September 24, 2001

MEMORANDUM

TO: Katherine B. Kelly, Administrator
Air Quality Division

FROM: Stephen Coe, Air Quality Engineer, Associate SC
Idaho Department of Environmental Quality, Technical Services

SUBJECT: *PERMIT TO CONSTRUCT TECHNICAL ANALYSIS*
777-00283, Idaho Sand and Gravel, Portable (Standard Hot-Mix Asphalt Plant Permit to Construct No. 777-00283; including Aggregate, Asphalt, and Concrete Production when Collocated in Attainment Areas)

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

Idaho Sand and Gravel 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 in addition to Idaho Sand and Gravel's permitted use of diesel, propane, and natural gas. The standard PTC for a portable hot-mix asphalt plant also includes provisions for collocated operations in attainment areas with one other portable source (e.g., a rock crusher, hot-mix asphalt 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 Boise, Idaho.

SUMMARY OF EVENTS

On August 6, 2001, the Department of Environmental Quality received an application from Idaho Sand and Gravel for a hot-mix asphalt plant. On August 24, 2001, 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, hot-mix asphalt 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 hot-mix asphalt facility to collocate and simultaneously operate with one other portable plant (e.g., a rock crusher, hot-mix asphalt 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:	Gencor, S/N 400 UDP-18548, 1993
Type:	Drum-Mix
Throughput Capacity:	400 T/hr
Burner Fuel Type:	Used Oil/Diesel/Natural Gas/Propane
Dryer heat Input:	80 MM Btu/hr

b. Air Pollution Control Device

Manufacturer/Model:	Gencor, *S/N* BH 129-18548-1993

c. HMA Stack Information

Stack Height:	25 feet
Stack Diameter:	4.56 feet
Exhaust Gas Flowrate:	75,000 acfm
Stack Exhaust Temperature:	300 °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, 12/00 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 (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 ten microns (PM_{10}), oxides of nitrogen (NO_x), sulfur dioxide (SO_2), 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.

Toxic emissions were analyzed in the hot mix asphalt 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 hr/yr, 3,504,000 T/yr). When limited to 1,029,998 tons per year 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 1.69 $\mu g/m^3$ using a 1lb/hr unity emission rate input to the model. The spreadsheet calculates the ambient impact for each air pollutant (PM, PM_{10}, NO_x, SO_2, and CO) based on the calculated lb/hr 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 Acceptable Ambient Concentrations for Carcinogens 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. 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 facility 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 (SIC) code for this hot-mix asphalt 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:

IDAPA 58.01.01.201	Permit to Construct
IDAPA 58.01.01.202	Application Procedures
IDAPA 58.01.01.203	Permit Requirements for New and Modified Stationary Sources
IDAPA 58.01.01.209	Procedures for Issuing Permits
IDAPA 58.01.01.210	Demonstration of Preconstruction Compliance with Toxic Standards
IDAPA 58.01.01.211	Conditions for Permits to Construct
IDAPA 58.01.01.212	Obligation to Comply
IDAPA 58.01.01.577	Ambient Air Quality Standards
IDAPA 58.01.01.585 & 586	Toxic Air Pollutants Non-carcinogenic and Carcinogenic Increments
IDAPA 58.01.01.625	Visible Emissions
IDAPA 58.01.01.650	Rules for Control of Fugitive Dust
IDAPA 58.01.01.725	Rules for Sulfur Content of Fuels
IDAPA 58.01.01.805	Rules for the Control of Hot-Mix Asphalt Plants
40 CFR Part 60	This facility is an affected facility and is subject to regulation in accordance with 40 CFR Part 60, Subpart I, "Standards of Performance for Hot-Mix Asphalt Facilities."
40 CFR 279	Standards for the Management of Used Oil

8. Permit Coordination

This hot-mix asphalt plant is not a major facility as defined by IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. However, the applicant 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 hot-mix asphalt 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 Idaho Sand and Gravel be issued a modified PTC for a portable HMA facility. A public comment period was held, no entity has requested a public hearing, and the project does not involve Prevention Signification Deterioration PTC requirements.

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APPENDIX A

Spreadsheet Emissions Data

(Used Oil, Diesel, and Natural Gas)

Idaho Sand and Gravel, Portable

Emissions Analysis for Non-Carcinogenic Pollutants
Used Oil

Pollutant	Emission Factor, lb/ton	Actual, lb/hr	EL Standard, lb/hr	Actual 24 hr. Ambient Conc., ug/m^3	AAC, ug/m^3 (24 Hour Average)
Acetone	0.00083	3.32E-01	1.33	0.224432	1,000
Acrolein	2.6E-05	1.04E-02	0.017	0.0070304	13
Antimony	1.80E-07	7.20E-05	0.033	0.000048672	25
Barium	5.80E-06	2.32E-03	0.033	0.00156832	25
Chromium	5.50E-06	2.20E-03	0.033	0.0014872	25
Copper	3.10E-06	1.24E-03	0.013	0.00083824	10
Crotonaldehyde	8.6E-05	3.44E-02	0.38	0.0232544	285
Ethylbenzene	0.00024	9.60E-02	29	0.064896	21,750
Heptane	9.40E-03	3.76E+00	109	2.54176	82,000
Hexane	0.00092	3.68E-01	12	0.248768	9,000
Manganese	7.7E-06	3.08E-03	0.067	0.00208208	50
Mercury	2.6E-06	1.04E-03	0.0001	0.00070304	1
Methyl chloroform	4.8E-05	1.92E-02	127	0.0129792	95,500
Methyl Ethyl Ketone	2E-05	8.00E-03	0.007	0.005408	6
Naphthalene	0.00065	2.60E-01	3.33	0.17576	2,500
Pentane	2.10E-04	8.40E-02	0.033	0.056784	25
Phosphorous	2.80E-05	0.01	0.007	0.0075712	5
Propionaldehyde	0.00013	5.20E-02	0.0287	0.035152	22
Quinone	0.00016	6.40E-02	0.027	0.043264	20
Selenium	3.50E-07	1.40E-04	1.30E-02	0.00009464	10
Silver	4.80E-07	1.92E-04	0.007	0.000129792	5
Thallium	4.10E-09	1.64E-06	0.007	1.10864E-06	5
Toluene	0.0029	1.16E+00	25	0.78416	18,750
Valeraldehyde	6.7E-05	2.68E-02	11.7	0.0181168	8,750
Xylene	0.0002	8.00E-02	29	0.05408	21,750
Zinc	6.10E-05	2.44E-02	0.667	0.0164944	500

Emissions Analysis for Carcinogenic Pollutants
Used Oil

Pollutant	HMA Emission Factor, lb/ton	Actual, lb/hr	EL Standard, lb/hr	Actual Annual Ambient Conc., ug/m^3	AACC, ug/m^3 (Annual Average)	Annual Hours of Operation to Meet AACC or EL	Annual Tonnage Limit to Meet AACC
Acetaldehyde	0.0013	5.20E-01	3E-03	1.10E-01	9.5E-01	NA	
Arsenic	5.60E-07	2.24E-04	1.56E-06	4.73E-05	2.30E-04	NA	
Benzene	0.00039	1.56E-01	8.0E-04	3.30E-02	1.2E-01	NA	
Benzo(a)pyrene	9.8E-09	3.92E-06	2E-06	8.28E-07	3E-04	NA	
Beryllium	0.00E+00	0.00E+00	2.80E-05	0.00E+00	0.0042	NA	
Cadmium	4.10E-07	1.64E-04	0.0000037	3.46E-05	5.6E-04	NA	
Formaldehyde	3.1E-03	1.24E+00	5.1E-04	2.62E-01	7.7E-02	2,575	1,029,998
Hexavalent Chromium	4.5E-07	1.80E-04	5.6E-07	3.80E-05	8.30E-05	NA	
Nickel	6.30E-05	2.52E-02	2.70E-05	5.32E-03	4.20E-03	6,911	2,764,497

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

INPUT SECTION - enter info in highlighted areas only

Company:	Idaho Sand and Gravel	
Permit Engineer:	DH	
Date:	5/24/01	
Filename:		
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:	75,000	[=] actual cubic feet per minute (acfm)
Enter Dryer Stack Temperature:	300	[=] temperature (°F)
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:	42,718	[=] dry standard cubic feet per minute (dscfm)
Enter HMA Maximum Capacity:	400	[=] Ton/hr (Asphalt Throughput)
Enter HMA Modeled Concentration:	1.69	[=] µg/mu^3, (1-hr concentration @ 1 lb/hr)
Is a PM performance test required for this HMA plant?	y	Y or N (based on 40 CFR 60.90 Requirements)
Does Plant Require a Generator?	n	Y or N
	A	
	60.8	
	13.37	

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				86	32.7
CO	11400		5130		
NO dx					40
SO dx		543		144	23.5

Parameters used in the Fugitive Emission Calculations

Mean Wind Speed (U)	10	[=] mph
Material Moisture Content (M)	2.5	[=] %
Particle Size Multiplier (k)		
PM-10 (<10 µm)	0.35	[=] dimensionless
Emission Factor u1		
PM-10 (<10 µm)	0.0020	[=] lb/T
PM u2	0.0053	[=] lb/T

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		
	Allowable Emission Limits	
HMA Dryer Stack:	14.6 lb/hr of PM	99.0 T/yr of CO
Generator:	NA hr/day NA hr/year	NA T/yr
HMA Plant Throughput Limits:	4,848 T/day	1,523,077 T/yr

Attainment Area		
	Allowable Emission Limits	
HMA Dryer Stack:	14.6 lb/hr of PM	99.0 T/yr of CO
Generator:	NA hr/day NA hr/year	NA T/yr
HMA Plant Throughput Limits:	#N/A T/day	1,523,077 T/yr

Collocated Attainment Areas		
	Allowable Emission Limits	
HMA Dryer Stack:	14.6 lb/hr of PM	49.5 T/yr of CO
Generator:	NA hr/day NA hr/year	NA T/yr
HMA Plant Throughput Limits:	#N/A T/day	761,538 T/yr

	CO 1-hr Standard	SO2 3-hr standard	CO 8-hr Standard
	minutes/1-hr	hr/3-hr	hr/8-hr
	60.0	3.0	8.0

INPUTS TO PERMIT TO CONSTRUCT (PTC)		Value	Units
Section B "Attainment Area When Not Collocated"			
Section B.1.1 Facility Throughput Li	Annual Throughput Limit	1,523,077	T/yr
	<<OR>>		
	Daily Throughput Limit	#N/A	T/day
	Annual Throughput Limit	1,523,077	T/yr
Section B.1.3 Generator Hours of Op	Annual Hours of Operation	NA	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	NA	hr/day
Section C "Attainment Area When Collocated"			
Section C.1.3 Facility Throughp	Annual Throughput Limit	761,538	T/yr
	<<OR>>		
	Daily Throughput Limit	#N/A	T/day
	Annual Throughput Limit	761,538	T/yr
Section C.1.4 Generator Hours	Annual Hours of Operation	NA	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	NA	hr/day
Section D "Nonattainment Area"			
Section D.1.1 Facility Throughp	Annual Throughput Limit	1,523,077	T/yr
	<<OR>>		
	Daily Throughput Limit	4,848	T/day
	Annual Throughput Limit	1,523,077	T/yr
Section D.1.3 Generator Hours	Annual Hours of Operation	NA	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	NA	hr/day

DRYER EMISSION RATE CALCULATIONS

Pollutant	DRYER STACK Emisson Factor [=] lb/ton	Emission Rate (Uncontrolled) [=] lb/hr	Emission Rate (Controlled) [=] lb/hr
Total PM	0.02	9.20	14.65
	[=] gr/dscf		
Total PM-10	0.04	1,720.00	14.65
	[=] lb/ton		
CO	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 Emisson Factor [=] lb/hp-hr	Emission Rate (Uncontrolled) [=] lb/hr	Emission Rate (Controlled) [=] 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 NAAQS Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Other ua,b,c	< 100 TPY Hours of Operation [=] hr/year	Permitted Impacts Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	NAAQS Calculated 24-hr Impact [=] µg/m3	Calculated Annual Impact [=] µg/m3	Other ua,b,c	< 100 TPY Calculated Emissions [=] ton/year
PM	N/S	N/S			24.0	3,808				
PM-10	24.0	8,760		8,760	Based on:	Based on:	9.90	0.86		32.22
CO	N/S	N/S		3,808	None	CO	35.15	3.06		99.00
CO ua			1.0				---	---	87.88	
CO ub			8.0		Limited to 99.0 T/yr.		---	---	61.52	
NO dx	N/S	8,760		8,760			---	1.29		41.88
SO d2	24.0	8,760		8,534			15.68	1.36		44.17
SO d2 uc			3.0				---	---	35.29	

MODELING ANALYSIS CALCULATIONS FOR NONATTAINMENT AREAS

Pollutant	Allowable Impacts NAAQS Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Other ua,b,c	< 100 TPY Hours of Operation [=] hr/year	Permitted Impacts Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	NAAQS Calculated 24-hr Impact [=] µg/m3	Calculated Annual Impact [=] µg/m3	Other ua,b,c	< 100 TPY Calculated Emissions [=] ton/year
PM	N/S	N/S			12.1	3,808				
PM-10	12.1	4,424		8,760	Based on:	Based on:	5.00	0.86		32.22
CO	N/S	N/S		3,808	PM-10	CO	17.75	3.06		99.00
CO ua			1.0				---	---	87.88	
CO ub			8.0		Limited to 99.0 T/yr.		---	---	61.52	
NO dx	N/S	8,760		8,760			---	1.29		41.88
SO d2	24.0	8,760		8,534			10.62	1.36		44.17
SO d2 uc			3.0				---	---	35.29	

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 Bins	#N/A	#N/A
Hot Bins -> 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

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 Bins	#N/A	#N/A
Hot Bins -> 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

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

ATTAINMENT & UNCLASSIFIABLE AREAS			NONATTAINMENT AREAS	
Uncontrolled	Controlled	Dryer	controlled	Controlled
17.5 T/yr	27.9 T/yr	PM	17.5 T/yr	27.9 T/yr
3274.6 T/yr	27.9 T/yr	PM-10	3274.6 T/yr	27.9 T/yr
99.0 T/yr	99.0 T/yr	CO	99.0 T/yr	99.0 T/yr
41.9 T/yr	41.9 T/yr	NOx	41.9 T/yr	41.9 T/yr
44.2 T/yr	44.2 T/yr	SO d2	44.2 T/yr	44.2 T/yr
		Generator		
0.0 T/yr	0.0 T/yr	PM	0.0 T/yr	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	0.0 T/yr	CO	0.0 T/yr	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	0.0 T/yr	SO d2	0.0 T/yr	0.0 T/yr
		Fugitives		
11.5 T/yr	11.5 T/yr	PM	11.5 T/yr	11.5 T/yr
4.3 T/yr	4.3 T/yr	PM-10	4.3 T/yr	4.3 T/yr
		Total u1		
29.0 T/yr	39.3 T/yr	PM	29.0 T/yr	39.3 T/yr
3278.9 T/yr	32.2 T/yr	PM-10	3278.9 T/yr	32.2 T/yr
99.0 T/yr	99.0 T/yr	CO	99.0 T/yr	99.0 T/yr
41.9 T/yr	41.9 T/yr	NOx	41.9 T/yr	41.9 T/yr
44.2 T/yr	44.2 T/yr	SO d2	44.2 T/yr	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	99.0 [=] T/yr of CO
3278.9 [=] T/yr of PM-10	99.0 [=] T/yr of CO	Facility PTE Summary	3278.9 [=] T/yr of PM-10	99.0 [=] T/yr of CO
Enforceable Limits -- Attainment Areas			Enforceable Limits -- Non-Attainment Areas	
24.0 hr/day	3,808 hr/yr		12.1 hr/day	3,808 hr/yr
Dryer Controlled Emission Rates		Emission Limits	Dryer Controlled Emission Rates	
14.6 lb/hr	27.9 T/yr	PM/PM-10	14.6 lb/hr	27.9 T/yr
52.0 lb/hr	99.0 T/yr	CO	52.0 lb/hr	99.0 T/yr
22.0 lb/hr	41.9 T/yr	NOx	22.0 lb/hr	41.9 T/yr
23.2 lb/hr	44.2 T/yr	SO d2	23.2 lb/hr	44.2 T/yr
Generator Controlled Emission Rates		Emission Limits	Generator Controlled Emission Rates	
0.0 lb/hr	0.0 T/yr	PM-10	0.0 lb/hr	0.0 T/yr
0.0 lb/hr	0.0 T/yr	CO	0.0 lb/hr	0.0 T/yr
0.0 lb/hr	0.0 T/yr	NOx	0.0 lb/hr	0.0 T/yr
0.0 lb/hr	0.0 T/yr	SO d2	0.0 lb/hr	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) 1-hr	3-hr	8-hr	24-hr	Annual (50% Attainment Hours)
PM					
PM-10				22.09915091	8.2196417
CO	14212.12		2373.484		
NO dx					29.3535616
SO d2		343.2128		94.8168	27.5683014
TOC					

Background Concentrations -- Attainment/Non-Classifiable Areas (ug/m3)

Pollutant	1-hr	3-hr	8-hr	24-hr	Annual
PM					
PM-10				86	32.7
CO	11400		5130		
NO dx					40
SO d2		543		144	23.5
TOC					

APPENDIX B

Modeling Results

Idaho Sand and Gravel, Portable

04/03/01

17:04:43
*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Idaho Sand & Gravel

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126000
STACK HEIGHT (M)	=	7.6200
STK INSIDE DIAM (M)	=	1.4000
STK EXIT VELOCITY (M/S)	=	22.9937
STK GAS EXIT TEMP (K)	=	421.9000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

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

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 75000.000 (ACFM)

BUOY. FLUX = 33.756 M**4/S**3; MOM. FLUX = 179.917 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.	.0000	1	1.0	1.0	320.0	307.66	4.48	4.46	NO
100.	.5239E-01	6	1.0	1.0	10000.0	87.33	23.14	22.89	NO
200.	.7297	4	20.0	20.0	6400.0	21.64	15.77	8.87	NO
300.	1.578	4	20.0	20.0	6400.0	21.64	22.85	12.54	NO
400.	1.670	4	20.0	20.0	6400.0	21.64	29.73	15.79	NO
500.	1.511	4	20.0	20.0	6400.0	21.64	36.40	18.79	NO

```
    600.    1.309        4    20.0    20.0   6400.0   21.64   42.93   21.64
NO
    700.    1.170        4    15.0    15.0   4800.0   27.62   49.52   24.70
NO
    800.    1.051        4    15.0    15.0   4800.0   27.62   55.87   27.39
NO
    900.    .9866        4    10.0    10.0   3200.0   37.62   62.47   30.69
NO
   1000.    .9259        4    10.0    10.0   3200.0   37.62   68.66   33.22
NO

 MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
    369.    1.685        4    20.0    20.0   6400.0   21.64   27.68   14.83
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       1.685           369.         0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
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APPENDIX C

AIRS Information

Idaho Sand and Gravel, Portable

ABBREVIATED AIRS DATA ENTRY SHEET - HOT MIX ASPHALT PLANTS

Name of Facility: Idaho Sand and Gravel

AIRS/Permit #: 777-00283

Permit Issue Date: XXXX, 2001

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

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