

May 26, 2000

MEMORANDUM

TO: Steve West, Administrator
Boise Regional Office

FROM: Michael DuBois, Air Quality Analyst *MD*
State Technical Services Office

SUBJECT: *PERMIT TO CONSTRUCT TECHNICAL ANALYSIS*
P-000053, Irvco Asphalt and Gravel Inc., Portable
(Standard Hot-Mix Asphalt Plant Permit to Construct No. 777-00255; Including
Aggregate, Asphalt, and Concrete Production when Collocated in Attainment Areas)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01.200 (*Rules for the Control of Air Pollution in Idaho*) for issuing Permits to Construct (PTC).

PROJECT DESCRIPTION

Irvco Asphalt and Gravel Inc. is proposing to commence construction of a portable hot-mix asphalt (HMA) plant to be operated in both nonattainment and attainment areas within the State of Idaho. Note that the Standard PTC for a portable hot-mix asphalt plant also includes provisions for collocated operations in attainment areas with one other portable source (i.e., rock crusher, hot-mix asphalt, or concrete batch plant). The HMA's maximum hourly throughput is 160 tons per hour (T/hr) and the facility does not include an electrical generator set. The HMA facility will initially be located near Fruitland, Idaho.

SUMMARY OF EVENTS

On April 12, 2000, the Idaho Department of Health and Welfare, Division of Environmental Quality (DEQ) received a PTC application. On May 8, 2000, the application was determined complete.

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 be fired on fuel oil, natural gas, or propane gas.

The Standard PTC requested will allow this hot-mix asphalt facility to collocate and simultaneously operate with one other portable plant (i.e., rock crusher, hot-mix asphalt plant, and/or concrete batch plant) in attainment areas. It is important to note that during collocated operations, this hot-mix asphalt plant is then part of a single, larger source engaged in the production of either asphalt, concrete and/or aggregate, depending upon which type of portable plant the hot-mix plant is collocated with. While collocated, the two portable plants are now considered to be one source, and the emissions of this single source is the sum of the emissions from the two portable plants. This single, larger source must comply with all applicable federal, state, and local requirements. To maintain

compliance, specific requirements and limitations have been included in the Standard PTC for this hot-mix asphalt plant for collocated operations. As described in the following sections of this Technical Memorandum, specific conservative assumptions and calculations were made to determine these Standard PTC collocation requirements. For this reason, the permit for the other portable plant with which this hot-mix asphalt plant will collocate must also contain specific collocation requirements based on the same conservative assumptions and calculations used in this Standard PTC.

2. Equipment Listing

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

2.1 Portable Hot-Mix Asphalt Plant

Manufacturer/Model:	Asphalt Drum Mixers, Inc.
Type:	Drum-Mix
Throughput Capacity (T/hr):	160
Burner Fuel Type:	#2 Fuel Oil
Dryer heat Input (MMBtu/hr):	49.3

2.2 Air Pollution Control Device

Type:	Wet Scrubber
Manufacturer:	Asphalt Drum Mixers, Inc
Model:	YWS7232

2.3 HMA Stack Information

Stack Height (ft):	12.5
Stack Diameter (ft):	3.43
Exhaust Gas Flowrate (acfm):	28000
Stack Exhaust Temp (°F):	180

2.4 Generator

Manufacturer/Model:	NA
Rated Power Output (kW):	
Fuel Type (gasoline/diesel):	
Fuel Usage (gal/hr):	
Stack Height (ft):	
Stack Diameter (ft):	
Exhaust Gas Flowrate (acfm):	
Stack Exhaust Temp (°F):	

When collocated, this hot-mix asphalt plant is then part of a single, larger source that produces either hot-mix asphalt, concrete and/or aggregate, depending upon which type of portable plant the hot-mix plant is collocated with. The equipment used by this single, larger

source would include the hot-mix asphalt plant equipment listed above, plus the equipment of the other portable plant. To see an equipment description for the other portable plant, see the corresponding permitting files for that plant.

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 Lotus spreadsheet and emission factors obtained from AP-42, Section 11.1, 1/95 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: PM (particulate matter), PM-10 (particulate matter with an aerodynamic diameter of less than or equal to ten [10] microns), NO_x (oxides of nitrogen), SO₂ (sulfur dioxide), and CO (carbon monoxide). 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) (i.e., 99 T/yr). In addition, allowable operational limits for the facility, which corresponds to the PTE <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 memo.

For collocated operations, a conservative approach is taken by limiting the emissions of each of the collocated units to half of the levels allowed when operating alone. Then the combined emissions of the two collocated sources will be within the allowable levels. See the information below for a more detailed description. This approach is designed to result in acceptable throughput limits for most collocation situations. In cases where the throughput limits are too restrictive, a site-specific analysis and permit amendment may be completed.

In summary, the emission estimates for this facility assume 160 T/hr throughput to a drum-mix HMA plant, one #2 diesel-fired, and fugitive dust emissions from specified sources (see the spreadsheet). There are no limiting pollutants which give the facility a PTE of 99 T/hr.

4.1 Collocated Operations in Attainment Areas

Standard PTCs will only allow collocation with one other portable source (i.e., rock crushing plant, hot-mix asphalt plant, or concrete batch plant) which has also received a Standard PTC that specifically allows collocation. When a combination of one portable hot-mix asphalt unit and one other portable unit are operated at a single location, the emissions of both units must be added together when determining PTE. Consistent with the approach taken for attainment area operations, the spreadsheet inherently limits the combined emissions of the two portable units to below certain triggering levels (i.e., PSD and Title V thresholds) by limiting the

maximum throughput of each. For collocated operations, half of the attainment area triggering levels are used as limits for calculating throughput for each source. The hot-mix asphalt plant throughput is then established based on the most limiting pollutant or pollutants (i.e., the pollutant whose emission rate is closest to 49.5 T/yr). For collocated attainment area operations, there are no limiting pollutant which give the hot-mix asphalt facility a PTE of 49.5 T/yr.

5. Modeling

Modeling of the asphalt plant stack emissions was conducted using EPA-approved SCREEN 3 computer-run model. The maximum one (1) hour impact from the dryer stack was calculated to be 17.26 $\mu\text{g}/\text{m}^3$ using a 1 lb/hr unity emission rate input to the model. The spreadsheet calculates the ambient impact for each air pollutant (PM, PM-10, NO_x, SO₂, 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 which protects the applicable National Ambient Air Quality Standard (NAAQS) as defined in IDAPA 16.01.01.577. In addition, the spreadsheet also calculates the most limiting pollutant in nonattainment areas and gives operational limits to protect applicable significant contribution requirements as defined in IDAPA 16.01.01.006.89. All SCREEN modeling output files are presented as Appendix B of this memo. Spreadsheet impact calculations and results are presented as Appendix A.

For collocated operations in attainment areas, operation of the hot-mix asphalt plant is limited as needed so that the modeled impacts will be half of the available allowable ambient impact. Likewise for collocated operations, the modeled impacts of the other portable facility will also be limited to half of the available allowable ambient impact so that the combined emissions of the two collocated sources will remain within the NAAQS. Using the 24-hour NAAQS standard for PM-10 (attainment area) as an example, one half of the allowable available impact would be equal to 32 $\mu\text{g}/\text{m}^3$, as follows:

$$32 \mu\text{g}/\text{m}^3 = 0.5 \times [150 \mu\text{g}/\text{m}^3 - 86 \mu\text{g}/\text{m}^3],$$

where 150 $\mu\text{g}/\text{m}^3$ is the 24-hour average standard and 86 $\mu\text{g}/\text{m}^3$ is the conservative statewide 24-hour average background value. Then operation of the HMA plant and its generator (if used) would be limited as needed, based on the specific ambient impact modeling, so that the modeled 24-hour concentration does not exceed 32 $\mu\text{g}/\text{m}^3$ at or beyond the facility's property boundary. This approach is designed to result in acceptable operational limits for most collocation situations. In cases where these limits are too restrictive, a site-specific analysis and permit amendment may be completed.

6. Facility Classification

Hot-mix asphalt plants (including collocated operations producing asphalt, concrete, and aggregate) are not designated facilities, as defined in IDAPA 16.01.01.006.27. This facility is not a major facility as defined in IDAPA 16.01.01.006.55 and IDAPA 16.01.01.008.10. The SIC code for this hot-mix asphalt facility is 2951. The AIRS facility classification for this facility is "A2" because the uncontrolled potential to emit is greater than 100 T/yr.

The spreadsheet included as Appendix A automatically determines the facility classification.

7. Regulatory Review

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

IDAPA 16.01.01.201	Permit to Construct
IDAPA 16.01.01.202	Application Procedures
IDAPA 16.01.01.203	Permit Requirements for New and Modified Stationary Sources
IDAPA 16.01.01.209	Procedures for Issuing Permits
IDAPA 16.01.01.211	Conditions for Permits to Construct
IDAPA 16.01.01.212	Obligation to Comply
IDAPA 16.01.01.577	Ambient Air Quality Standards
IDAPA 16.01.01.625	Visible Emissions
IDAPA 16.01.01.650	Rules for Control of Fugitive Dust
IDAPA 16.01.01.725	Rules for Sulfur Content of Fuels
IDAPA 16.01.01.805	Rules for the Control of Hot-Mix Asphalt Plants

This facility is an affected facility and is subject to regulation in accordance with 40 CFR Part 60, Subpart 1, "Standards of Performance for Hot-Mix Asphalt Facilities."

8. Permit Coordination

This hot-mix asphalt facility is not a major facility as defined by IDAPA 16.01.01.006.55 and IDAPA 16.01.01.008.10. However, the applicant has indicated that it is an NSPS-affected facility (40 CFR Part 60, Subpart I), and as such, it is a Tier I source as defined by IDAPA 16.01.01.006.104(b). In accordance with IDAPA 16.01.01.301.02(b), Tier I sources not located at major facilities do not require a Tier I operating permit until June 1, 2001, unless an earlier date is required by an applicable standard or EPA determines that no Tier I operating permit is required.

9. AIRS Information

The AIRS data base will be updated to include this new permit. AIRS forms are included as Appendix C of this technical analysis.

FEES

This facility is not a major facility as defined in IDAPA 16.01.01.008.10. Therefore, registration and registration fees in accordance with IDAPA 16.01.01.526 are not applicable.

Technical Analysis/Irvco Asphalt and Gravel, Inc.
May 26, 2000
Page 6

RECOMMENDATION

Based on review of application materials and state and federal rules and regulations, staff recommend that Irvco Asphalt and Gravel, Inc. be issued a PTC for a portable HMA facility. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD PTC requirements.

MD/hs 84458 G:\AH\WDUBOIS\PTC\IRVCO\000053.TM

cc: DEQ State Office
Boise Regional Office

INPUT SECTION - enter info in highlighted areas only

*Company: **Irco Asphalt and Gravel Inc.**
 Permit Engineer: **Michael DuBois**
 Date: **05/02/2000**
 Filename: **g:/ahw/dubois/pet/irco/0000053.wk**

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: **28,000 [-] actual cubic feet per minute (acfm)**
 Enter Dryer Stack Temperature: **180 [-] temperature (°F)**
 Enter Dryer Stack Moisture: **28.92 [-] moisture wt % (Default 18 wt%)**
 Enter Dryer Stack Pressure: **28.92 [-] stack pressure (Default 28.92 "Hg)**
 Calculated Corrected Flow Rate: **18,290 [-] dry standard cubic feet per minute (dscfm)**

Enter HMA Maximum Capacity: **160 [-] Ton/hr (Asphalt Throughput)**
 Enter HMA Modelled Concentration: **3726 [-] µg/m³ (1 hr concentration @ 1 lb/hr)**

Is a PM performance test required for this HMA plant? **Y** Y or N (Based on 40 CFR 60.50 Requirements)

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

A **S31**
12.46

SPREADSHEET DATA - information used by spreadsheet

State Wide Background Concentration for Criteria Air Pollutants	1 hr	3-hr	8-hr	24-hr	Annual
PM10					32.7
CO	11400		5100		40
NOx		540		144	23.5
SOx					

Parameters used in the Fugitive Emission Calculations:
 Maximum Wind Speed (U) **10 [-] mph**
 Material Moisture Content (M) **2.5 [-] %**
 Particle Size Multiplier (N) **0.35 [-] dimensionless**
 Emission Factors:
 PM10 (<10 µm) **0.0020 [-] lb/T**
 PM2.5 **0.0053 [-] lb/T**

Notes:
 1. EF = K*0.003*(U/5)^{1.3}/(M*2)^{1.4}
 Drop-Peak Equation, Reading "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	
HMA Dryer Stack:	6.5 lb/hr of PM	HMA Dryer Stack:	6.5 lb/hr of PM
Generator:	NA hr/day NA hr/year	Generator:	NA hr/day NA hr/year
HMA Plant Throughput Limits:	428 T/day	HMA Plant Throughput Limits:	1,401,600 T/yr
Collocated Attainment Areas			
HMA Dryer Stack:	6.5 lb/hr of PM	CO 1-hr Standard	60.0 minutes/1-hr
Generator:	NA hr/day NA hr/year	SO2 3-hr standard	3.0 hr/3-hr
HMA Plant Throughput Limits:	2,741 T/day	CO 8-hr Standard	8.0 hr/8-hr

INPETS TO PERMIT TO CONSTRUCT (PTC)	Value	Units
Section B "Attainment Area When Not Collocated"		
Section B.1.1 Facility Throughput Limits:	Annual Throughput Limit <<OR>>	1,401,600 T/yr
	Daily Throughput Limit	NA T/day
	Annual Throughput Limit	1,401,600 T/yr
	Annual Hours of Operation	NA hr/year
	<<AND/OR>>	NA hr/day
Section C "Attainment Area When Collocated"		
Section C.1.3 Facility Throughput Limits:	Annual Throughput Limit <<OR>>	700,800 T/yr
	Daily Throughput Limit	2,741 T/day
	Annual Throughput Limit	700,800 T/yr
	Annual Hours of Operation	NA hr/year
	<<AND/OR>>	NA hr/day
Section D "Nonattainment Area"		
Section D.1.1 Facility Throughput Limits:	Annual Throughput Limit <<OR>>	156,315 T/yr
	Daily Throughput Limit	428 T/day
	Annual Throughput Limit	156,315 T/yr
	Annual Hours of Operation	NA hr/year
	<<AND/OR>>	NA hr/day

2,671 hrs/day

DRYER EMISSION RATE CALCULATIONS

DRYER STACK			
Pollutant	Emission Factor [-] lb/ton	Emission Rate (Uncontrolled) [-] lb/hr	Emission Rate (Controlled) [-] lb/hr
Total PM	19.00	3,040.00	6.49
Total PM-10	[=] gr/dsc 0.04	688.00	6.49
CO	0.036 0.075	5.76 12.00	5.76 12.00
NO _x	0.056	8.96	8.96

GENERATOR EMISSION RATE CALCULATIONS

GENERATOR STACK			
Pollutant	Emission Factor [-] lb/hr-hr	Emission Rate (Uncontrolled) [-] lb/hr	Emission Rate (Controlled) [-] lb/hr
Total PM	0.04	0.00	0.00
Total PM-10	0.04	0.00	0.00
CO	N/A	0.00	0.00
NO _x	N/A	0.00	0.00
SO ₂	N/A	0.00	0.00

HMA emission factors for CO, NO_x, SO₂ and uncontrolled PM & PM-10 are from AP-42 Section 11.1. Controlled PM & PM-10 is from the NPS 0.04 gr/dsc.

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

MODELING ANALYSIS CALCULATIONS FOR ATTAINMENT AREAS

Pollutant	Hours of Operation [-] hr/day	Attainable Impacts			Hours of Operation [-] hr/day	Permitted Impacts	NAAQS	Calculated Annual Impact [-] lb/yr	Calculated Annual Impact [-] lb/yr	Other AAs	Calculated Emissions [-] lb/yr			
		< 100 TYP	< 100 TYP	< 100 TYP										
PM-10	24.0	N/A	8,760	8,760	24.0	8,760	8,760	44.83	8.97	39.77	7.95	99.42	25.23	
CO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39.77	7.95	39.77	7.95	99.42	25.23	
NO _x	N/A	N/A	N/A	N/A	N/A	N/A	N/A	61.86	16.57	61.86	12.37	139.18	52.56	
SO ₂	24.0	8,760	8,760	8,760	24.0	8,760	8,760	61.86	12.37	61.86	12.37	139.18	39.24	

MODELING ANALYSIS CALCULATIONS FOR NONATTAINMENT AREAS

Pollutant	Hours of Operation [-] hr/day	Attainable Impacts			Hours of Operation [-] hr/day	Permitted Impacts	NAAQS	Calculated Annual Impact [-] lb/yr	Calculated Annual Impact [-] lb/yr	Other AAs	Calculated Emissions [-] lb/yr			
		< 100 TYP	< 100 TYP	< 100 TYP										
PM-10	2.7	N/A	977	977	2.7	8,760	8,760	5.00	1.00	4.44	0.89	99.42	3.62	
CO	N/A	N/A	N/A	N/A	N/A	8,760	8,760	4.44	0.89	4.44	0.89	99.42	2.81	
NO _x	N/A	N/A	N/A	N/A	N/A	8,760	8,760	4.44	0.89	4.44	0.89	99.42	2.81	
SO ₂	24.0	8,760	8,760	8,760	24.0	8,760	8,760	7.45	1.85	7.45	1.38	124.18	4.38	

FLUCTUATE EMISSION CALCULATIONS FOR ATTAINMENT AREAS

	PM	PM10
Pre-Dryer Source Emissions ([-] lb/hr)		
Loader -> Cold Aggregate Bin	0.80	0.30
Cold Aggregate Bin -> Conveyor	0.80	0.30
Conveyor -> Drum Dryer	0.80	0.30
Total Pre-Dryer Source Emissions	2.41	0.91
Post-Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bin	NA	NA
Hot Bin -> Weigh Hopper	NA	NA
Weigh Hopper -> Pug Mill	NA	NA
Total Post-Dryer Source Emissions	NA	NA
Scavenger Control Efficiency	NA	NA
Total Uncontrolled Emissions ([-] lb/hr)	2.41	0.91
Total Uncontrolled Emissions ([-] T/yr)	10.54	3.99
Total Controlled Emissions ([-] lb/hr)	2.41	0.91
Total Controlled Emissions ([-] T/yr)	10.54	3.99

Source: National Asphalt Pavement Association
 a. CO 1 hr Averaging Period
 b. CO 8 hr Averaging Period
 c. SO₂ 3 hr Averaging Period

FLUCTUATE EMISSION CALCULATIONS FOR NONATTAINMENT AREAS

	PM	PM10
Pre-Dryer Source Emissions ([-] lb/hr)		
Loader -> Cold Aggregate Bin	0.80	0.30
Cold Aggregate Bin -> Conveyor	0.80	0.30
Conveyor -> Drum Dryer	0.80	0.30
Total Pre-Dryer Source Emissions	2.41	0.91
Post-Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bin	NA	NA
Hot Bin -> Weigh Hopper	NA	NA
Weigh Hopper -> Pug Mill	NA	NA
Total Post-Dryer Source Emissions	NA	NA
Scavenger Control Efficiency	NA	NA
Total Uncontrolled Emissions ([-] lb/hr)	2.41	0.91
Total Uncontrolled Emissions ([-] T/yr)	1.18	0.44
Total Controlled Emissions ([-] lb/hr)	2.41	0.91
Total Controlled Emissions ([-] T/yr)	1.18	0.44

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

ATTAINMENT & UNCLASSIFIABLE AREAS				NONATTAINMENT AREAS			
Uncontrolled		Controlled		Uncontrolled		Controlled	
133152 T/yr	28.4 T/yr	28.4 T/yr	28.4 T/yr	1485.0 T/yr	3.2 T/yr	3.2 T/yr	3.2 T/yr
3013.4 T/yr	28.4 T/yr	28.4 T/yr	28.4 T/yr	336.1 T/yr	3.2 T/yr	3.2 T/yr	3.2 T/yr
25.2 T/yr	25.2 T/yr	25.2 T/yr	25.2 T/yr	2.8 T/yr	2.8 T/yr	2.8 T/yr	2.8 T/yr
52.6 T/yr	52.6 T/yr	52.6 T/yr	52.6 T/yr	5.9 T/yr	5.9 T/yr	5.9 T/yr	5.9 T/yr
39.2 T/yr	39.2 T/yr	39.2 T/yr	39.2 T/yr	4.4 T/yr	4.4 T/yr	4.4 T/yr	4.4 T/yr
0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr
0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr
0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr
0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 T/yr
10.5 T/yr	10.5 T/yr	10.5 T/yr	10.5 T/yr	1.2 T/yr	1.2 T/yr	1.2 T/yr	1.2 T/yr
4.0 T/yr	4.0 T/yr	4.0 T/yr	4.0 T/yr	0.4 T/yr	0.4 T/yr	0.4 T/yr	0.4 T/yr
13325.7 T/yr	39.0 T/yr	39.0 T/yr	39.0 T/yr	1486.2 T/yr	4.3 T/yr	4.3 T/yr	4.3 T/yr
3012.4 T/yr	32.4 T/yr	32.4 T/yr	32.4 T/yr	336.5 T/yr	3.6 T/yr	3.6 T/yr	3.6 T/yr
25.2 T/yr	25.2 T/yr	25.2 T/yr	25.2 T/yr	2.8 T/yr	2.8 T/yr	2.8 T/yr	2.8 T/yr
52.6 T/yr	52.6 T/yr	52.6 T/yr	52.6 T/yr	5.9 T/yr	5.9 T/yr	5.9 T/yr	5.9 T/yr
39.2 T/yr	39.2 T/yr	39.2 T/yr	39.2 T/yr	4.4 T/yr	4.4 T/yr	4.4 T/yr	4.4 T/yr
3017.4 [-] T/yr of PM-10	52.6 [-] T/yr of NO _x	52.6 [-] T/yr of NO _x	52.6 [-] T/yr of NO _x	336.5 [-] T/yr of PM-10	5.9 [-] T/yr of NO _x	5.9 [-] T/yr of NO _x	5.9 [-] T/yr of NO _x
13325.7 [-] T/yr of PM	52.6 [-] T/yr of NO _x	52.6 [-] T/yr of NO _x	52.6 [-] T/yr of NO _x	1486.2 [-] T/yr of PM	5.9 [-] T/yr of NO _x	5.9 [-] T/yr of NO _x	5.9 [-] T/yr of NO _x
Enforceable Limits -- Attainment Areas				Enforceable Limits -- Non-Attainment Areas			
24.0 hr/day		8,760 hr/yr		2.7 hr/day		977 hr/yr	
Dryer Controlled Emission Rates				Dryer Controlled Emission Rates			
6.5 lb/hr	28.4 T/yr	28.4 T/yr	28.4 T/yr	6.5 lb/hr	3.2 T/yr	3.2 T/yr	3.2 T/yr
5.8 lb/hr	25.2 T/yr	25.2 T/yr	25.2 T/yr	5.8 lb/hr	2.8 T/yr	2.8 T/yr	2.8 T/yr
12.0 lb/hr	52.6 T/yr	52.6 T/yr	52.6 T/yr	12.0 lb/hr	5.9 T/yr	5.9 T/yr	5.9 T/yr
9.0 lb/hr	39.2 T/yr	39.2 T/yr	39.2 T/yr	9.0 lb/hr	4.4 T/yr	4.4 T/yr	4.4 T/yr
Generator Controlled Emission Rates				Generator Controlled Emission Rates			
0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr
0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr
0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr
0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr	0.0 lb/hr	0.0 T/yr	0.0 T/yr	0.0 T/yr

1 Total is the dryer, generator and fugitives added together for total PTE.
 2 Title V PTE summary does not account for PM only PM-10.

Attainment Area - Collocated Units - Calculations		Collocation Ambient Air Quality Standards - Calculations				
Pollutant	Unit	1-hr, 3-hr, 8-hr, & 24-hr standards are set in half for collocation)				Annual (50% Attainment Hours)
		1-hr	3-hr	8-hr	24-hr	
PM ₁₀	µg/m ³	14200	3824	2365.40768	-12.81243099	4.1667569014
CO	ppm					21.7152
NO _x	ppb					22.064016
SO ₂	ppb					48.64016
TOC	µg/m ³					22.064016
Background Concentrations - Attainment/Non-Classifiable Areas (µg/m ³)						
Pollutant	Unit	1-hr	3-hr	8-hr	24-hr	Annual
PM ₁₀	µg/m ³					86
CO	ppm		11400			32.7
NO _x	ppb					5130
SO ₂	ppb			543		144
TOC	µg/m ³					40
						23.5

05/03/00

13:41:28

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

IRVCO Asphalt + Gravel Inc.

No Title

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	3.8100
STK INSIDE DIAM (M)	=	1.0455
STK EXIT VELOCITY (M/S)	=	15.3937
STK GAS EXIT TEMP (K)	=	355.3722
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 = 7.223 M**4/S**3; MOM. FLUX = 53.417 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

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

DIST	CONC		U10M	USTK	MIX HT	PLUME	SIGMA
(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)
Z (M)	DWASH						
1.	0.000	1	1.0	1.0	320.0	98.20	2.90
2.87	NO						

100.	17.24	4	20.0	20.0	6400.0	7.00	8.26
4.75	NO						
200.	11.33	4	15.0	15.0	4800.0	9.11	15.67
8.69	NO						
300.	8.064	4	8.0	8.0	2560.0	15.61	22.86
12.55	NO						
400.	6.571	4	8.0	8.0	2560.0	15.61	29.65
15.64	NO						
500.	5.672	4	5.0	5.0	1600.0	22.69	36.55
19.08	NO						
600.	4.981	4	4.5	4.5	1440.0	24.79	43.14
22.04	NO						
700.	4.428	4	4.0	4.0	1280.0	27.41	49.65
24.96	NO						
800.	3.983	4	3.5	3.5	1120.0	30.78	56.10
27.87	NO						
900.	3.621	4	3.5	3.5	1120.0	30.78	62.36
30.46	NO						
1000.	3.334	4	3.0	3.0	960.0	35.27	68.72
33.33	NO						

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

103.	17.26	4	20.0	20.0	6400.0	7.00	8.56
4.91	NO						

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

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M).	TERRAIN HT (M)
----- SIMPLE TERRAIN	----- 17.26	----- 103.	----- 0.