	NO
8500.	3.619	6	1.0	1.0	10000.0	17.87	234.36	43.45	NO
9000.	3.372	6	1.0	1.0	10000.0	17.87	246.62	44.49	NO
9500.	3.153	6	1.0	1.0	10000.0	17.87	258.81	45.50	NO
10000.	2.959	6	1.0	1.0	10000.0	17.87	270.92	46.47	NO
15000.	1.782	6	1.0	1.0	10000.0	17.87	388.44	54.96	NO
20000.	1.269	6	1.0	1.0	10000.0	17.87	500.96	60.36	NO
25000.	0.9755	6	1.0	1.0	10000.0	17.87	609.76	64.92	NO
30000.	0.7866	6	1.0	1.0	10000.0	17.87	715.59	68.89	NO
40000.	0.5681	6	1.0	1.0	10000.0	17.87	920.23	74.54	NO
50000.	0.4416	6	1.0	1.0	10000.0	17.87	1117.43	79.24	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

722.	41.27	6	1.0	1.0	10000.0	17.87	25.35	11.53	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	41.27	722.	0.

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Burns Concrete, Baghouse Cem I PJC-900

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	25.9080
STK INSIDE DIAM (M)	=	0.4542
STK EXIT VELOCITY (M/S)	=	13.2849
STK GAS EXIT TEMP (K)	=	293.1500
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 9.102 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.1	320.0	42.84	1.54	1.49	NO
100.	2.678	1	2.5	2.7	800.0	32.68	26.92	14.08	NO
200.	8.890	1	1.0	1.1	320.0	42.84	50.20	29.70	NO
300.	8.758	2	1.0	1.1	320.0	42.84	52.43	30.53	NO
400.	8.717	3	1.0	1.1	320.0	42.37	44.89	26.86	NO
500.	8.777	3	1.0	1.1	320.0	42.37	54.97	32.77	NO
600.	7.973	3	1.0	1.1	320.0	42.37	64.88	38.61	NO
700.	6.980	3	1.0	1.1	320.0	42.37	74.64	44.37	NO
800.	7.103	4	1.0	1.2	320.0	41.60	55.75	27.16	NO
900.	7.098	4	1.0	1.2	320.0	41.60	62.05	29.80	NO
1000.	6.921	5	1.0	1.4	10000.0	35.38	51.01	21.80	NO
1100.	6.930	5	1.0	1.4	10000.0	35.38	55.63	23.13	NO
1200.	6.840	5	1.0	1.4	10000.0	35.38	60.21	24.41	NO
1300.	6.685	5	1.0	1.4	10000.0	35.38	64.76	25.66	NO
1400.	6.490	5	1.0	1.4	10000.0	35.38	69.27	26.88	NO
1500.	6.272	5	1.0	1.4	10000.0	35.38	73.75	28.06	NO
1600.	6.042	5	1.0	1.4	10000.0	35.38	78.20	29.22	NO
1700.	5.809	5	1.0	1.4	10000.0	35.38	82.62	30.35	NO
1800.	5.577	5	1.0	1.4	10000.0	35.38	87.02	31.45	NO
1900.	5.351	5	1.0	1.4	10000.0	35.38	91.39	32.54	NO
2000.	5.132	5	1.0	1.4	10000.0	35.38	95.74	33.60	NO
2100.	5.009	6	1.0	1.7	10000.0	34.01	66.60	22.33	NO
2200.	4.957	6	1.0	1.7	10000.0	34.01	69.46	22.90	NO
2300.	4.895	6	1.0	1.7	10000.0	34.01	72.31	23.45	NO
2400.	4.826	6	1.0	1.7	10000.0	34.01	75.15	24.00	NO
2500.	4.751	6	1.0	1.7	10000.0	34.01	77.98	24.53	NO
2600.	4.672	6	1.0	1.7	10000.0	34.01	80.80	25.06	NO

2700.	4.590	6	1.0	1.7	10000.0	34.01	83.60	25.58	NO
2800.	4.506	6	1.0	1.7	10000.0	34.01	86.40	26.08	NO
2900.	4.421	6	1.0	1.7	10000.0	34.01	89.18	26.58	NO
3000.	4.336	6	1.0	1.7	10000.0	34.01	91.95	27.08	NO
3500.	3.901	6	1.0	1.7	10000.0	34.01	105.68	29.07	NO
4000.	3.521	6	1.0	1.7	10000.0	34.01	119.19	30.92	NO
4500.	3.192	6	1.0	1.7	10000.0	34.01	132.52	32.65	NO
5000.	2.908	6	1.0	1.7	10000.0	34.01	145.69	34.29	NO
5500.	2.663	6	1.0	1.7	10000.0	34.01	158.71	35.83	NO
6000.	2.450	6	1.0	1.7	10000.0	34.01	171.59	37.30	NO
6500.	2.263	6	1.0	1.7	10000.0	34.01	184.36	38.71	NO
7000.	2.099	6	1.0	1.7	10000.0	34.01	197.01	40.07	NO
7500.	1.957	6	1.0	1.7	10000.0	34.01	209.55	41.23	NO
8000.	1.831	6	1.0	1.7	10000.0	34.01	222.00	42.34	NO
8500.	1.718	6	1.0	1.7	10000.0	34.01	234.35	43.42	NO
9000.	1.617	6	1.0	1.7	10000.0	34.01	246.62	44.46	NO
9500.	1.526	6	1.0	1.7	10000.0	34.01	258.80	45.47	NO
10000.	1.444	6	1.0	1.7	10000.0	34.01	270.91	46.44	NO
15000.	0.9193	6	1.0	1.7	10000.0	34.01	388.43	54.93	NO
20000.	0.6706	6	1.0	1.7	10000.0	34.01	500.95	60.34	NO
25000.	0.5234	6	1.0	1.7	10000.0	34.01	609.75	64.90	NO
30000.	0.4267	6	1.0	1.7	10000.0	34.01	715.59	68.87	NO
40000.	0.3122	6	1.0	1.7	10000.0	34.01	920.23	74.53	NO
50000.	0.2448	6	1.0	1.7	10000.0	34.01	1117.43	79.23	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

213.	8.975	1	1.0	1.1	320.0	42.84	53.31	31.99	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** INVERSION BREAK-UP FUMIGATION CALC. ***
CONC (UG/M**3) = 0.000
DIST TO MAX (M) = 223.54

DIST TO MAX IS < 2000. M. CONC SET = 0.0

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	8.975	213.	0.

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Burns Concrete, Baghouse Cem II (Silo No. 2A) PJC-450

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	25.2984
STK INSIDE DIAM (M)	=	0.3322
STK EXIT VELOCITY (M/S)	=	12.4120
STK GAS EXIT TEMP (K)	=	293.1500
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 4.250 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.1	320.0	36.89	1.21	1.16	NO
100.	4.289	1	2.0	2.1	640.0	31.09	26.90	14.05	NO
200.	11.64	1	1.0	1.1	320.0	36.89	50.08	29.49	NO
300.	11.31	2	1.0	1.1	320.0	36.89	52.31	30.33	NO
400.	11.95	3	1.0	1.1	320.0	36.57	44.76	26.64	NO
500.	10.89	3	1.0	1.1	320.0	36.57	54.87	32.59	NO
600.	9.334	3	1.0	1.1	320.0	36.57	64.79	38.45	NO
700.	9.655	4	1.0	1.1	320.0	36.06	49.28	24.23	NO
800.	9.506	4	1.0	1.1	320.0	36.06	55.66	26.96	NO
900.	9.063	4	1.0	1.1	320.0	36.06	61.96	29.63	NO
1000.	8.491	4	1.0	1.1	320.0	36.06	68.20	32.24	NO
1100.	8.287	5	1.0	1.4	10000.0	32.67	55.60	23.06	NO
1200.	8.041	5	1.0	1.4	10000.0	32.67	60.19	24.36	NO
1300.	7.748	5	1.0	1.4	10000.0	32.67	64.73	25.61	NO
1400.	7.432	5	1.0	1.4	10000.0	32.67	69.25	26.82	NO
1500.	7.108	5	1.0	1.4	10000.0	32.67	73.73	28.01	NO
1600.	6.787	5	1.0	1.4	10000.0	32.67	78.18	29.17	NO
1700.	6.475	5	1.0	1.4	10000.0	32.67	82.60	30.30	NO
1800.	6.175	5	1.0	1.4	10000.0	32.67	87.00	31.41	NO
1900.	6.077	6	1.0	1.7	10000.0	31.61	60.81	21.01	NO
2000.	6.028	6	1.0	1.7	10000.0	31.61	63.70	21.70	NO
2100.	5.932	6	1.0	1.7	10000.0	31.61	66.58	22.28	NO
2200.	5.827	6	1.0	1.7	10000.0	31.61	69.45	22.85	NO
2300.	5.715	6	1.0	1.7	10000.0	31.61	72.30	23.41	NO
2400.	5.599	6	1.0	1.7	10000.0	31.61	75.14	23.96	NO
2500.	5.481	6	1.0	1.7	10000.0	31.61	77.97	24.49	NO
2600.	5.361	6	1.0	1.7	10000.0	31.61	80.78	25.02	NO

2700.	5.241	6	1.0	1.7	10000.0	31.61	83.59	25.53	NO
2800.	5.122	6	1.0	1.7	10000.0	31.61	86.38	26.04	NO
2900.	5.005	6	1.0	1.7	10000.0	31.61	89.17	26.54	NO
3000.	4.889	6	1.0	1.7	10000.0	31.61	91.94	27.04	NO
3500.	4.338	6	1.0	1.7	10000.0	31.61	105.67	29.04	NO
4000.	3.873	6	1.0	1.7	10000.0	31.61	119.18	30.89	NO
4500.	3.482	6	1.0	1.7	10000.0	31.61	132.51	32.62	NO
5000.	3.151	6	1.0	1.7	10000.0	31.61	145.68	34.25	NO
5500.	2.869	6	1.0	1.7	10000.0	31.61	158.70	35.80	NO
6000.	2.627	6	1.0	1.7	10000.0	31.61	171.59	37.28	NO
6500.	2.417	6	1.0	1.7	10000.0	31.61	184.35	38.69	NO
7000.	2.235	6	1.0	1.7	10000.0	31.61	197.00	40.04	NO
7500.	2.077	6	1.0	1.7	10000.0	31.61	209.55	41.20	NO
8000.	1.939	6	1.0	1.7	10000.0	31.61	221.99	42.32	NO
8500.	1.815	6	1.0	1.7	10000.0	31.61	234.35	43.40	NO
9000.	1.706	6	1.0	1.7	10000.0	31.61	246.61	44.44	NO
9500.	1.607	6	1.0	1.7	10000.0	31.61	258.80	45.44	NO
10000.	1.518	6	1.0	1.7	10000.0	31.61	270.91	46.42	NO
15000.	0.9562	6	1.0	1.7	10000.0	31.61	388.43	54.91	NO
20000.	0.6944	6	1.0	1.7	10000.0	31.61	500.95	60.32	NO
25000.	0.5404	6	1.0	1.7	10000.0	31.61	609.75	64.88	NO
30000.	0.4397	6	1.0	1.7	10000.0	31.61	715.59	68.86	NO
40000.	0.3209	6	1.0	1.7	10000.0	31.61	920.23	74.51	NO
50000.	0.2511	6	1.0	1.7	10000.0	31.61	1117.42	79.21	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

386.	11.97	3	1.0	1.1	320.0	36.57	43.44	25.86	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** INVERSION BREAK-UP FUMIGATION CALC. ***
CONC (UG/M**3) = 0.000
DIST TO MAX (M) = 141.26

DIST TO MAX IS < 2000. M. CONC SET = 0.0

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	11.97	386.	0.

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Burns Concrete, Baghouse Cem II (Silo No. 2B) PJC-450

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	25.2984
STK INSIDE DIAM (M)	=	0.3322
STK EXIT VELOCITY (M/S)	=	12.4120
STK GAS EXIT TEMP (K)	=	293.1500
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 4.250 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.1	320.0	36.89	1.21	1.16	NO
100.	4.289	1	2.0	2.1	640.0	31.09	26.90	14.05	NO
200.	11.64	1	1.0	1.1	320.0	36.89	50.08	29.49	NO
300.	11.31	2	1.0	1.1	320.0	36.89	52.31	30.33	NO
400.	11.95	3	1.0	1.1	320.0	36.57	44.76	26.64	NO
500.	10.89	3	1.0	1.1	320.0	36.57	54.87	32.59	NO
600.	9.334	3	1.0	1.1	320.0	36.57	64.79	38.45	NO
700.	9.655	4	1.0	1.1	320.0	36.06	49.28	24.23	NO
800.	9.506	4	1.0	1.1	320.0	36.06	55.66	26.96	NO
900.	9.063	4	1.0	1.1	320.0	36.06	61.96	29.63	NO
1000.	8.491	4	1.0	1.1	320.0	36.06	68.20	32.24	NO
1100.	8.287	5	1.0	1.4	10000.0	32.67	55.60	23.06	NO
1200.	8.041	5	1.0	1.4	10000.0	32.67	60.19	24.36	NO
1300.	7.748	5	1.0	1.4	10000.0	32.67	64.73	25.61	NO
1400.	7.432	5	1.0	1.4	10000.0	32.67	69.25	26.82	NO
1500.	7.108	5	1.0	1.4	10000.0	32.67	73.73	28.01	NO
1600.	6.787	5	1.0	1.4	10000.0	32.67	78.18	29.17	NO
1700.	6.475	5	1.0	1.4	10000.0	32.67	82.60	30.30	NO
1800.	6.175	5	1.0	1.4	10000.0	32.67	87.00	31.41	NO
1900.	6.077	6	1.0	1.7	10000.0	31.61	60.81	21.01	NO
2000.	6.028	6	1.0	1.7	10000.0	31.61	63.70	21.70	NO
2100.	5.932	6	1.0	1.7	10000.0	31.61	66.58	22.28	NO
2200.	5.827	6	1.0	1.7	10000.0	31.61	69.45	22.85	NO
2300.	5.715	6	1.0	1.7	10000.0	31.61	72.30	23.41	NO
2400.	5.599	6	1.0	1.7	10000.0	31.61	75.14	23.96	NO
2500.	5.481	6	1.0	1.7	10000.0	31.61	77.97	24.49	NO
2600.	5.361	6	1.0	1.7	10000.0	31.61	80.78	25.02	NO

2700.	5.241	6	1.0	1.7	10000.0	31.61	83.59	25.53	NO
2800.	5.122	6	1.0	1.7	10000.0	31.61	86.38	26.04	NO
2900.	5.005	6	1.0	1.7	10000.0	31.61	89.17	26.54	NO
3000.	4.889	6	1.0	1.7	10000.0	31.61	91.94	27.04	NO
3500.	4.338	6	1.0	1.7	10000.0	31.61	105.67	29.04	NO
4000.	3.873	6	1.0	1.7	10000.0	31.61	119.18	30.89	NO
4500.	3.482	6	1.0	1.7	10000.0	31.61	132.51	32.62	NO
5000.	3.151	6	1.0	1.7	10000.0	31.61	145.68	34.25	NO
5500.	2.869	6	1.0	1.7	10000.0	31.61	158.70	35.80	NO
6000.	2.627	6	1.0	1.7	10000.0	31.61	171.59	37.28	NO
6500.	2.417	6	1.0	1.7	10000.0	31.61	184.35	38.69	NO
7000.	2.235	6	1.0	1.7	10000.0	31.61	197.00	40.04	NO
7500.	2.077	6	1.0	1.7	10000.0	31.61	209.55	41.20	NO
8000.	1.939	6	1.0	1.7	10000.0	31.61	221.99	42.32	NO
8500.	1.815	6	1.0	1.7	10000.0	31.61	234.35	43.40	NO
9000.	1.706	6	1.0	1.7	10000.0	31.61	246.61	44.44	NO
9500.	1.607	6	1.0	1.7	10000.0	31.61	258.80	45.44	NO
10000.	1.518	6	1.0	1.7	10000.0	31.61	270.91	46.42	NO
15000.	0.9562	6	1.0	1.7	10000.0	31.61	388.43	54.91	NO
20000.	0.6944	6	1.0	1.7	10000.0	31.61	500.95	60.32	NO
25000.	0.5404	6	1.0	1.7	10000.0	31.61	609.75	64.88	NO
30000.	0.4397	6	1.0	1.7	10000.0	31.61	715.59	68.86	NO
40000.	0.3209	6	1.0	1.7	10000.0	31.61	920.23	74.51	NO
50000.	0.2511	6	1.0	1.7	10000.0	31.61	1117.42	79.21	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

386.	11.97	3	1.0	1.1	320.0	36.57	43.44	25.86	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** INVERSION BREAK-UP FUMIGATION CALC. ***
CONC (UG/M**3) = 0.000
DIST TO MAX (M) = 141.26

DIST TO MAX IS < 2000. M. CONC SET = 0.0

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	11.97	386.	0.

APPENDIX C

AIRS INFORMATION

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Facility Name: Burns Concrete, Inc.
Facility Location: Portable
AIRS Number: 777-00347

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2	B							Portable
NO_x	B							Portable
CO	B							Portable
PM_{10}	B							Portable
PT (Particulate)	B							
VOC	B							Portable
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).