Air Quality Permitting
Statement of Basis

September 14, 2006

Permit No. P-060114

Inland Asphalt Company, Portable

Facility ID No. 777-00047

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FINAL PERMIT

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Acronyms, Units, and Chemical Nomenclatures

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
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
°F	degrees Fahrenheit
g/sec	grams per second
gr/dscf	grain (1 lb = 7,000 grains) per dry standard cubic foot
HAPs	Hazardous Air Pollutants
HMA	hot-mix asphalt
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
K	Kelvin
kW	kilowatt
lb/hr	pound per hour
LPG	liquefied petroleum gas
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PCB	polychlorinated biphenyl
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
PTE	potential to emit
PWR	process weight rate
RAP	recycled asphalt pavement
RCRA	Resource Conservation and Recovery Act
RFO4	reprocessed fuel oil, Grade 4
SIC	Standard Industrial Classification
SM	synthetic minor
SO_2	sulfur dioxide
TAP	toxic air pollutant
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound
w/o	weight percent

1. PURPOSE

The purpose of this document is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, Procedures and Requirements for Permits to Construct. This permit to construct (PTC) replaces PTC 777-00047, dated May 27, 1994, for the Inland Asphalt Company Cedarapids No. 10032 portable hot-mix asphalt (HMA) facility.

2. FACILITY DESCRIPTION

The Inland Asphalt Cedarapids No. 10032 portable HMA facility consists of a drum mix asphalt plant that includes a counterflow drum dryer, an aboveground asphalt oil storage tank with an electric tank heater, a baghouse, storage silos, conveyors and feed bins, aggregate stock piles, and haul trucks. The 900 kW generator supplies power to the facility when line power is not available.

Drum mix asphalt plants may be of either parallel flow design or the counterflow design. In either design, aggregate (gravel) is dried in the drum and mixed with liquid asphalt cement to produce hot-mix asphalt which is used primarily for road and parking lot construction. The production of hot-mix asphalt includes aggregate handling operations which may include front end loaders, storage bins, conveyance systems, stock piles and haul trucks.

3. FACILITY / AREA CLASSIFICATION

Table 3.1 shows the potential to emit for criteria air pollutants and hazardous air pollutant emissions from the drum dryer, and generator for AIRS facility classification purposes. This estimate is based on an AP-42 uncontrolled emission factor for PM_{10} (i.e., emissions without the baghouse), and operation of the drum dryer and generator at maximum capacity. The Inland Asphalt Cedarapids No. 10032 HMA facility is classified as a synthetic minor facility because as shown in the table, without permit limits on its potential to emit, the total emissions of hazardous air pollutants (HAPs) would exceed 25 tons per year and the PM_{10}, CO, NO_x, and SO_2 emissions would exceed 100 tons per year each. The AIRS classification is therefore "SM".

Table 3.1 EMISSION INVENTORY ESTIMATES – PM AND CRITERIA POLLUTANTS

POTENTIAL TO EMIT WITHOUT LIMITS[a]				POTENTIAL TO EMIT WITH PERMIT LIMITS		
Pollutant	Drum Dryer	Generator	Total Emissions	Drum Dryer	Generator	Total Emissions
	(T/yr)	(T/yr)	(T/yr)	(T/yr)	(T/yr)	(T/yr)
PM (total)	61,320	16.4	313.4	4.17	1.31	5.48
PM_{10} (total)	14,016	11.5	219.5	4.17	1.31	5.48
CO	284	35.1	319.1	65	4.01	69
NO_x	120	85.9	205.9	27.5	9.81	37.3
SO_2	127	10.7	137.7	29	1.22	30.2
VOC	64	13.3	77.3	8	1.52	9.52

[a]Maximum operation without limits was very conservatively estimated as continuous, i.e., for 8,760 hours per year for each emission source. Downtime due to maintenance or relocation was not estimated.
[b]Highest single HAP emission is formaldehyde.

The facility is a portable facility and may locate anywhere in the state of Idaho except in any PM_{10} nonattainment area.

The AIRS information provided in Appendix C defines the classification for each regulated air pollutant for the Inland Asphalt Cedarapids No. 10032 HMA facility. This information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

Inland Asphalt operates a portable HMA plant that was previously permitted to use a Cedarapids 100-32 drum dryer with maximum rated output of 500 tons of HMA per hour for a maximum of 1,000 hours per year (500,000 tons per year), burning used oil. Particulate matter (PM) emissions from the drum dryer were described as being vented to a fabric filter, and the permit reflects the use of a Cedarapids Model 11060P Fabric Filter, an air flow rate of 56,000 actual cubic feet per minute (acfm), with a 6 to 1 air cloth ratio, and an exhaust temperature of 275 degrees Fahrenheit (°F). Electrical power was provided by a 900 kW diesel generator. The existing permit requires that special DEQ approval must be received by the permittee prior to relocating to any PM_{10} nonattainment area.

Inland Asphalt has submitted a PTC application to allow burning used oil in addition to burning ASTM Grade 2 fuel oil to fire the drum dryer. The maximum throughput requested for the HMA plant is 500 tons per hour (T/hr), and 500,000 tons per consecutive 12-month period (tons per year, T/yr), operating a maximum of 24 hours per day.

When line power is not available, electrical power will be provided by a 900 kW generator that will operate for a maximum of 24 hours per day and a maximum of 1,000 hours per consecutive 12-month period.

The application does not include a request to operate in any PM_{10} nonattainment area. Table 4.1 shows the comparison of the existing permitted operations and the changes proposed in this PTC.

Table 4.1 SUMMARY OF EXISTING PERMITTED OPERATIONS AND PROPOSED CHANGES

Operation/Process	Existing Permit No. 777-00047	Proposed Changes
Production	281Tons per hours of HMA per year Emissions estimate indicated a 60,000 tons per year annual throughput	500 tons per hour with an annual limit of 500,000 tons per year
Drum Dryer Fuel	Propane	#2 Fuel Oil with 0.5% sulfur and used **oil not to exceed 0.5% sulfur**
Generator	N/A	900 kW
Air Pollution Control Device	Fabric Filter	Fabric Filter

4.1 Application Chronology

April 13, 2006	Receipt of PTC application.
April 13, 2006	Receipt of PTC application fee.
May 11, 2006	PTC application determined to be complete.
May 26, 2006	Public opportunity to comment period started.
May 15, 2006	DEQ requested additional information.
June 19, 2006	Receipt of additional information.
June 26, 2006	Public opportunity to comment period closed. No requests received.
July 10, 2006	Receipt of a written request from Inland Asphalt for facility draft for review.

5. PERMIT ANALYSIS

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

5.1 Equipment Listing

HMA Plant:

Manufacturer/Model:	Cedarapids Model 100-32
Type of HMA plant:	Counterflow, tangentially fired drum mix
Allowed Fuel Type(s):	Natural gas, liquefied petroleum gas (LPG), propane, ASTM Grade 2 fuel oil, used oil,
Emissions Control device(s):	Baghouse, Cedarapids Model 11060P, 98% efficiency fabric filter

Stack parameters:

Height:	23 ft	Exit gas volume:	56, 000 acfm
Diameter:	4.5 ft	Exit gas temperature:	275°F

Aggregate Storage Bin(s):	Aggregate bin
Conveyor(s):	Enclosed aggregate feed conveyors, aggregate weigh conveyor, enclosed asphalt concrete slat conveyor
HMA Storage silo(s)/load-out:	Asphalt concrete silo/surge hopper

HMA Asphalt Storage Tank Heater

Manufacturer/Model:	Hy-Way/ 120
Type:	New Process Electric

Generator Set

Manufacturer/Model:	Caterpillar Model D-399
Rating:	900 kW
Allowed Fuel Type(s):	ASTM Grade 2 fuel oil

5.2 Emissions Inventory

Emission Factors

Emission estimates for the HMA drum dryer and load-out, silo filling and asphalt tank storage were based on emission factors from AP-42 Section 11.1, Hot Mix Asphalt Plants, March 2004, supplemented by emission factors from AP-42 Section 1.3, Fuel Oil Combustion, to evaluate the potential impact on SO_2 emissions when burning used oil with a sulfur content greater than 0.5^{w}/o. AP-42 emissions factors for drum mix asphalt plants are not dependent on whether the drum mix plant is a parallel flow or counterflow design. Consequently, emissions estimates developed for the drum mix plant would be applicable for either parallel flow drum mix plants or for counter flow drum mix plants.

Emission estimates for the asphalt tank heater were based on emission factors from AP-42 Sections 1.3, Fuel Oil Combustion, September 1998, and 1.4, Natural Gas Combustion, July 1998, with fuel heat values taken from table notes from those sections.

Emission estimates for the generator engine were based on emission factors from AP-42 Section 3.3, Gasoline and Diesel Industrial Engines (applicable to diesel engines up to 600 horsepower [hp]), October 1996, or Section 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines (for engines greater than 600 hp [447 kW]), October 1996, as appropriate.

Fugitive emissions from HMA silo filling and load-out and from asphalt tank storage were estimated using emission factors from AP-42 Section 11.1.

Facility Design and Operational Limits

Emission estimates from the HMA plant were based on the operational limits shown in Table 5.1.

Table 5.1 OPERATIONAL CONSTRAINTS USED FOR EMISSION ESTIMATES

Emission Unit	Throughput or Fuel Usage		Hours of Operation	
Drum Dryer	Throughput: 500 T/hr	Throughput: 500,000 T/yr	24 hours/day	1000 hours/yr
Load-out, Silo Filling & Asphalt Tank Storage	Throughput: 500 T/hr	500,000 T/yr	24 hours/day	1000 hours/yr
Engine Generator	---	---	24 hours/day	1,000 hours/yr

T/hr = tons per hour
T/yr = tons per year

Emission estimates for criteria pollutants, hazardous air pollutants (HAPs) and state-only toxic air pollutants (TAPs) are shown in Appendix A.

Emissions for Used Oil Fuels with Sulfur Content Greater than 0.5 Percent

The AP-42 emission factors for a drum mix plant burning used oil do not specify the sulfur content of the used fuel oil. Used oil is described in ASTM definitions as primarily a blend of used lubricating oils and distillate or a reprocessed distillate product derived from used oil. In Idaho, the sulfur content of distillate fuels is limited to a maximum of $0.5^{w}/o$. The SO_2 emission rate from the drum dryer, therefore, was established as SO_2 emissions from used fuel oil with 0.5 % sulfur using AP-42 Section 1.3 emission factors for fuel oil burning equipment, based on drum dryer fuel consumption rates.

Emissions for Multiple Fuel Types

The emission units and fuels evaluated for this PTC are summarized in Table 5.2. Emissions estimates were calculated separately for each emission source and for each fuel evaluated for use in that equipment. An emission estimate for each emission source was then developed by selecting the maximum value for each pollutant for any fuel type evaluated for that source. This represents a worst-case approach for conservatively evaluating the maximum potential emissions from each source regardless of which fuel type(s) the facility chooses to use.

For example, AP-42 emission factors for NO_x emissions are 0.055, 0.055, 0.026, and 0.039 pounds per ton of HMA for a drum dryer fueled by ASTM Grade 2 fuel oil, used oil, natural gas, or LPG/propane, respectively. HMA drum dryer NO_x emissions used to evaluate potential impacts on ambient air quality were based on the highest emission factor for any of these fuels, i.e., NO_x emissions were based on an emissions factor of 0.055 pounds per ton of HMA produced.

Table 5.2 EMISSION SOURCES, FUEL TYPES, AND EMISSION FACTORS

Emission Source	Fuel Type(s) Evaluated	Emission Factor Source
HMA Drum Dryer with Fabric Filter (Baghouse)	ASTM Grade 2 Fuel Oil	AP-42, Section 11.1
	Used Oil (presumed max 0.5% S)	AP-42, Section 11.1
	Used Oil at 0.5% S	AP-42, Section 1.3
	Natural Gas	AP-42, Section 11.1
	LPG or Propane	AP-42, Section 11.1
Generator Engine (Generator < 600 hp [447 kW])	ASTM Grade 2 Fuel Oil	AP-42, Section 3.3
Generator Engine (Generator > 600 hp [447 kW])	ASTM Grade 2 Fuel Oil	AP-42, Section 3.4

Change in Emissions Addressed in this PTC

This PTC addresses only the changes in estimated emissions resulting from:

- Burning used oil, natural gas, LPG, propane, or ASTM Grade 2 fuel oil in the drum dryer instead of propane,
- Operating at a increased annual throughput of 500,000 tons per year compared to the 60,000 tons per year allowed under 1994 Permit No. P-777-00047.
- Operating an 900 kW generator for 24 hours per day and 1,000 hours per year burning ASTM Grade 2 fuel oil.
- Increasing the allowable (permitted) emissions of PM_{10} compared to the 1994 permit conditions to levels predicted by the current emissions inventory estimate.

Note that there have been significant revisions to AP-42 emission factors in the 12 years since the existing permit was issued; this accounts for some of the changes in estimated emissions for individual pollutants from the drum dryer and generator.

No information was available in the existing permit regarding capacity or hours of operation for the asphalt tank heater. The new tank heater operates on electricity.

The change in the emissions of criteria pollutants resulting from this PTC is shown in Table 5.3, which compares the allowable emissions from the drum dryer under the old permit to the current emissions inventory (estimated using AP-42 factors) for the drum dryer and a 900 kW generator. The relatively large change in the estimated emissions for the drum dryer is not due to adding the option to burning used oil as an optional fuel. The primary difference is that the old permit limits for the drum dryer--particularly for PM_{10}, CO, and SO_2—are markedly different compared to emissions estimated using current AP-42 emission factors.

Table 5.3 PTC CHANGES TO EMISSION INVENTORY ESTIMATES – CRITERIA POLLUTANTS

Pollutant	Existing Permitted Emissions Drum Dryer #2 Fuel Oil		Current PTC EI Drum Dryer Any Fuel		Existing Permitted Emissions Generator #2 Fuel Oil		Current PTC EI Generator 900 kW #2 Fuel Oil		Total Change in Emissions	
	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)
PM_{10} (total)	0.89	0.09	8.34	4.17	--	--	2.62	1.31	10.07	5.38
CO	10.7	1.14	65	32.5	--	--	8.07	4.01	62.37	35.37
NO_x	10.1	1.1	27.5	13.75	--	--	18.61	9.31	36.01	21.96
SO_2	---	---	29	14.5	--	--	2.45	1.22	31.45	15.72
VOC	7.9	0.84	16	8	--	--	3.04	1.52	11.14	8.68
								TOTAL	151	87

Notes: EI = Emissions Inventory (based on AP-42 emission factors).

Based on AP-42 Section 11.1 emission factors, emissions of non-criteria pollutants in pounds per hour from the drum dryer are expected to be the same whether using ASTM Grade 2 fuel oil or used oil, except that 13 additional pollutants are emitted when using used oil.

The hourly change was calculated only for TAPs for which the total potential to emit (i.e., emissions from the drum dryer and generator) was greater than the TAPs screening emission levels (EL) listed in IDAPA 58.01.01.585 or IDAPA 58.01.01.586. The change in hourly emissions for any other TAPs emitted from the generator would therefore be less than the screening EL. A list of TAPs exceeding emission levels is contained in Appendix A.

As shown in Table 5.4, the increase in hourly emissions for six of these TAPs exceeded the screening ELs. Modeling was required to demonstrate preconstruction compliance with toxics standards for these six TAPs (see the modeling results section below).

Table 5.4 PTC CHANGES TO EMISSION INVENTORY ESTIMATES – TOXIC AIR POLLUTANTS

Pollutant	Drum Dryer Used Oil	Generator 900kW	Total in Estimated Emissions		
	(lb/hr) [c]	(lb/hr) [c]	(lb/hr) [c]	EL (lb/hr) [c]	Exceeds TAPs EL?
Hydrogen chloride (HCl)[a]	0.105		0.105	0.05	Exceeds
Non-Polycyclic Aromatic Hydrocarbon Hazardous Air Pollutants (non-PAH HAPs)					
Acetaldehyde[a]	0.65		0.65	0.003	Exceeds
Benzene[a]		6.74E-03	6.74E-03	8.00E-04	Exceeds
Propionaldehyde[a]	0.065	0.0	0.065	0.0287	Exceeds
Quinone[a]	0.08	0.0	0.0880	0.027	Exceeds
PAH HAPs					
Polycyclic Organic Matter (POM)[a] (total of PAHs listed)		7.69E-06	7.69E-06	2.60E-06	Exceeds

[a]Idaho Toxic Air Pollutant
[b]lb/hr = pounds per hour
[c]T/yr = tons per consecutive 12-month period

5.3 Modeling

DEQ conducted screening-level modeling to demonstrate compliance with ambient air quality standards for the increases in criteria pollutants (see Table 5.3) and with acceptable ambient concentration increments for emissions of TAPs that exceed screening emission levels (see Table 5.4). The modeling approach is described in Appendix B.

Stack parameters used in the SCREEN3 modeling analysis for point sources of emissions are shown in Table 5.5.

Table 5.5 STACK PARAMETERS

Stack Parameter	HMA Drum Dryer
Stack Height	23 ft.
Stack Diameter	4.5 ft.
Exit Gas Volume	56,000 acfm
Exit Gas Velocity	3,168 ft/sec
Exit Gas Temperature	275 ^{0}F
Emission Rate	1.0 lb/hr (0.126 g/s)

acfm = actual cubic feet per minute
ft/sec = feet per second
lb/hr = pound per hour
° F = degrees Fahrenheit

Modeling Results – Changes in Emissions Resulting from this PTC

The results of DEQ's modeling for the criteria pollutant ambient impacts associated with this PTC—burning used oil in the drum dryer are shown in Table 5.6. As shown in the table, the increase in ambient air quality impacts was not significant, as defined in IDAPA 58.01.01.006, for CO, NO_x, or SO_2 or for the annual impact from PM_{10}.

Note that the increase in estimated PM_{10} emissions shown in Table 5.3 is not the result of adding used oil as an alternate fuel for the drum dryer. It is due to the difference between the PM_{10} emissions requested in the permit application (8.34 pounds per hour) and the very low PM_{10} emission limit (0.89 pounds per hour) estimated from AP-42 emission factors in the existing permit. The calculation of the short-term increase in the PM_{10} ambient impact from these changes in allowable emissions for the HMA plant was predicted to be 9.68 $\mu g/m^3$, which is significant (i.e., the 24-hour average exceeds $5\mu g/m^3$). In accordance with DEQ modeling guidance, facility-wide modeling for PM_{10} emissions was therefore required (see below).

Table 5.6 AMBIENT IMPACTS FROM THIS PTC - CRITERIA POLLUTANTS REDO

Pollutant	Averaging Period	Maximum Predicted Ambient Impact ($\mu g/m^3$)	Significant Contribution Level ($\mu g/m^3$)	Significant Contribution?
Criteria Pollutants				
PM_{10}	24-hour	9.68	5	Yes
	Annual	1.94	1.0	Yes
CO	1-hour	161.2	2000	No
	8-hour	125.3	500	No
NO_x	Annual	10.4	1.0	Yes
SO_2	3-hour	86.7	25	Yes
	24-hour	38.6	5	Yes
	Annual	7.7	1.0	Yes

The modeled concentration of any new emission or increased emission of toxic air pollutants related to this PTC did not exceed the acceptable ambient concentration increments, as shown in Table 5.7.

Table 5.7 AMBIENT IMPACTS FROM THIS PTC - TOXIC AIR POLLUTANTS

Toxic Air Pollutants, Non-carcinogens	Averaging Period	Maximum Predicted Ambient Impact ($\mu g/m^3$)	AAC [a] (mg/m3)	Percent of AAC
Hydrogen chloride (HCl)	24-hour	0.038	0.375	0.01%
Propionaldehyde	24-hour	0.024	0.0215	0.11%
Quinone	24-hour	0.029	0.020	0.145%
Toxic Air Pollutants, Non-carcinogens	**Averaging Period**	**Maximum Predicted Ambient Impact ($\mu g/m^3$)**	**AACC [b] ($\mu g/m^3$)**	**Percent of AACC**
Acetaldehyde	Annual	0.236	0.450	52.4%
Benzene	Annual	2.44E-03	1.2E-01	2.03%
Polycyclic Organic Matter	Annual	2.75E-06	3.0E-04	0.92%

[a]AAC = Acceptable ambient concentration
[b]AACC = Acceptable ambient concentration for carcinogens

Modeling Results – Facility-Wide

As described above, facility-wide modeling was required for PM_{10}. Although not required, DEQ also conducted facility-wide modeling to determine whether the existing permit limits on the emissions of CO, NO_x, and SO_2 were necessary to protect air quality. Table 5.8 shows the criteria pollutant emissions from the drum dryer, generator, and from silo filling and loadout for this HMA plant under the operational constraints summarized in Table 5.1. These values reflect the maximum emissions inventory when using any of the fuel types listed in Table 5.2 for each emissions source.

Table 5.8 EMISSION INVENTORY ESTIMATES –CRITERIA POLLUTANTS

Pollutant	Drum Dryer		Generator		Silo Filling & Loadout		Total Emissions	
	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)
PM_{10} (total)	8.34	4.17	2.62	1.31	0.261	0.13	11.22	5.61
CO	65	32.5	8.07	4.01	0.67	0.335	73.74	36.84
NO_x	27.5	13.75	18.61	9.61	---	---	46.11	23.36
SO_2	29	14.5	2.45	1.22	---	---	31.45	15.72
VOC	16	8	3.04	1.52	0.0805	0.04	19.1	9.56

The results of facility-wide modeling for PM_{10}, CO, NO_x, and SO_2 conducted by DEQ are shown in Table 5.9. Facility-wide modeling for these criteria pollutants included contributions from all point

source stacks and fugitive emissions from HMA silo filling and load-out. Detailed modeling results are included in Appendix B.

Table 5.9 FACILITY-WIDE AMBIENT IMPACTS

Pollutant	Averaging Period	Maximum Predicted Ambient Impact ($\mu g/m^3$)			Background Concentration ($\mu g/m^3$)	Total Ambient Impact ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percent of NAAQS
		Drum Dryer	Generator	Silo Fill & Loadout				
PM_{10}	24-hour	9.68	16.88	36.95	73	145.5	150	91%
	Annual	1.94	2.78	0.698	26	33.2	50	62.8%
CO	1-hour	161.2	96.23	947.5	3,600	4805	40,000	12%
	8-hour	125.3	74.85	198.65	2,300	2699	10,000	27%
NO_2	Annual	10.4	19.73		17	47.1	100	47%
SO_2	3-hour	86.7	29.21		34	149.9	1,300	11.5%
	24-hour	38.6	12.99		26	77.6	365	21.3%
	Annual	7.7	2.59		8	18.3	80	22.7%

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

A PTC is required for this facility because, without limits on the potential to emit, the estimated PM_{10}, CO, NO_x, and SO_2 emissions that may cause or contribute to a violation of the NAAQS would exceed 100 tons per year each and the total HAPs emissions would exceed 25 tons per year. Inland Asphalt has requested a permit to construct for a hot-mix asphalt plant to operate as a portable source within the State of Idaho. This is a modification to an existing permit to construct for this facility.

IDAPA 58.01.01.203 ..... National Ambient Air Quality Standards (NAAQS)

Because the estimated increase in short-term ambient impacts from PM_{10} emissions related to this PTC was significant (greater than $5\mu g/m^3$), facility-wide modeling was conducted for PM_{10} emissions. Modeling was based on the operational constraints listed in Table 5.1 and included PM_{10} emissions from the drum dryer, generator, and from silo filling and loadout.

Dispersion modeling using a screening level analysis for the change in emissions resulting from this PTC and screening level facility-wide modeling for PM_{10} emissions demonstrates preconstruction compliance with IDAPA 58.01.01.203.02, i.e., demonstrates to DEQ's satisfaction that the facility would not cause or significantly contribute to a violation of any ambient air quality standard.

Because the air dispersion modeling predicts that ambient air concentrations may reach 91 percent of the 24-hour NAAQS for PM_{10}, a daily PM_{10} limit was established for the HMA drum dryer. A daily limit on HMA production limits PM_{10} emissions generated by silo filling and loadout operations.

40 CFR 60 Subpart I ..... Standards of Performance for Hot-Mix Asphalt Facilities

New Source Performance Standards (NSPS) apply to hot mix asphalt facilities that commenced construction or modification after June 11, 1973. The May 27, 1994 PTC (P-777-00047) notes that the Cedarapids No. 10032 HMA facility was purchased new in 1976, and therefore it is an affected facility as defined by 40 CFR 60 Subpart I. The NSPS grain loading and opacity standards were included as permit conditions with compliance to be demonstrated by performance source tests.

40 CFR 279 ..... Standards for the Management of Used Oil
40 CFR 761 ..... Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions

The facility specifically requested to combust on-specification used oil, and the permit was written to allow its use. Resource Conservation and Recovery Act (RCRA) rules contained in 40 CFR 279.11 contain specifications for used oil which include maximum allowable levels for arsenic, cadmium, chromium, lead, the flash point, and total halogens. The maximum limit for total halogens is listed at 4,000 parts per million (ppm). However, used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under Section 279.10(b)(1). Such used oil is subject to 40 CFR 266, Subpart H, "Hazardous Waste Burned in Boilers and Industrial Furnaces" when burned for energy recovery unless the presumption of mixing can be successfully rebutted. Therefore, the permit limits the total halogens to 1,000 ppm. This permit condition is consistent with previous permits issued for hot-mix asphalt plants[1].

Permit Condition 3.7 states that, in accordance with 40 CFR 279.11, with the exception of total halogens which are limited to 1,000 ppm, used oil burned for energy recovery shall not exceed any of the allowable levels listed in the table included with that permit condition. Those limits are shown in Table 5.10 below. In addition, used oil may not contain a quantifiable level of PCBs. The quantifiable level—also called the detection limit—is defined in 40 CFR 761.3 as meaning "2 micrograms per gram from any resolvable gas chromatographic peak, i.e., 2 ppm." The emissions inventory for burning used oils is based on EPA AP-42 emission factors for waste oil fuels, which reflect these limits on contaminants in used oils. These permit conditions are considered reasonable permit conditions because they inherently limit air pollution emissions.

TABLE 5.10 USED OIL SPECIFICATIONS[1]

Constituent/property	Allowable Level for On Specification Used Oil
Arsenic	5 ppm[2] maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100°F minimum
Total halogens	1,000 ppm maximum
PCBs[3]	< 2 ppm

[1]The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see 40 CFR 279.10(b)).
[2]Parts per million
[3]Applicable standards for the burning of used oil containing PCBs are imposed by 40 CFR 761.20(e)

DEQ's Waste Program has reviewed and approved the above discussions regarding regulating used oil.

IDAPA 58.01.01.210..... Demonstration of Preconstruction Compliance with Toxic Standards

The change in the facility's estimated toxics emissions from this PTC include nine TAPs that are emitted when using used oil instead of ASTM Grade 2 fuel oil in the drum dryer burner. The emission estimates for these TAPs were predicted to be less than the corresponding screening emissions level increment in pounds per hour or were modeled to demonstrate that they would not exceed the applicable acceptable ambient concentration listed in IDAPA 58.01.01.585 (24-hr-average limits) or IDAPA 58.01.01.586 (annual limits for carcinogens).

[1] PTC-030138 Interstate Concrete, Hayden Lake, 2/18/05 & PTC-040101 Interstate Concrete, Rathdrum, 2/18/05

The change in TAPs emissions was based on a maximum throughput of 500 tons of HMA per hour operating for 24 hours per day and a maximum of 500,000 tons of HMA per year for the drum dryer. Daily and annual HMA throughput limits were therefore established. The change in TAPs emissions was also based on maximum annual operation of the generator for 1,000 hours, which was suggested in the application. Because the annual limit on the drum dryer throughput would restrict the dryer operations to about 2,000 hours per year if operated at only 250 tons per hour (or at about 50% of the maximum design hourly throughput), and line power will likely be available at some or all of the site locations, the annual operations of the generator were determined to be inherently limited below 1,000 hours or less. An annual limit on the generator operations was therefore not established.

The comparison of the emission rates of the TAPs emissions against the screening ELs, combined with the modeling results, demonstrates to DEQ's satisfaction that the facility would be in compliance with carcinogenic and non-carcinogenic toxic air pollutant increments listed IDAPA 58.01.01.585 and IDAPA 58.01.01.586. In accordance with IDAPA 58.01.01.203.03, this also demonstrates preconstruction compliance with IDAPA 58.01.01.161.

IDAPA 58.01.01.006..... Fuel Burning Equipment
IDAPA 58.01.01.675..... Fuel Burning Equipment – Particulate Matter

The asphalt tank heater for this HMA facility uses electricity. The elimination of the traditional fuel burning source for the asphalt tank heater assists in reducing the overall emissions.

IDAPA 58.01.01.726 -728..... Definitions, Residual and Distillate Fuel Oil

Used oils would be included in the IDAPA definition of residual fuel oils, which includes ASTM Grades 4, 5 and 6 fuel oils. RFO4 may contain varying amounts of used residual fuel oil in addition to used and new distillate fuel oil, so the sulfur content of RFO4 may exceed the 0.5% maximum imposed on ASTM Grade 2 distillate fuel oils, but Inland Asphalt Company in their comments stated they would not burn used oil containing greater than 0.5% sulfur content.

IDAPA 58.01.01.805..... Rules for Control of Hot-Mix Asphalt Plants
IDAPA 58.01.01.700-701..... Particulate Matter—Process Weight Limitations

Section 805 specifically requires that particulate matter emitted from hot-mix asphalt plants be subject to the process weight limitations contained in Sections 700 through 703. The HMA drum dryer began operations after October 1, 1979, and is therefore subject to Section 701. A comparison of the estimated PM emissions from the drum dryer based on AP-42 emission factors and the calculated process weight rate (PWR) emission limit for the entire range of throughputs (up and including the maximum design throughput of 500 tons per hour) for the drum dryer confirmed that PM emissions will not exceed PWR emission limits when the drum dryer is operated with a baghouse.

5.5 *Permit Conditions Review*

This section describes only those permit conditions that have been revised, modified, or deleted as a result of this permit action. All other permit conditions remain unchanged.

Permit Condition 1 through 2.2

Permit Conditions 1 through 2.2 contains the Purpose of the Permit, listing of the regulated sources and process description. The existing permit allows only ASTM Grade 2 fuel oil to fire the drum dryer. To reduce future needs for permit changes, this permit was developed to allow the use of multiple fuel types for the drum dryer and asphalt tank heater.

Permit Condition 3.1

The existing permit (Condition 2.1.3) requires compliance with the NSPS opacity limit for the drum dryer. The 40 CFR 60.90 NSPS 20% opacity limit for Hot-Mix Asphalt Facilities is also included in the current permit and specifies the use of EPA Method 9 to demonstrate compliance.

Compliance Assurance

Permit Condition 3.16 requires monthly see/no-see visible emissions monitoring for the drum dryer baghouse stack, and requires expeditious corrective action or performance of a Method 9 opacity test.

Permit Condition 3.17.1 requires visible emissions testing to demonstrate compliance with the NSPS opacity limit.

Permit Condition 3.17.2 requires visible emissions testing to demonstrate compliance with the NSPS opacity limit once each five years. This testing is not required by NSPS but is a reasonable permit condition in accordance with IDAPA 58.01.01.211.01.

Permit Condition 3.2

The existing permit (Conditions 2.1.3 and 2.2.2) requires compliance with the IDAPA 58.01.01.625 20% opacity limit for the drum dryer and generator. This permit clarifies that this requirement applies to emissions from any stack, chimney, vent, or other functionally equivalent opening (i.e., includes the asphalt tank heater stack). The 40 CFR 60.90 NSPS opacity limit and the IDAPA 58.01.01.625 opacity limit are different. The IDAPA 58.01.01.625 20% opacity limit is for a period or periods aggregating more than three minutes in any 60-minutes, the NSPS 20% opacity limitation is for all periods.

Compliance Assurance

Permit Condition 3.16 requires monthly see/no-see visible emissions monitoring for the drum dryer baghouse stack, and requires expeditious corrective action or performance of a Method 9 opacity test.

Permit Condition 3.17.1 requires visible emissions testing to demonstrate compliance with the IDAPA opacity limit.

Permit Condition 3.17.2 requires visible emissions testing to demonstrate compliance with the IDAPA opacity limit once each five years.

Permit Condition 3.3

The existing permit (Condition 2.1.1) requires compliance with the NSPS 0.04 grains per dry standard cubic foot (gr/dscf) limit for the drum dryer stack in accordance with 40 CFR Part 60.92(a)(1).

Compliance Assurance

Permit Condition 3.17.1 contains the NSPS performance test, which is a one time performance test. If the one time NSPS performance test has already been conducted on the facility, this permit condition requires, as a reasonable permit condition (IDAPA 58.01.01.211), that the facility conduct a performance test within 60 days after achieving the maximum production rate at which the affected facility will operate but not later than 180 days after initial start up of the source.

Permit Condition 3.17.2 requires emissions testing to demonstrate compliance with the NSPS grain loading limit once each five years as a reasonable permit condition (IDAPA 58.01.01.211).

Permit Condition 3.4

The existing permit (Conditions 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6, and Appendix A) included hourly and annual limits for PM, PM_{10}, CO, NO_x, SO_2, and VOCs for the drum dryer.

For this permit, a PM emission limit was requested for the drum dryer. HMA throughput limits and the requirements of General Condition 2 will ensure that particulate matter emissions do not exceed 250 tons per year.

A pound per hour PM_{10} limit equal to 120% of the estimated emissions rate for a throughput of 500 tons of HMA per hour was established for the drum dryer for comparison with results from the PM_{10} source test(s) required in Permit Condition 3.17. Operation of the drum dryer at this hourly emissions rate (8.34 X 1.2 = 10.0 pounds per hour) would increase the facility-wide PM_{10} ambient impacts from 91% to about 92.3% of the 24-hour PM_{10} NAAQS.

About 79% of the total facility-wide PM is emitted from the drum dryer. An annual PM_{10} emission limit equal to the estimated annual emissions rate in tons per year was established for the drum dryer to limit the facility's potential to emit below major source thresholds.

An emission limit on VOCs was omitted from this permit because without permit limits, the potential to emit VOCs was less than the major source threshold of 100 tons per year.

Specific emission rate limits were omitted in this permit for CO, NO_x, and SO_2. Permit limits on the drum dryer daily and annual throughput inherently limit the facility's potential to emit below major source thresholds for these pollutants.

With permit limits, modeling predicted that ambient air quality impacts from all sources plus background were less than 50% of the NAAQS for each of these pollutants (see Table 5.9 above and Table 5.11 below).

Table 5.11 CO, NOx, and SO_2 AMBIENT IMPACTS

Pollutant	Averaging Period	Drum Dryer Emissions Inventory (lb/hr)	Facility-Wide Ambient Impact Sources + Background (Percent of NAAQS)
CO	1-hour	65	12%
	8-hour	65	27%
NO_x	Annual	27.5	47%
SO_2	3-hour	29	11.5%
	24-hour	29	21.3%
	Annual	29	22.9%

In accordance with IDAPA 58.01.01.210.08, if a TAP emission needs to be controlled to comply with the toxic increment, DEQ "shall include an emission limit for the toxic air pollutant in the permit to construct that is equal to or, if requested by the applicant, less than the emission rate that was used in the modeling." No credit was taken for any control of TAPs emissions by the drum dryer baghouse. The change in uncontrolled TAPs emissions (without limits and with no pollution control equipment) associated with this PTC exceed the applicable ELs for some TAPs, but do not exceed the applicable AAC or AACC increments, therefore, no TAPs emission limits were included in the permit.

Compliance Assurance

Permit Condition 3.6 limits the type of fuel that may be combusted; Permit Condition 3.7 limits the amount of lead, arsenic, cadmium, chromium, volatiles, halogens, and PCBs that may be present in any used fuel oil; Permit Condition 3.8 limits the amount of sulfur that may be present in the fuel oil; Permit Condition 3.9 limits hourly and annual production to limit emissions to requested levels; and Permit Conditions 3.14, 3.18, and 3.19 require monitoring and recording of production throughput and fuel oil characteristics.

Permit Conditions 3.17.1 and 3.17.2 require performance testing to demonstrate compliance with PM_{10} emission limits.

Particulate matter emissions are controlled by a baghouse. In order to assure the baghouse is operated as designed Permit Conditions 3.10 through 3.12 require that the facility write an O&M manual that will include baghouse pressure drop and periodic inspection requirements, and require the installation of a pressure drop monitor. Permit Condition 3.14 includes requirements for monitoring and recording the pressure drop and the results of periodic inspections.

Permit Condition 3.5

The existing permit (Condition 2.2) requires reasonable control of fugitives with minimal recordkeeping (Condition 3.4). This permit includes a recitation of the rules to reasonably control fugitive dust.

Compliance Assurance

Permit Condition 3.15 requires monthly monitoring to assure fugitive emissions are being reasonably controlled.

Permit Conditions 3.6, 3.7, and 3.8

This permit allows greater flexibility in fuel options for the drum dryer.

Compliance Assurance

Permit Conditions 3.18 and 3.19 require obtaining certification that used oil meets specifications and maintaining records showing the sulfur content of fuel oil on an as-received basis. Natural gas distributors in Idaho must meet pipeline quality gas specifications approved by the Idaho Public Utilities Commission, and LPG and propane distributors must meet similar specifications. Additional recordkeeping by the receiving facility was therefore not required for these gas fuels.

Permit Condition 3.9

The existing permit (Condition 3.1) limits the HMA production rate to 281 tons per hour for a maximum of 213 hours per year. The new permit limits:

- The hourly rate was requested in the permit application. This limit—equal to a throughput of 500 tons of HMA per hour operating for a 24-hour day—indicates an air dispersion modeling predicted that ambient air concentrations may reach 91 percent of the 24-hour NAAQS for PM_{10}., and 74 percent of these emissions were from the drum dryer. An hourly throughput limit was not established because DEQ estimated that exceedance of the short-term NAAQS for CO and SO_2 would require operating the drum dryer at a rate that is four to five times the maximum design throughput capacity.
- Annual HMA production to ensure that major facility thresholds are not exceeded and to limit carcinogenic TAPs emissions.

Compliance Assurance

Permit Condition 3.14 requires monitoring and recording of daily, monthly, and annual HMA production, the amount of RAP used per day.

Permit Condition 3.11

The existing permit does not require development of an operations and maintenance (O & M) manual or monthly baghouse inspections. This permit requires that an O & M manual be developed within 60 days of permit issuance and that baghouse inspections be conducted monthly.

Compliance Assurance

Permit Condition 3.11 requires that the O & M manual remain on site at all times. Permit Condition 3.14 requires recordkeeping for monthly inspections.

Permit Condition 3.13

The existing permit does not address collocation. This permit prohibits collocation with any other HMA plant.

Compliance Assurance

Permit Condition 3.20 requires submittal of a complete Portable Equipment Registration and Relocation Form (PERF), which includes describing any intent to collocate.

Permit Condition 4

The existing permit (Permit Condition 3.2) prohibits operation in any area designated as nonattainment for any pollutant listed in Appendix A to that permit (PM, PM_{10}, SO_2, NOx, VOCs, and CO). The analysis for the current permit demonstrated that the increase in allowable emissions of criteria pollutants (other than PM_{10}) would not significantly contribute to any violation of the NAAQS.

Permit Condition 4 of the current permit prohibits the facility's operations only in any PM_{10} nonattainment areas. The permittee did not request authorization to operate in PM_{10} nonattainment areas, and the analysis in this Statement of Basis demonstrated that the increase in the allowable emissions of PM_{10} associated with this PTC would result in a significant contribution (defined in IDAPA 58.01.01.006 as an increase greater than $5\mu g/m^3$) to a violation of the PM_{10} NAAQS.

Compliance Assurance

Permit Condition 4 requires the permittee to contact DEQ for current area status and more specific details about the PM_{10} nonattainment area boundaries. An interactive map showing the boundaries of nonattainment areas can also be accessed on the DEQ website using the following steps to zoom in to map levels showing named streets:

1. Access the DEQ website at http://www.deq.state.id.us/;
2. Select Maps & Data, Interactive Mapping;
3. Click on the link to the Air Quality Monitoring Website, http://mapserver.deq.state.id.us/Website/emissions/viewer.htm; and
4. Zoom in on the area of interest by selecting the "+" icon and clicking on the interactive map.

Remaining Permit Conditions

The permit conditions that have not been discussed in this document are self explanatory and are not included in this statement of basis.

6. PERMIT FEES

Inland Asphalt paid the $1,000 permit to construct application fee as required in IDAPA 58.01.01.224 on April 13, 2006.

A permit to construct processing fee of $5,000 is required in accordance with IDAPA 58.01.01.225, because the increase in emissions from the changes associated with this PTC is more than ten tons per year but less than one hundred tons per year. The fee calculation can be found in Table 6.1 below.

Table 6.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	**Annual Emissions Increase (T/yr)**	**Annual Emissions Reduction (T/yr)**	**Annual Emissions Change (T/yr)**
NO_X	21.96	0	0.0
SO_2	15.72	0	0.0
CO	35.37	0	0.0
PM_{10}	5.38	0	0.0
VOC	9.52	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	87.9	0	**0.0**
Fee Due	**$ 5,000.00**		

Inland Asphalt is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration fees to support the Tier I operating permit program are not applicable in accordance with IDAPA 58.01.01.387.

7. PERMIT REVIEW

7.1 Regional Review of Draft Permit

On July 10, 2006, the Coeur d'Alene Regional Office was given a draft of the permit and statement of basis for review. No comments were received from the regional office.

7.2 Facility Review of Draft Permit

On July 10, 2006, the facility requested a draft of the permit be given to them for review. The facility comment stated they would not burn used fuel oil containing greater than 5% sulfur by weight. The permit was changed to reflect a limit of 5% sulfur by weight limit for used oil.

7.3 Public Comment

An opportunity for public comment period on the PTC application was provided from May 26, 2006, through June 26, 2006, in accordance with IDAPA 58.01.01.209.01.c. 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 recommends that Inland Asphalt Company Plant No. 9. be issued a final PTC No. P-060114 for the Cedarapids No. 10032 portable HMA facility. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

BR/REB/bf Permit No. P-060114

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APPENDIX A

EMISSIONS INVENTORY

P-060114

EMISSIONS ESTIMATED FOR INLAND ASPHALT PLANT NO. 9

	Existing Permit Drum Dryer lb/hr	T/yr	Current PTC EI Drum Dryer lb/hr	T/yr	Current PTC EI 900 kW Generator lb/hr
PM	2.75	0.29			
PM10	0.89	0.09	16.5	8.25	2.62
CO	10.7	1.14	65	32.5	8.02
NOx	10.1	1.1	27.5	13.75	37.22
SOx	n/a	n/a	29	14.5	2.45
VOC	7.9	0.84	16	8	3.04
lead	n/a	n/a			

900 kW Generator		Pollutant Rate lb/MM Btu	MM Btu/hr	#/hr	T/yr for 1000 hrs annually
PM-10		0.31	8.44	2.62	1.31
NOx		4.41	8.44	37.22	18.61
SOx		0.29	8.44	2.45	1.22
CO		0.95	8.44	8.02	4.01
VOC		0.36	8.44	3.04	1.52

Drum Dryer Highest pollutant for any permitted fuel			lb/hr	500,000 T/yr	
PM	0.033	500	16.5	8.25	
NOx	0.055	500	27.5	13.75	
SOx	0.058	500	29	14.5	
CO	0.13	500	65	32.5	
VOC	0.032	500	16	8	

Total Potential for 8760 hours per year operation for drum dryer and generator

		Totals per year Uncontrolled		Totals Controlled	
PM-10		83.73	lb/hr	**9.56**	T/yr
NOx		283.48	lb/hr	**32.36**	T/yr
SOx		137.74	lb/hr	**15.72**	T/yr
CO		319.82	lb/hr	**36.51**	T/yr
VOC		83.39	lb/hr	**9.52**	T/yr

Inland Asphalt is a SM facility because potentials are above 100 tons per year.

Toxic Air Pollutants with an exceedence of Emission Limits			Emission at 500 T/hr in lb/hr	Emission Limit T/hr
Hydrogen chloride (HCl)			0.105	0.05
Actaldehyde			0.65	0.003
Benzene			0.195	0.0008
Propionaldehyde			0.65	0.0287
Quinone			0.8	0.027
Polycyclic Organic Matter			0.00000769	0.0000026

Permit application request an annually PM-10 emission of 4.17 Tons per year.

500 Ton of asphalt per hour is an permit application request.
500,000 Tons of asphalt per year is a permit application request.
4.17 Tons of PM10 per year is a permit application request.

4.17 T PM-10/yr * 2000 lb/T / 500,000 TA/ yr * 500 TA/hr = 8.34 lb PM-10/hr.

APPENDIX B

AIR DISPERSION MODEL

P-050215

07/11/06
10:58:52

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

INLAND ASPHALT COMPANY, PLANT #9, GENERATOR D-399

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.126000
STACK HEIGHT (M) = 3.9624
STK INSIDE DIAM (M) = 0.2042
STK EXIT VELOCITY (M/S)= 92.0723
STK GAS EXIT TEMP (K) = 787.0389
AMBIENT AIR TEMP (K) = 293.1500
RECEPTOR HEIGHT (M) = 1.0000
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 = 5.906 M**4/S**3; MOM. FLUX = 32.916 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	85.13	2.72	2.69	NO
100.	12.73	4	20.0	20.0	6400.0	8.02	8.25	4.74	NO
200.	11.37	4	10.0	10.0	3200.0	12.08	15.74	8.81	NO
300.	9.300	4	8.0	8.0	2560.0	14.11	22.80	12.44	NO
400.	7.577	4	5.0	5.0	1600.0	20.20	29.82	15.96	NO
500.	6.580	4	5.0	5.0	1600.0	20.20	36.44	18.88	NO
600.	5.758	4	4.0	4.0	1280.0	24.26	43.11	21.99	NO
700.	5.118	4	3.5	3.5	1120.0	27.15	49.63	24.93	NO
800.	4.603	4	3.0	3.0	960.0	31.02	56.11	27.88	NO
900.	4.190	4	3.0	3.0	960.0	31.02	62.36	30.46	NO
1000.	3.854	4	2.5	2.5	800.0	36.43	68.76	33.41	NO

```
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    1. M:
  117.  13.25      4   20.0  20.0 6400.0   8.02   9.61   5.46   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      MAX CONC   DIST TO  TERRAIN
  PROCEDURE      (UG/M**3)   MAX (M)   HT (M)
-------------- ----------- -------- -------
SIMPLE TERRAIN     13.25       117.      0.
```

07/11/06
10:44:15

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

INLAND ASPHALT COMPANY, PLANT #9, CEDERAPIDS 10032, DRUM DRYER

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.126000
STACK HEIGHT (M) = 7.0104
STK INSIDE DIAM (M) = 1.3716
STK EXIT VELOCITY (M/S)= 17.8870
STK GAS EXIT TEMP (K) = 408.1500
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 = 23.244 M**4/S**3; MOM. FLUX = 108.079 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	233.82	3.71	3.69	NO
100.	0.1360	4	20.0	20.0	6400.0	16.69	8.32	4.86	NO
200.	2.391	4	20.0	20.0	6400.0	16.69	15.72	8.79	NO
300.	2.875	4	20.0	20.0	6400.0	16.69	22.80	12.44	NO
400.	2.448	4	20.0	20.0	6400.0	16.69	29.63	15.61	NO
500.	2.058	4	15.0	15.0	4800.0	21.29	36.40	18.80	NO
600.	1.774	4	15.0	15.0	4800.0	21.29	42.94	21.65	NO
700.	1.594	4	10.0	10.0	3200.0	29.69	49.61	24.89	NO
800.	1.456	4	10.0	10.0	3200.0	29.69	55.95	27.56	NO
900.	1.346	4	8.0	8.0	2560.0	35.36	62.41	30.56	NO
1000.	1.248	4	8.0	8.0	2560.0	35.36	68.61	33.10	NO
1100.	1.150	4	8.0	8.0	2560.0	35.36	74.75	35.07	NO
1200.	1.062	4	8.0	8.0	2560.0	35.36	80.85	36.99	NO
1300.	0.9814	4	8.0	8.0	2560.0	35.36	86.90	38.85	NO

1400.	0.9381	4	5.0	5.0	1600.0	52.37	93.45	41.91	NO
1500.	0.9001	4	5.0	5.0	1600.0	52.37	99.39	43.64	NO
1600.	0.8622	4	5.0	5.0	1600.0	52.37	105.29	45.33	NO
1700.	0.8252	4	5.0	5.0	1600.0	52.37	111.16	46.99	NO
1800.	0.7928	5	2.0	2.0	10000.0	74.35	89.08	36.77	NO
1900.	0.8206	5	1.5	1.5	10000.0	81.12	93.77	38.72	NO
2000.	0.8465	5	1.5	1.5	10000.0	81.12	98.01	39.62	NO
2100.	0.8637	5	1.5	1.5	10000.0	81.12	102.24	40.42	NO
2200.	0.8801	5	1.0	1.0	10000.0	91.85	107.11	42.87	NO
2300.	0.9005	5	1.0	1.0	10000.0	91.85	111.29	43.63	NO
2400.	0.9188	5	1.0	1.0	10000.0	91.85	115.46	44.37	NO
2500.	0.9351	5	1.0	1.0	10000.0	91.85	119.62	45.11	NO
2600.	0.9496	5	1.0	1.0	10000.0	91.85	123.77	45.84	NO
2700.	0.9623	5	1.0	1.0	10000.0	91.85	127.90	46.56	NO
2800.	0.9734	5	1.0	1.0	10000.0	91.85	132.03	47.28	NO
2900.	0.9829	5	1.0	1.0	10000.0	91.85	136.14	47.98	NO
3000.	0.9909	5	1.0	1.0	10000.0	91.85	140.24	48.68	NO
3500.	1.013	5	1.0	1.0	10000.0	91.85	160.59	52.09	NO
4000.	1.012	5	1.0	1.0	10000.0	91.85	180.69	55.36	NO
4500.	1.012	6	1.0	1.0	10000.0	77.41	134.02	38.28	NO
5000.	1.025	6	1.0	1.0	10000.0	77.41	147.05	39.68	NO
5500.	1.030	6	1.0	1.0	10000.0	77.41	159.96	41.03	NO
6000.	1.030	6	1.0	1.0	10000.0	77.41	172.75	42.32	NO
6500.	1.024	6	1.0	1.0	10000.0	77.41	185.44	43.57	NO
7000.	1.015	6	1.0	1.0	10000.0	77.41	198.02	44.77	NO
7500.	0.9977	6	1.0	1.0	10000.0	77.41	210.50	45.81	NO
8000.	0.9797	6	1.0	1.0	10000.0	77.41	222.89	46.82	NO
8500.	0.9611	6	1.0	1.0	10000.0	77.41	235.20	47.80	NO
9000.	0.9422	6	1.0	1.0	10000.0	77.41	247.43	48.74	NO
9500.	0.9233	6	1.0	1.0	10000.0	77.41	259.57	49.66	NO
10000.	0.9043	6	1.0	1.0	10000.0	77.41	271.65	50.56	NO
15000.	0.7340	6	1.0	1.0	10000.0	77.41	388.95	58.45	NO
20000.	0.5995	6	1.0	1.0	10000.0	77.41	501.35	63.56	NO
25000.	0.5055	6	1.0	1.0	10000.0	77.41	610.08	67.90	NO
30000.	0.4363	6	1.0	1.0	10000.0	77.41	715.87	71.71	NO
40000.	0.3414	6	1.0	1.0	10000.0	77.41	920.44	77.16	NO
50000.	0.2804	6	1.0	1.0	10000.0	77.41	1117.60	81.71	NO

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

277.	2.903	4	20.0	20.0	6400.0	16.69	21.26	11.65	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 MAX CONC DIST TO TERRAIN

PROCEDURE	(UG/M**3)	MAX (M)	HT (M)
SIMPLE TERRAIN	2.903	277.	0

Hot Mix Asphalt Plant - Screening Model Approach for Point Sources

DEQ performed air pollutant dispersion modeling for the point sources using the SCREEN3 model. The modeling assumed flat terrain, no downwash, a receptor height of 1.0 meters (3.28 feet), and that ambient air was located immediately adjacent to the facility in a rural area. A full range of stability classes and wind speeds were evaluated within the model to identify the "worst case" meteorological conditions that result in the maximum concentrations at the receptor height.

For modeling purposes each emission source air pollutant emission rate was set at one pound per hour (0.126 grams per second [g/s]). Using this method, the SCREEN3 model identifies the highest estimated concentration in micrograms per cubic meter ($\mu g/m^3$) per pound per hour of emissions at any receptor. This value was used as the dispersion coefficient for that emissions point source (i.e., each stack). The SCREEN3 modeling results are provided in this Appendix.

Hot Mix Asphalt Plant - Screening Model Approach for Fugitive Sources

Generic dispersion modeling for fugitive emissions from HMA silo filling and load-out was performed by DEQ using the ISCST3 model for a typical HMA facility.[1] Fugitive emissions from silo filling and load-out were modeled as volume sources. Generic dispersion factors for the dominant TAPs (those that typically are used to determine constraints on HMA facility operations) were developed from the maximum results from three model runs using five years of meteorological data from Boise and Pocatello, Idaho and Spokane, Washington. The ambient air boundary was taken to be 100 meters (328 feet) from the center of the volume sources (i.e., the center of the silo). These are shown in Table B.1.

Table B.1 AMBIENT AIR QUALITY IMPACTS FROM TYPICAL HMA SILO AND LOAD-OUT

Pollutant	Averaging Period	Ambient Air Quality Impact
PM_{10}	24-hour	0.0739 $\mu g/m^3$ per Ton/hr of HMA
	Annual	1.747E-06 $\mu g/m^3$ per Ton/yr of HMA
CO	1-hour	1.895 $\mu g/m^3$ per Ton/hr of HMA
	8-hour	0.3973 $\mu g/m^3$ per Ton/hr of HMA
Benzene	Annual	9.267E-09 $\mu g/m^3$ per Ton/yr of HMA
Formaldehyde	Annual	1.227E-07 $\mu g/m^3$ per Ton/yr of HMA
Polycyclic Organic Matter	Annual	1.760E-06 $\mu g/m^3$ per Ton/yr of HMA

Ambient Air Quality Impacts - Approach

The linear relationship between emission rate and ambient impact was used to predict the actual ambient impact by multiplying the dispersion coefficient for each point or fugitive emission source by the actual emission rates estimated in the emissions inventory.

The predicted ambient impact for each emission source was then multiplied by a persistence factor to convert the SCREEN3 one-hour concentration to the averaging periods of the ambient standards or TAP increments. The ambient impacts from the ISCST3 modeling for silo filling and load-out already reflect the appropriate averaging period, so were multiplied by the hourly or annual HMA throughput, as appropriate, to determine the ambient air quality impacts. The values for each averaging period were summed for all emissions sources along with background concentrations[2] for PM_{10}, CO, NO_2 (presumed to apply to NO_x), SO_2, and lead to determine the total maximum ambient air quality impacts.

Ambient impacts were determined by modeling each point and fugitive emission source, as described above, to determine the maximum ambient impact from that source. Then the maximum ambient impacts from each

[1] February 21, 2006, DEQ Internal Guidance Memorandum, Kevin Schilling, Stationary Source Modeling Coordinator to Air Program Permitting Staff, *Streamlined Dispersion Modeling for Hot Mix Asphalt Plants.*

[2] March 14, 2003, DEQ Internal Guidance Memorandum, Rick Hardy and Kevin Schilling to Mary Anderson, *Background Concentrations for Use in New Source Review Dispersion Modeling.*

emission source were added together to obtain the ambient impact. This methodology is conservative in part because it assumes that maximum impacts occur at the same ambient receptor.

APPENDIX C

AIRS INFORMATION

P-060114

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

Facility Name: Inland Asphalt Company
Facility Location: Portable Cedarapids No. 10032, Plant No. 9
AIRS Number: 777-00047

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	SM							U
NO_x	SM							U
CO	SM							U
PM_{10}	SM							U
PT (Particulate)			SM					U
VOC	B							U
THAP (Total HAPs)	SM							
			APPLICABLE SUBPART					
			I					

[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).