



**Air Quality Permitting  
Technical Memorandum**

**Permit to Construct No. 777-00065  
Hot-mix Asphalt Plant**

**NAMPA PAVING AND ASPHALT CO.  
NAMPA, IDAHO**

**Prepared By:**

**Robert E. Baldwin  
Air Quality Engineer, EIT**

**Project No. P-010008**

**Date Prepared:**

**March 21, 2002**

**Permit Status:**

**FINAL**

## **PURPOSE**

The purpose of 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).

## **PROJECT DESCRIPTION**

Nampa Paving and Asphalt Co. is proposing to modify their operation of a portable hot-mix asphalt (HMA) plant to function in both attainment and nonattainment areas within the state of Idaho. The modification is for burning used oil and No. 2 fuel oil in addition to Nampa Paving and Asphalt Co.'s permitted use of propane and natural gas. The standard PTC for a portable HMA plant also includes provisions for collocated operations in attainment areas with one other portable source (e.g., a rock crusher, HMA plant, or concrete batch plant) and any source that is operating in accordance with a permit-by-rule (IDAPA 58.01.01.201). The plant's maximum hourly throughput is 400 tons per hour (T/hr). The HMA facility will initially be located near Nampa, Idaho.

## **SUMMARY OF EVENTS**

- May 21, 2001            The Department of Environmental Quality received an application from Nampa Paving and Asphalt Co. for a HMA plant modification.
- March 21, 2002        The application was determined complete. A 30-day opportunity was provided to request a public comment period.

## **DISCUSSION**

### 1. Process Description

The facility is a portable drum-mix, HMA plant used for the production of asphaltic concrete. The dryer burner is permitted to fire on used oil, fuel oil, natural gas, or propane gas.

The standard PTC requested allows this HMA facility to collocate and simultaneously operate with one other portable plant (e.g., a rock crusher, HMA plant, or concrete batch plant) and any source which is operating in accordance with a permit-by-rule (IDAPA 58.01.01.201).

### 2. Equipment Listing

This standard permit analysis includes the following equipment as submitted in the application:

#### a. Portable Hot-Mix Asphalt Plant

Manufacturer/Model:	CMI Corp., Model PDM-300
Type:	Drum-mix
Throughput Capacity:	400 T/hr
Burner Fuel Type:	Used oil/diesel/natural gas/propane

#### b. Air Pollution Control Device

Manufacturer/Model:	CMI Corp, Model RA-31P Baghouse
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c. HMA Stack Information

Stack Height:	47.17 feet
Stack Diameter:	4.23 feet
Exhaust Gas Flowrate:	48,000 actual cubic feet per minute
Stack Exhaust Temperature:	290°F

3. Area Classification

The HMA facility is a portable source and may operate in both attainment and nonattainment areas throughout the state of Idaho.

4. Emission Estimates

Emission estimates for this HMA facility were calculated using a spreadsheet and emission factors obtained from the EPA's Compilation of Emission Factors (AP-42), Section 11.1, December 2000 edition. For purposes of maximum flexibility, the spreadsheet calculates the potential to emit (PTE) based on the worst-case emission factor of all possible fuels to be used at the hot-mix plant (used oil, diesel fuel oils, propane, and natural gas). The following air pollutant emissions are calculated by the spreadsheet: particulate matter (PM), particulate matter with an aerodynamic diameter of less than or equal to 10 microns (PM<sub>10</sub>), oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and carbon monoxide (CO). In calculating the PTE for each pollutant, the spreadsheet solves for the most-limiting pollutant, which will give the facility a PTE of less than 100 tons per any consecutive 12-month period (T/yr) (e.g., 99 T/yr). In addition, allowable operational limits for the facility, which correspond to the PTE of less than 100 T/yr, are given as part of the spreadsheet output. A copy of the spreadsheet showing all calculations and results is presented as Appendix A of this memorandum.

The emission estimates for this facility assume 400 T/hr throughput to a drum-mix HMA plant and fugitive dust emissions from specified sources (see Appendix A). The most-limiting pollutant, giving the facility a PTE of 99 T/hr, is CO when burning used oil. If the HMA plant fired on No. 2 fuel oil, the spreadsheet output indicates the throughput for attainment, unclassified, and nonattainment areas would be 1,523,077 tons of asphalt per year.

Toxic emissions were analyzed in the HMA plant. As shown in Appendix A, when burning used oil, nickel and formaldehyde emissions are estimated to exceed the acceptable ambient concentrations for carcinogens (AACC) at full capacity (400 T/hr, 8,760 hours per year, 3,504,000 T/yr, 290°F stack temperature). When limited to 1,012,033 T/yr of asphalt using used oil as the burner fuel, the AACCs are not exceeded. Therefore, the permit will include limits on the amount of throughput based on this toxics analysis.

5. Modeling

Modeling of the asphalt plant stack was conducted using the EPA-approved SCREEN 3 computer-run model. The maximum one-hour impact from the dryer stack was calculated to be 1.72 micrograms per cubic meter (µg/m<sup>3</sup>) using a 1 pound per hour unity emission rate input to the model. The spreadsheet calculates the ambient impact for each air pollutant (PM, PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and CO) based on the calculated pound-per-hour emission rate, averaging periods, and background concentrations. The spreadsheet solves for the most-limiting pollutant in attainment areas and gives

appropriate operational limits that protect the applicable National Ambient Air Quality Standard as defined in IDAPA 58.01.01.577, Acceptable Ambient Concentrations in IDAPA 58.01.01.585, and AACC in IDAPA 58.01.01.586. In addition, the spreadsheet calculates the most-limiting pollutant in nonattainment areas and gives operational limits to protect applicable significant contribution requirements, as defined in IDAPA 58.01.01.006.89. The modeling was based on an exit stack gas temperature of 290°F. A model of this same facility with an exit gas temperature of 270°F indicates a 1.81 ug/m<sup>3</sup> impact. Application of this impact with the carcinogenic analysis indicates an annual throughput reduction to 961,711 tons. All SCREEN modeling output files are presented as Appendix B of this memo. Spreadsheet ambient impact calculations and results are presented as Appendix A.

## 6. Facility Classification

Hot-mix asphalt plants (including collocated operations producing asphalt, concrete, and aggregate) are not designated facilities as defined in IDAPA 58.01.01.006.27. This plant is not a major facility as defined in IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. The Standard Industrial Classification code for this HMA facility is 2951. The AIRS facility classification for this facility is "SM" because the uncontrolled potential to emit is greater than 100 T/yr.

## 7. Regulatory Review

The following rules and regulations were reviewed for this permit analysis:

- |    |                                     |  |
|----|-------------------------------------|--|
| a. | <u>IDAPA 58.01.01.201</u>           | Permit to Construct  |
| b. | <u>IDAPA 58.01.01.202</u>           | Application Procedures   |
| c. | <u>IDAPA 58.01.01.203</u>           | Permit Requirements for New and Modified Stationary Sources  |
| d. | <u>IDAPA 58.01.01.209</u>           | Procedures for Issuing Permits   |
| e. | <u>IDAPA 58.01.01.210</u>           | Demonstration of Preconstruction Compliance with Toxic Standards   |
| f. | <u>IDAPA 58.01.01.211</u>           | Conditions for Permits to Construct  |
| g. | <u>IDAPA 58.01.01.212</u>           | Obligation to Comply   |
| h. | <u>IDAPA 58.01.01.577</u>           | Ambient Air Quality Standards  |
| i. | <u>IDAPA 58.01.01.585 &amp; 586</u> | Toxic Air Pollutants Non-carcinogenic and Carcinogenic Increments  |
| j. | <u>IDAPA 58.01.01.625</u>           | Visible Emissions  |
| k. | <u>IDAPA 58.01.01.650</u>           | Rules for Control of Fugitive Dust   |
| l. | <u>IDAPA 58.01.01.725</u>           | Rules for Sulfur Content of Fuels  |
| m. | <u>IDAPA 58.01.01.805</u>           | Rules for the Control of Hot-mix Asphalt Plants  |
| n. | <u>40 CFR Part 60</u>               | This facility is an affected facility and is subject to regulation in accordance with 40 CFR Part 60, Subpart I, " <i>Standards of Performance for Hot-mix Asphalt Facilities</i> ". |
| o. | <u>40 CFR 279</u>                   | Standards for the Management of Used Oil   |

8. Permit Coordination

This HMA plant is not a major facility as defined by IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. However, issued Permit to Construct No. 777-00065 dated April 10, 1998, has indicated that it is a New Source Performance Standards-affected facility (40 CFR Part 60, Subpart I), and as such, it is a Tier I source as defined by IDAPA 58.01.01.006.104(b). In accordance with IDAPA 58.01.01.301.02(b), Tier I sources not located at major facilities do not require a Tier I operating permit until June 1, 2006, if registered, unless an earlier date is required by an applicable standard or the EPA determines no requirement for a Tier I operating permit.

9. AIRS Information

The AIRS database will be updated to include this modified permit. AIRS forms are included as Appendix C of this technical analysis.

**FEES**

This HMA plant is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration and registration fees in accordance with IDAPA 58.01.01.526 are not applicable.

**RECOMMENDATION**

Based on review of application materials and state and federal rules and regulations, staff recommends that Nampa Paving and Asphalt Co. be issued a modified PTC for a portable HMA facility. An opportunity for public comment period was held, no entity requested a comment period, and the project does not involve Prevention Signification Deterioration PTC requirements.

**APPENDIX A**

**SPREADSHEET EMISSIONS DATA  
(USED OIL)**

**NAMPA PAVING AND ASPHALT CO.**

**INPUT SECTION - enter info in highlighted areas only**

**Company:** Nampa Paving and Asphalt Co.  
**Permit Engineer:** Robert E. Baldwin  
**Date:** 3/21/02  
**Filename:** Emissions

**Enter the HMA Plant Type:** B (A = Batch Mix Hot Mix Asphalt Plant)  
 (B = Drum Mix Hot Mix Asphalt Plant)

**Dryer Fuel Type:** B (A = Natural Gas-Fired Dryer)  
 (B = Oil-Fired Dryer)

**Enter Dryer Stack Flow Rate:** 48,000 [=] actual cubic feet per minute (acfm)  
**Enter Dryer Stack Temperature:** 290 [=] temperature (-uoF)  
**Enter Dryer Stack Moisture:** 18.00 [=] moisture wt % (Default 18 wt%)  
**Enter Dryer Stack Pressure:** 29.92 [=] stack pressure (Default 29.92 "Hg)  
**Calculated Corrected Flow Rate:** 27,704 [=] dry standard cubic feet per minute (dscfm)

**Enter HMA Maximum Capacity:** 400 [=] Ton/hr (Asphalt Throughput)

**Enter HMA Modeled Concentration:** 1.72 [=] µg/m-u3, ( 1-hr concentration @ 1 lb/hr)

**Is a PM performance test required for this HMA plant?** Y or N (based on 40 CFR 60.90 Requirements)

**Does Plant Require a Generator?** Y or N

1500  
 65  
 10.00

**SPREADSHEET DATA - information used by spreadsheet**

State Wide Background Concentrations for Criteria Air Pollutants				
	1-hr	3-hr	8-hr	24-hr Annual
PM-10				32.7
CO	11400			123
NO-dx			5130	40
SO-dx		543	144	23.5

**Parameters used in the Fugitive Emission Calculations**  
 Mean Wind Speed (U) 10 [=] mph  
 Material Moisture Content 2.5 [=] %  
 (M)  
 Particle Size Multiplier (k) 0.35 [=] dimensionless  
 PM-10 (<10 µm) 0.0020 [=] lb/T  
 Emission Factor-u1 0.0053 [=] lb/T  
 PM-u2  
 Notes: -u1 EF = k\*0.0032\*(U/5)^1.3/(M/2)^1.4  
 Drop-Point Equation, Rating "A." AP-42, 5th Ed. p.13.2.4-3.  
 Assumptions: Wind Speed = 10 mph; Moisture = 2.5%; and  
 Aggregate = 94% of product.

**FACILITY CLASSIFICATION INPUT**

**Enter Annual Emission Limit:** 100 [=] T/yr  
 Note: Use 100 T/yr for Title V Limitation  
 Use 250 T/yr for PSD Limitation  
 For the standard HMA permit, use 100 T/yr.

PERMIT REQUIREMENTS SECTION - enforceable permit limits  
 AIRS Facility Classification: A2

Non-attainment Area		Attainment Area	
Allowable Emission Limits		Allowable Emission Limits	
9.5 lb/hr of PM	99.0 T/yr of CO	9.5 lb/hr of PM	99.0 T/yr CO
HMA Dryer Stack:	NA T/yr	HMA Dryer Stack:	NA T/yr
Generator:	NA T/yr	Generator:	NA T/yr
HMA Plant Throughput Limits:	1,523,077 T/yr	HMA Plant Throughput Limits:	1,523,077 T/yr

Collocated Attainment Areas		Collocated Attainment Areas	
Allowable Emission Limits		Allowable Emission Limits	
9.5 lb/hr of PM	49.5 T/yr of CO	CO 1-hr Standard minutes/1-hr	CO 8-hr Standard hr/8-hr
HMA Dryer Stack:	NA T/yr	60.0	3.0
Generator:	NA T/yr		8.0
HMA Plant Throughput Limits:	761,538 T/yr		

INPUTS TO PERMIT TO CONSTRUCT (PTC)		Value	Units
<b>Section B "Attainment Area When Not Collocated"</b>			
Section B.1.1 Facility Throughput Limits:		1,523,077	T/yr
Section B.1.3 Generator Hours of Operation:		#N/A 1,523,077 NA NA	T/day T/yr hr/year hr/day
<b>Section C "Attainment Area When Collocated"</b>			
Section C.1.3 Facility Throughput Limits:		761,538	T/yr
Section C.1.4 Generator Hours of Operation:		#N/A 761,538 NA NA	T/day T/yr hr/year hr/day



Section D "Nonattainment Area"

Section D.1.1 Facility Throughput Limits:	Annual Throughput Limit <<OR>>	T/yr
Daily Throughput Limit	7,345	T/day
Annual Throughput Limit	1,523,077	T/yr
Annual Hours of Operation	NA	hr/year
Daily Hours of Operation	NA	hr/day

Section D.1.3 Generator Hours of Operation:

Section D.1.3 Generator Hours of Operation:	Annual Throughput Limit <<AND/OR>>	hr/day
Daily Hours of Operation	NA	hr/day

DRYER EMISSION RATE CALCULATIONS

Pollutant	DRYER STACK		Emission Rate (Controlled)
	Emission Factor [=] lb/ton	Emission Rate (Uncontrolled) [=] lb/hr	
Total PM	19.00	7,600.00	9.50
Total PM-10	[=] gr/dscf 0.04	1,720.00	9.50
CO	[=] lb/ton 0.130	52.00	52.00
NO-dx	0.055	22.00	22.00
SO-d2	0.058	23.20	23.20

HMA emission factors for CO, NO-dx, SO-d2 and uncontrolled PM & PM-10 are from AP-42 Section 11.1. Controlled PM & PM-10 is from the NSPS 0.04 gr/dscf.

GENERATOR EMISSION RATE CALCULATIONS

Pollutant	GENERATOR STACK		Emission Rate (Controlled)
	Emission Factor [=] lb/hp-hr	Emission Rate (Uncontrolled) [=] lb/hr	
Total PM	N/A	0.00	0.00
Total PM-10	N/A	0.00	0.00
CO	N/A	0.00	0.00
NO-dx	N/A	0.00	0.00
SO-d2	N/A	0.00	0.00

Generator emission factors are from AP-42 Section 3.3 and 3.4.

MODELING ANALYSIS CALCULATIONS FOR ATTAINMENT AREAS

Pollutant	Allowable Impacts			Permitted Impacts		
	NAAQS		< 100 TPY Hours of Operation [=] hr/year	NAAQS		< 100 TPY Calculated Emission [=] ton/year
	Hours of Operation [=] hr/day	Hours of Operation [=] hr/year		Calculated 24-hr Impact [=] µg/m3	Calculated Annual Impact [=] µg/m3	
PM-10	N/S 24.0	N/S 8,760	8,760 3,808	6.54 35.78	0.57 3.11	22.42 99.00
CO -ua			1.0			89.44
CO -ub			8.0			62.61
NO-dx	N/S 24.0	N/S 8,760	8,760 8,534	15.96	1.32 1.39	41.88 44.17
SO-d2 -uc			3.0			35.91

Limited to 99.0 T/yr.

MODELING ANALYSIS CALCULATIONS FOR NONATTAINMENT AREAS

Pollutant	Allowable Impacts			Permitted Impacts			
	NAAQS			NAAQS			
	Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Other -ua,b,c	Calculated 24-hr Impact [=] µg/m3	Calculated Annual Impact [=] µg/m3	Calculated Other -ua,b,c	Calculated Emissions [=] ton/year
PM	N/S	N/S	N/A	5.00	0.57		22.42
PM-10	18.4	6,702		27.37	3.11	89.44	99.00
CO	N/S	N/S	1.0				
CO -ua			8.0				
CO -ub			3.0				
NO-dx	N/S	8,760			1.32		41.88
SO-d2	24.0	8,760		15.27	1.39		44.17
SO-d2 -uc						35.91	

FUGITIVE EMISSION CALCULATIONS FOR ATTAINMENT AREAS

	PM	PM-10
Pre-Dryer Source Emissions (=) lb/hr		
Loader -> Cold Aggregate Bin	2.01	0.76
Cold Aggregate Bin -> Conveyor	2.01	0.76
Conveyor -> Drum Dryer	2.01	0.76
Total Pre-Dryer Source Emissions	6.02	2.28
Post-Dryer Source Emissions		
Screening Process	#N/A	#N/A
Screen -> Hot Blins	#N/A	#N/A
Hot Blins -> Weigh Hopper	#N/A	#N/A
Weigh Hopper -> Pug Mill	#N/A	#N/A
Total Post-Dryer Source Emissions	#N/A	#N/A
Scavenger Control Efficiency	#N/A	#N/A
Total Uncontrolled Emissions (=) lb/hr	6.02	2.28
Total Uncontrolled Emissions (=) T/yr	11.45	4.33
Total Controlled Emissions (=) lb/hr	6.02	2.28
Total Controlled Emissions (=) T/yr	11.45	4.33

FUGITIVE EMISSION CALCULATIONS FOR NONATTAINMENT AREAS

	PM	PM-10
Pre-Dryer Source Emissions (=) lb/hr		
Loader -> Cold Aggregate Bin	2.01	0.76
Cold Aggregate Bin -> Conveyor	2.01	0.76
Conveyor -> Drum Dryer	2.01	0.76
Total Pre-Dryer Source Emissions	6.02	2.28
Post-Dryer Source Emissions -u2		
Screening Process	#N/A	#N/A
Screen -> Hot Blins	#N/A	#N/A
Hot Blins -> Weigh Hopper	#N/A	#N/A
Weigh Hopper -> Pug Mill	#N/A	#N/A
Total Post-Dryer Source Emissions	#N/A	#N/A
Scavenger Control Efficiency	#N/A	#N/A
Total Uncontrolled Emissions (=) lb/hr	6.02	2.28
Total Uncontrolled Emissions (=) T/yr	11.45	4.33
Total Controlled Emissions (=) lb/hr	6.02	2.28
Total Controlled Emissions (=) T/yr	11.45	4.33

Source: National Asphalt Pavement Association

-ua CO 1-hr Averaging Period

-ub CO 8-hr Averaging Period

-uc SO-d2 3-hr Averaging Period

SPREADSHEET SUMMARY - results of emission and modeling calcs for all pollutants

**ATTAINMENT & UNCLASSIFIABLE AREAS**

**NONATTAINMENT AREAS**

ATTAINMENT & UNCLASSIFIABLE AREAS		NONATTAINMENT AREAS	
Uncontrolled	Controlled	Dryer	Uncontrolled
14469.2 T/yr	18.1 T/yr	PM	14469. T/yr
3274.6 T/yr	18.1 T/yr	PM-10	18.1 T/yr
99.0 T/yr	99.0 T/yr	CO	99.0 T/yr
41.9 T/yr	41.9 T/yr	NOx	41.9 T/yr
44.2 T/yr	44.2 T/yr	SO-d2	44.2 T/yr
0.0 T/yr	0.0 T/yr	Generator	0.0 T/yr
0.0 T/yr	0.0 T/yr	PM	0.0 T/yr
0.0 T/yr	0.0 T/yr	PM-10	0.0 T/yr
0.0 T/yr	0.0 T/yr	CO	0.0 T/yr
0.0 T/yr	0.0 T/yr	NOx	0.0 T/yr
0.0 T/yr	0.0 T/yr	SO-d2	0.0 T/yr
11.5 T/yr	11.5 T/yr	Fugitives	11.5 T/yr
4.3 T/yr	4.3 T/yr	PM	4.3 T/yr
4.3 T/yr	4.3 T/yr	PM-10	4.3 T/yr
14480.7 T/yr	29.5 T/yr	Total -u1	14480. T/yr
3278.9 T/yr	22.4 T/yr	PM	22.4 T/yr
99.0 T/yr	99.0 T/yr	PM-10	99.0 T/yr
41.9 T/yr	41.9 T/yr	CO	41.9 T/yr
44.2 T/yr	44.2 T/yr	NOx	41.9 T/yr
		SO-d2	44.2 T/yr
3278.9 [-] T/yr of PM-10	99.0 [-] T/yr of CO	Title V PTE Summary -u2	3278.9 [-] T/yr of PM-10
14480.7 [-] T/yr	99.0 [-] T/yr	Facility PTE	14480. [-] T/yr
		Summary	
Enforceable Limits - Attainment Areas	24.0 hr/day	Enforceable Limits - Non-Attainment Areas	18.4 hr/day
	3,808 hr/yr		3,808 hr/yr
Dryer Controlled Emission Rates		Dryer Controlled Emission Rates	
9.5 lb/hr	18.1 T/yr	PM/PM-10	18.1 T/yr
52.0 lb/hr	99.0 T/yr	CO	99.0 T/yr
22.0 lb/hr	41.9 T/yr	NOx	41.9 T/yr
23.2 lb/hr	44.2 T/yr	SO-d2	44.2 T/yr
Generator Controlled Emission Rates		Generator Controlled Emission Rates	
0.0 lb/hr	0.0 T/yr	PM	0.0 T/yr
0.0 lb/hr	0.0 T/yr	PM-10	0.0 T/yr
0.0 lb/hr	0.0 T/yr	CO	0.0 T/yr
0.0 lb/hr	0.0 T/yr	NOx	0.0 T/yr
0.0 lb/hr	0.0 T/yr	SO-d2	0.0 T/yr

-u1 Total is the dryer, generator and fugitives added together for total PTE.

-u2 Title V PTE summary does not account for PM, only PM-10.

Attainment Area - Collocated Units - Calculations						
Collocation Ambient Air Quality Standards - Calculations						
Pollutant	(1-hr,3-hr,8-hr,& 24-hr standards are cut in half for collocation)				Annual (50% Attainment Hours)	
	1-hr	3-hr	8-hr	24-hr		
PM						
PM-10				6.964948694	8.365942	
CO	14210.56		2372.392			
NO-dx					29.34209	
SO-d2		342.5864		94.5384	27.5562	
TOC						

Background Concentrations -- Attainment/Non-Classifiable Areas (ug/m3)						
Pollutant	1-hr	3-hr	8-hr	24-hr	Annual	
	PM					
PM-10					123	32.7
CO	11400		5130			40
NO-dx			543		144	23.5
SO-d2						
TOC						

1.72 ug/m<sup>3</sup>

**Emissions Analysis for Carcinogenic Pollutants**

Pollutant	HMA Emission Factor, lb/ton	Actual, lb/hr	EL Standard, lb/hr	Actual Annual Ambient Conc., ug/m <sup>3</sup>	AACC, ug/m <sup>3</sup> (annual average)	Annual Hours of Operation to Meet AACC or EL	Annual Tonnage Limit to Meet AACC
Arsenic	5.60E-07	2.24E-04	1.56E-06	4.82E-05	2.30E-04		
Nickel AP-42	6.30E-05	2.52E-02	2.70E-05	5.42E-03	4.20E-03	6,791	2,716,279
Cadmium	4.10E-07	1.64E-04	3.70E-06	3.53E-05	5.6E-04		
Hexavalent Chromium*	4.5E-07	1.80E-04	5.60E-07	3.87E-05	8.30E-05		
Acetaldehyde	0.0013	5.20E-01	3E-03	1.12E-01	9.5E-01		
Benzene*	0.00039	1.56E-01	8.0E-04	3.35E-02	1.2E-01		
Formaldehyde*	3.1E-03	1.24E+00	5.1E-04	2.67E-01	7.7E-02	2,530	1,012,033
Benzo(a)pyrene	9.8E-09	3.92E-06	2E-06	8.43E-07	3E-04		
Beryllium	0.00E+00	0.00E+00	2.80E-05	0.00E+00	0.0042		

\* Note: Hexavalent chromium, nickel, formaldehyde and benzene emission factors are identical to that analyzed for #2 fuel oil in standard PTC review.

Source: AP-42, 12/00, Tables 11.1-10 and 11.1-12, and 3.4-3 and 3.4-4.

1.81ug/m<sup>3</sup>

**Emissions Analysis for Carcinogenic Pollutants**

Pollutant	HMA Emission Factor, lb/ton	Actual, lb/hr	EL Standard, lb/hr	Actual Annual Ambient Conc., ug/m <sup>3</sup>	AACC, ug/m <sup>3</sup> (annual average)	Annual Hours of Operation to Meet AACC or to Meet AACC EL	Annual Tonnage Limit
Arsenic	5.60E-07	2.24E-04	1.56E-06	5.07E-05	2.30E-04	6,453	2,581,215
Nickel							
AP-42	6.30E-05	2.52E-02	2.70E-05	5.70E-03	4.20E-03		
Cadmium	4.10E-07	1.64E-04	3.70E-06	3.71E-05	5.6E-04		
Hexavalent Chromium*	4.5E-07	1.80E-04	5.60E-07	4.07E-05	8.30E-05		
Acetaldehyde	0.0013	5.20E-01	3E-03	1.18E-01	9.5E-01		
Benzene*	0.00039	1.56E-01	8.0E-04	3.53E-02	1.2E-01		
Formaldehyde*	3.1E-03	1.24E+00	5.1E-04	2.81E-01	7.7E-02	2,404	961,711
Benzo(a)pyrene	9.8E-09	3.92E-06	2E-06	8.87E-07	3E-04		
Beryllium	0.00E+00	0.00E+00	2.80E-05	0.00E+00	0.0042		

\* Note: Hexavalent chromium, nickel, formaldehyde and benzene emission factors are identical to that analyzed for #2 fuel oil in standard PTC review.

Source: AP-42, 12/00, Tables 11.1-10 and 11.1-12, and 3.4-3 and 3.4-4.

**APPENDIX B**  
**MODELING RESULTS**  
**NAMPA PAVING AND ASPHALT CO.**





MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:  
 358. 1.720 4 20.0 20.7 6400.0 20.98 26.83 14.28

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) = 1.748  
 DIST TO MAX (M) = 2769.47

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

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.720	358.	0.
INV BREAKUP FUMI	1.748	2769.	--



MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:  
 348. 1.809 4 20.0 20.7 6400.0 20.48 26.13 13.95

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) = 1.845  
 DIST TO MAX (M) = 2660.41

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

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.809	348.	0.
INV BREAKUP FUMI	1.845	2660.	--

**APPENDIX C**  
**AIRS INFORMATION**  
**NAMPA PAVING AND ASPHALT CO.**

**ABBREVIATED AIRS DATA ENTRY SHEET - HOT MIX ASPHALT PLANTS**

Name of Facility: Nampa Paving and Asphalt Co.

AIRS/Permit #: 777-00065

Permit Issue Date: XXXX, 2002

<u>Source/Emissions Unit Name (25 spcs)</u> (Please use name as indicated in permit)	<u>SCC #</u> (8 digit #)	<u>Air Program</u> (SIP/NESHAP/NSPS/PSD)
<u>HMA Drum Dryer</u>	<u>30500201</u>	<u>SIP/NSPS</u>
<u>Agg Handling/Piles</u>	<u>30500204</u>	<u>SIP</u>
<u>Haul Roads</u>	<u>30500290</u>	<u>SIP</u>
<u>Property Boundary</u>	<u>30588801</u>	<u>SIP</u>

**RETURN TO PAT RAYNE**  
AIRS-PT.LST (9/95)