



OCT 14 2010

Bret Wells  
Glenn Wells Construction Co.  
P.O. Box 3104  
Visalia, CA 93278-3104

**Re: Notice of Preliminary Decision - Authority to Construct  
Project Number: S-1102179**

Dear Mr. Wells:

Enclosed for your review and comment is the District's analysis of Glenn Wells Construction Co.'s application for an Authority to Construct for modification of a 124.5 MMBtu/hr diesel-fired continuous drum-mix asphalt plant to decrease NOx emission limit to 12 ppmv @ 19% O2 and increase the CO emission limit to 64 ppmv @ 19% O2 for District Rule 4309 compliance, at 22400 Avenue 335, Woodlake, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jesse A. Garcia of Permit Services at (559) 230-5918.

Sincerely,

David Warner  
Director of Permit Services

DW:jag

Enclosures

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

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**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
Tel: (559) 230-6000 FAX: (559) 230-6061

**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



OCT 14 2010

Mike Tollstrup, Chief  
Project Assessment Branch  
Stationary Source Division  
California Air Resources Board  
PO Box 2815  
Sacramento, CA 95812-2815

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: S-1102179**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Glenn Wells Construction Co.'s application for an Authority to Construct for modification of a 124.5 MMBtu/hr diesel-fired continuous drum-mix asphalt plant to decrease NOx emission limit to 12 ppmv @ 19% O2 and increase the CO emission limit to 64 ppmv @ 19% O2 for District Rule 4309 compliance, at 22400 Avenue 335, Woodlake, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

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Visalia Times-Delta  
Visalia Times-Delta

**NOTICE OF PRELIMINARY DECISION  
FOR THE PROPOSED ISSUANCE OF  
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Glenn Wells Construction Co. for the modification of a 124.5 MMBtu/hr diesel-fired continuous drum-mix asphalt plant to decrease NOx emission limit to 12 ppmv @ 19% O2 and increase the CO emission limit to 64 ppmv @ 19% O2 for District Rule 4309 compliance, at 22400 Avenue 335 in Woodlake, CA.

The analysis of the regulatory basis for this proposed action, Project #S-1102179, is available for public inspection at [http://www.valleyair.org/notices/public\\_notices\\_idx.htm](http://www.valleyair.org/notices/public_notices_idx.htm) and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
Hot Mix Asphalt Plant

Facility Name:	Glen Wells Construction Company	Date:	August 25, 2010
Mailing Address:	PO Box 3104 Visalia, CA 93278	Engineer:	Jesse A. Garcia
Contact Person:	Bret Wells	Lead Engineer:	Joven Refuerzo
Telephone:	(559) 625-0695		
Fax:	(559) 625-1472		
E-Mail:	N/A		
Application #:	S-169-3-4		
Project #:	S-1102179		
Deemed Complete:	May 3, 2010		

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**I. Proposal**

Glen Wells Construction Company requests Authority to Construct (ATC) permit for the modification of a 124.5 MMBtu/hr unit at its hot mix asphalt plant. In order to comply with District Rule 4309 NO<sub>x</sub> requirements, the applicant proposes to modify an existing unit to retune the existing burner to meet the 12 ppmvd @ 19% O<sub>2</sub> (equivalent to 0.1448 lb/MMBtu) NO<sub>x</sub> emission requirements of District Rule 4309 *Dryers, Dehydrators, and Ovens*. The applicant has proposed to increase the permitted CO emission factor from 13 ppmvd-CO @ 19% O<sub>2</sub> (0.094 lb-CO/MMBtu) to 64 ppmvd-CO @ 19% O<sub>2</sub> (0.4702 lb-CO/MMBtu).

These modifications are proposed solely to comply with District Rule 4309 requirements. Since there is a change to the method of operation of the unit, these changes are modifications pursuant to District Rule 2201, *New and Modified Stationary Source Review Rule*.

There is one unimplemented ATC associated with this project. The applicant has stated that ATC S-169-3-3 shall be cancelled and superseded by the ATC issued in this project; therefore, the following condition will be added to the permit to ensure compliance:

- This Authority to Construct (ATC) cancels and supersedes ATC S-169-3-3. [District Rule 2201]

*See Appendix A: Current Permit To Operate (PTO)*

**II. Applicable Rules**

Rule 2201	New and Modified Stationary Source Review Rule (9/21/06)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)

Rule 4101 Visible Emissions (2/17/05)  
Rule 4102 Nuisance (12/17/92)  
Rule 4201 Particulate Matter Concentration (12/17/92)  
Rule 4202 Particulate Matter Emission Rate (12/17/92)  
Rule 4301 Fuel Burning Equipment (12/17/92)  
Rule 4309 Dryers, Dehydrators, and Ovens (12/15/05)  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### III. Project Location

The site is located at 22400 Ave. 335 in Woodlake, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### IV. Process Description

The facility produces hot mix asphaltic concrete. Aggregate is conveyed to the drum dryer where it is heated and dried. The aggregate is then mixed with asphaltic cement in the last 1/3 of the drum dryer to produce asphaltic concrete. The asphaltic concrete is sent to the load out storage silo via an elevated conveyor where it is loaded into trucks.

The existing 124.5 MMBtu/hr dryer is permitted to fire on diesel fuel. A scrubber is used for the control of particulate matter. The scrubber serves a dryer, an elevated conveyor, a hot aggregate bin, a screen, and a weigh hopper. The fines that are collected are returned to the mixer via a closed conveying system.

### V. Equipment Listing

#### Asphalt Concrete Plant:

Manufacturer: Barber-Greene Company  
Model #: N/A  
Type: Continuous-drum mix  
Production: 325 tons/hr

#### Aggregate Drier/Burner:

Burner Manufacturer: Barber-Greene Company  
Model: N/A  
Rating: 124.5 MMBtu/hr (direct-fired)  
Fuel Type: Diesel

#### Other Equipment:

Enclosed slat conveyors

Aggregate collection conveyor and aggregate scale conveyor  
Aggregate screen  
Asphaltic concrete storage silo and a truck load out  
Venturi scrubber

Pre-Project Equipment Description:

S-169-3-2: 124.5 MMBTU/HR DIESEL-FIRED BARBER-GREENE CONTINUOUS DRUM-MIX ASPHALT PLANT

Proposed Modification:

S-169-3-4: MODIFICATION OF A 124.5 MMBTU/HR DIESEL-FIRED BARBER-GREENE CONTINUOUS DRUM-MIX ASPHALT PLANT: RETUNE THE BURNER, LOWER NOX EMISSIONS LIMIT TO 12 PPMV @ 19% O2 (EQUIVALENT TO 0.1448 LB-NOX/MMBTU) AND INCREASE CO EMISSIONS LIMIT TO 64 PPMV @ 19% O2 (EQUIVALENT TO 0.4702 LB-CO/MMBTU) FOR RULE 4309 COMPLIANCE

Post Project Equipment Description:

S-169-3-4: 124.5 MMBTU/HR DIESEL-FIRED BARBER-GREENE CONTINUOUS DRUM-MIX ASPHALT PLANT

## VI. Emission Control Technology Evaluation

The production of asphaltic concrete will result in NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions emitted by the production system, which is served by a scrubber. The scrubber will limit the amount of emissions. The combustion of diesel fuel in the drum dryer will result in NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions. By limiting the annual hours of operation the amounts of emissions are reduced.

## VII. General Calculations

### A. Assumptions

Emissions are based on the worst-case scenario for maximum throughput for the hot mix asphaltic concrete plant:

- Maximum daily operating schedule is 11 hr/day (per permit, see Appendix A)
- Maximum annual operating schedule is 1,705 hr/year (per permit, see Appendix A)
- Heating value of diesel fuel is 137,000 Btu/gal
- Density of diesel fuel: 7.1 lb/gal
- EPA F-factor for diesel fuel: 9,190 dscf/MMBtu
- Asphalt production rate shall not exceed 325 tons/hr (per permit, see Appendix A)
- PM10 emission rate from aggregate storage piles = 4.5 lb/hr (per permit, see Appendix A)
- PM10 emission rate from aggregate conveyors = 0.6 lb/hr (per permit, see Appendix A)

**B. Emissions Factors**

**Pre-Project Emission Factors (EF1)**

Drum dryer w/ diesel fuel combustion:

Pre-Project Emission Factors		
Pollutant	Emission Factor (lb/MMBtu)	Source
NO <sub>x</sub>	0.196	Current Permit
SO <sub>x</sub>	0.146	
PM10	0.081	
CO	0.094	
VOC	0.180	

Aggregate storage piles:

The following emission factor is from the current permit (see Appendix A):

Pollutant	Emission Factor (lb/hr)
PM <sub>10</sub>	4.8

Aggregate conveyors:

The following emission factor is from the current permit (see Appendix A):

Pollutant	Emission Factor (lb/hr)
PM <sub>10</sub>	0.6

**Post-Project Emission Factors (EF2)**

Drum dryer w/ diesel fuel combustion:

Post-Project Emission Factors			
Pollutant	Emission Factor		Source
NO <sub>x</sub>	12 ppmv	0.1448 lb/MMBtu <sup>1</sup>	Per Applicant
SO <sub>x</sub>	0.146 lb/MMBtu		Current Permit
PM10	0.081 lb/MMBtu		Current Permit
CO	64 ppmv <sup>2</sup>	0.4702 lb/MMBtu	Per Applicant
VOC	0.180 lb/MMBtu		Current Permit

<sup>1</sup> Converted from Rule 4309 limit 12.0 ppmv in District Calculator, see Appendix E.

<sup>2</sup> Converted from permit limit of 64 ppmv in District Calculator, see Appendix E.

The emissions factors from the aggregate storage piles and conveyors remain unchanged from pre-project limits.

### C. Calculations

#### 1. Pre-Project Potential to Emit (PE1)

Daily NO<sub>x</sub>, SO<sub>x</sub>, CO, VOC Emissions:

$$PE1_{dryer} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 11 \text{ hr/day}$$

Daily PM<sub>10</sub> Emissions:

$$PE1_{PM10} = PE1_{dryer} + PE1_{storage} + PE1_{conveyors}$$

Where,

$$PE1_{dryer} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 11 \text{ hr/day}$$

$$PE1_{storage} = \text{Emission Factor} \times 11 \text{ hr/day} = 4.8 \text{ lb/hr} \times 11 \text{ hr/day} = 52.8 \text{ lb/day}$$

$$PE1_{conveyors} = \text{Emission Factor} \times 11 \text{ hr/day} = 0.6 \text{ lb/hr} \times 11 \text{ hr/day} = 6.6 \text{ lb/day}$$

Daily Pre-Project Emissions				
Pollutant	Emissions Factor (lb/MMBtu)	Burner Rating (MMBtu/hr)	Daily Operation Limit (hr/day)	PE1 Total (lb/day)
NO <sub>x</sub>	0.196	124.5	11	268.4
SO <sub>x</sub>	0.146	124.5	11	199.9
CO	0.094	124.5	11	128.7
VOC	0.180	124.5	11	246.5

$$PE1_{PM10} = 0.081 \text{ lb/MMBtu} \times 124.5 \text{ MMBtu/hr} \times 11 \text{ hr/day} + 52.8 \text{ lb/day} + 6.6 \text{ lb/day}$$

$$PE1_{PM10} = 170.3 \text{ lb/day}$$

Annual NO<sub>x</sub>, SO<sub>x</sub>, CO, VOC Emissions:

$$PE2_{dryer} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 1,705 \text{ hr/yr}$$

Annual PM<sub>10</sub> Emissions:

$$PE1_{PM10} = PE1_{dryer} + PE1_{storage} + PE1_{conveyors}$$

Where,

$$PE1_{dryer} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 1,705 \text{ hr/yr}$$

$$PE1_{storage} = \text{Emission Factor} \times 1,705 \text{ hr/yr} = 4.8 \text{ lb/hr} \times 1,705 \text{ hr/yr} = 8,184 \text{ lb/yr}$$



$$PE1_{\text{conveyors}} = \text{Emission Factor} \times 1,705 \text{ hr/yr} = 0.6 \text{ lb/hr} \times 1,705 \text{ hr/yr} = 1,023 \text{ lb/yr}$$

Annual Pre-Project Emissions				
Pollutant	Emissions Factor (lb/MMBtu)	Burner Rating (MMBtu/hr)	Annual Operation Limit (hr/yr)	PE1 Total (lb/yr)
NO <sub>x</sub>	0.196	124.5	1,705	41,605
SO <sub>x</sub>	0.146	124.5	1,705	30,992
CO	0.094	124.5	1,705	19,954
VOC	0.180	124.5	1,705	38,209

$$PE1_{\text{PM}_{10}} = 0.081 \text{ lb/MMBtu} \times 124.5 \text{ MMBtu/hr} \times 1,705 \text{ hr/yr} + 8,184 \text{ lb/yr} + 1,023 \text{ lb/yr}$$

$$PE1_{\text{PM}_{10}} = 26,401 \text{ lb/yr}$$

## 2. Post-Project Potential to Emit (PE2)

Only NO<sub>x</sub> and CO emissions will be calculated based on the revised emission limit of 12 ppmv @ 19% O<sub>2</sub> and 64 ppmv @ 19% O<sub>2</sub> respectively, as proposed by the applicant. All other emissions remain unchanged.

### Daily NO<sub>x</sub> Emissions:

$$PE2_{\text{NO}_x} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 11 \text{ hr/day}$$

$$PE2_{\text{NO}_x} = 0.1448 \text{ lb/MMBtu} \times 124.5 \text{ MMBtu/hr} \times 11 \text{ hr/day}$$

$$PE2_{\text{NO}_x} = 198.3 \text{ lb/day}$$

### Daily CO Emissions:

$$PE2_{\text{CO}} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 11 \text{ hr/day}$$

$$PE2_{\text{CO}} = 0.4702 \text{ lb/MMBtu} \times 124.5 \text{ MMBtu/hr} \times 11 \text{ hr/day}$$

$$PE2_{\text{CO}} = 643.9 \text{ lb/day}$$

### Annual NO<sub>x</sub> Emissions:

$$PE2_{\text{NO}_x} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 1,705 \text{ hr/yr}$$

$$PE2_{\text{NO}_x} = 0.1448 \text{ lb/MMBtu} \times 124.5 \text{ MMBtu/hr} \times 1,705 \text{ hr/yr}$$

$$PE2_{\text{NO}_x} = 30,737 \text{ lb/yr}$$

### Annual CO Emissions:

$$PE2_{\text{CO}} = \text{Emission Factor} \times 124.5 \text{ MMBtu/hr} \times 1,705 \text{ hr/yr}$$

$$PE2_{CO} = 0.4702 \text{ lb/MMBtu} \times 124.5 \text{ MMBtu/hr} \times 1,705 \text{ hr/yr}$$

$$PE2_{CO} = 99,811 \text{ lb/yr}$$

Total Emissions:

Post Project Potential to Emit (PE2)		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO <sub>x</sub>	198.3	30,737
SO <sub>x</sub>	199.9	30,992
PM10	170.3	26,401
CO	643.9	99,811
VOC	246.5	38,209

### 3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-169-3-2*	41,605	30,992	26,401	19,954	38,209
S-169-4-0**	3,197	1,151	160	799	89
S-169-5-0**	3,166	83	50	4,440	524
Pre-Project SSPE (SSPE1)	47,968	32,226	26,611	25,193	38,822

\*Calculated in Section VII.C.1

\*\*Calculated under project S-1010932

### 4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-169-3-4	30,737	30,992	26,401	99,811	38,209
S-169-4-0	3,197	1,151	160	799	89

S-169-5-0	3,166	83	50	4,440	524
Post-Project SSPE (SSPE2)	37,100	32,226	26,611	105,050	38,822

## 5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

Major Source Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	47,968	32,226	26,611	25,193	38,822
Post Project SSPE (SSPE2)	37,100	32,226	26,611	105,050	38,822
Major Source Threshold	50,000	140,000	140,000	200,000	50,000
Major Source?	No	No	No	No	No

This source is not existing Major Source for any pollutant and will not become a Major Source for any pollutant as a result of this project.

## 6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project, to calculate the QNEC and if applicable, to determine the amount of offsets required.

Pursuant to Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22 of District Rule 2201.

NO<sub>x</sub> and CO are the only emissions associated with the unit being modified. As shown in Section VII.C.5 above, the facility is not a major source for NO<sub>x</sub> or CO emissions. Therefore, BE = PE1 = 41,605 lb-NO<sub>x</sub>/yr and BE = PE1 = 19,954 lb-CO/yr.

## **7. Major Modification**

Major Modification is defined in 40 CFR Part 51.165 as *"any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."*

As discussed in Section VII.C.5 above, the facility is not a Major Source for any pollutant; therefore, the project does not constitute a Major Modification.

## **8. Federal Major Modification**

As shown above, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

## **9. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix C.

## **VIII. Compliance**

### **Rule 2201 New and Modified Stationary Source Review Rule**

#### **A. Best Available Control Technology (BACT)**

##### **1. BACT Applicability**

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

\*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

However, BACT shall not be required for the following:

- 4.2.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from Best Available Control Technology for all air pollutants, provided all of the following conditions are met:

- 4.2.3.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;
- 4.2.3.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;
- 4.2.3.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and
- 4.2.3.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO<sub>x</sub>, or 25 tons per year of VOC, or 15 tons per year of SO<sub>x</sub>, or 15 tons per year of PM<sub>10</sub>, or 50 tons per year of CO.
- 4.2.3.5 The project shall not constitute a federal major modification.

Since each of the above-listed criteria is met, BACT is not triggered for any pollutant.

## **2. BACT Guideline**

Since BACT is not triggered, the proposed operation is not subject to any BACT guideline. No further discussion is required.

## **3. Top-Down BACT Analysis**

Since BACT is not triggered, the proposed operation is not subject to a top-down BACT analysis. No further discussion is required.

## **B. Offsets**

### **1. Offset Applicability**

The proposed modifications are solely for compliance with Rule 4309, and are exempt from offsets if the following criteria are satisfied. Rule 2201, Section 4.6.8 provides the following exemption from offsets.

Emission offsets shall not be required for the following:

- 4.6.8 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met:
  - 4.6.8.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;
  - 4.6.8.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.6.8.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.6.8.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO<sub>x</sub>, or 25 tons per year of VOC, or 15 tons per year of SO<sub>x</sub>, or 15 tons per year of PM-10, or 50 tons per year of CO.

Since the above-listed criteria are met, offsets are not triggered for any pollutant.

## **2. Quantity of Offsets Required**

As seen above, the project meets the exemption requirements of section 4.6.8 of District Rule 2201; therefore offset calculations are not necessary and offsets are not required for this project.

## **C. Public Notification**

### **1. Applicability**

Public noticing is required for:

- a. Any new Major Source, which is a new facility that is also a Major Source,
- b. Major Modifications,
- c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d. Any project which results in the offset thresholds being surpassed, and/or
- e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

#### **a. New Major Source**

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

#### **b. Major Modification**

As demonstrated in VII.C.7, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

#### **c. PE > 100 lb/day**

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant; therefore public noticing for PE > 100 lb/day purposes is not required.

**d. Offset Threshold**

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<b>Offset Threshold</b>				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	47,968	37,015	20,000 lb/year	No
SO <sub>x</sub>	32,226	32,226	54,750 lb/year	No
PM <sub>10</sub>	26,611	26,611	29,200 lb/year	No
CO	25,193	105,050	200,000 lb/year	No
VOC	38,822	38,822	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

**e. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e.  $SSIPE = SSPE2 - SSPE1$ . The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	37,100	47,968	-10,868	20,000 lb/year	No
SO <sub>x</sub>	32,226	32,226	0	20,000 lb/year	No
PM <sub>10</sub>	26,611	26,611	0	20,000 lb/year	No
CO	105,050	25,193	79,857	20,000 lb/year	Yes
VOC	38,822	38,822	0	20,000 lb/year	No

As demonstrated above, the SSIPE for CO was greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

**2. Public Notice Action**

As discussed above, public noticing is required for this project for CO for an SSIPE in excess of 20,000 lb/year. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

## **D. Daily Emission Limits (DELs)**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

The following conditions will be added to ensure the unit is in compliance:

- Facility operation shall not exceed 11 hours/day and 1,705 hours/year. [District Rule 2201] N
- Asphalt production rate shall not exceed 325 tons/hour [District Rule 2201] N
- Emission rate from the asphalt drum heater shall not exceed any of the following: 0.180 lb/VOC/MMBtu; 0.1448 lb-NO<sub>x</sub>/MMBtu (equivalent to 12 ppmvd NO<sub>x</sub> @ 19% O<sub>2</sub>); 0.4702 lb-CO/MMBtu (equivalent to 64 ppmvd CO @ 19% O<sub>2</sub>); 0.081 lb-PM<sub>10</sub>/MMBtu; or 0.146 lb-SO<sub>x</sub>/MMBtu. If measured O<sub>2</sub> concentration is greater than 19%, the corrected NO<sub>x</sub> or CO concentration is equal to the measured NO<sub>x</sub> or CO concentration. [District Rules 2201 and 4309] N
- PM<sub>10</sub> emission rate from aggregate storage piles (active and inactive) shall not exceed 4.8 lb/hr. [District Rule 2201] N
- PM<sub>10</sub> emission rate from aggregate conveyors shall not exceed 0.6 lb/hr. [District Rule 2201] N

## **E. Compliance Assurance**

### **1. Source Testing**

Rule 4309 requires the appropriate amount of testing to show compliance with the Rule, and since this is a rule compliance project and APR-1705 would not require more stringent testing, the testing under Rule 4309 will be required.

### **2. Monitoring**

The facility will be required to monitor total daily throughput of the operation.



### 3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition will appear on the permit to operate:

- Daily records of drum dryer/mix product temperature, quantity of aggregate and asphaltic concrete processed, quantity of reclaimed asphalt product processed, and quantity of natural gas/LPG consumed shall be maintained. [District Rule 2201]

### 4. Reporting

The permittee shall maintain records in accordance with Sec. 3.0 of District Rule 1070 as required by permit condition.

### F. Ambient Air Quality Analysis

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Appendix D of this document for the AAQA summary sheet.

The proposed location is in an attainment area for CO. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for CO.

See a summary of the Criteria Pollutant Modeling Results below:

Unit -3-4	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X

### Rule 2520 Federally Mandated Operating Permits

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

### Rule 4001 New Source Performance Standards (NSPS)

The requirements of the Code of Federal Regulations, Chapter 40, Part 60, Subpart I – *Standards of Performance for Hot Mix Asphalt Facilities* applies to an affected facility that is a hot mix asphalt facility, and to any hot mix asphalt facility that has commenced construction or modification after June 11, 1973. This unit satisfies the grain loading and opacity requirements of Subpart I. No additional notification or reporting is required. Continued compliance is expected.

### Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of

hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to hot mix asphalt operations.

#### **Rule 4101 Visible Emissions**

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Visible emissions from the reclaimed asphalt pavement are not expected to exceed Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions.

#### **Rule 4102 Nuisance**

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

#### **California Health & Safety Code 41700 (Health Risk Assessment)**

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

Since the applicant is not proposing an increase in fuel usage with this project, a health risk assessment is not necessary and no further risk analysis is required.

#### **Rule 4201 Particulate Matter Concentration**

Section 3.0 requires emissions of dust, fumes, or particulate matter not to exceed 0.1 grain per cubic foot of gas at dry standard conditions.

The emissions from the RAP circuit, aggregate handling or silo filling are not collected and manifolded into a stack. There is no airflow to measure or calculate. Therefore the grain loading limit of this rule cannot apply to those portions of the unit. However, the particulate matter concentration can be calculated from the exhaust gas from the baghouse and is shown below:

Using the current permit's maximum daily throughput of asphalt of 5,391 tons/day.

$$\begin{aligned} \text{Emissions (gr/ft}^3\text{)} &= \frac{(170.3 \text{ lb-PM}_{10}\text{/day} \times 7000 \text{ gr/lb})}{(105,854 \text{ ft}^3\text{/min} \times 60 \text{ min/hr} \times 24 \text{ hr/day})} \\ &= 0.007 \text{ gr/ft}^3 \end{aligned}$$

The calculated emission concentration is well below the required limit of 0.1 gr/dscf. Therefore compliance is expected.

**Rule 4202 Particulate Matter Emission Rate**

This rule prohibits the discharge of PM (total) in excess of the emission limit as calculated by the equation below, for processes with greater than 30 tons per hour throughput:

$$E = 17.31 \times P^{0.16}$$

Where E is the emission rate in lb PM/hour, and P is the process rate in tons per hour.

Process	P (tons/hour)	E (lb/hour)	PE2-PM10 (lb/day)	PE2-PM10 (lb/hour)
Dryer, Aggregate Storage and Aggregate Conveyors	325	43.7	48.4	2.02

Since PM10 is expected to be less than E, the emission rate in lb PM/hour, as shown in the above table, compliance with this rule is expected.

**District Rule 4301 Fuel Burning Equipment**

This rule applies to fuel burning equipment, defined as “any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer.” The proposed dryer is direct fired, so the products of combustion come in direct contact with the material being heated; therefore, the rule does not apply and no further discussion is required.

**Rule 4309 Dryers, Dehydrators, and Ovens**

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) from dryers, dehydrators, and ovens. This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater. Since the dryer being modified in this project has a heat input rating greater than 5.0 MMBtu, this dryer is subject to the requirements of this rule.

Section 5.0 states that all ppmv limits specified in this section are referenced at dry stack gas conditions and adjusted using an oxygen correction factor of 19% by volume.

Section 5.1 requires dehydrators to be fired exclusively on PUC quality natural gas except during a PUC quality natural gas curtailment. The proposed unit is a dryer rather than a dehydrator, so this section does not apply.

Section 5.2 requires that except for dehydrators, NOx and CO emissions shall not exceed the limits specified in the table below on and after the full compliance schedules specified in Sections 7.1 and 7.3, as appropriate. All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 19 percent by volume stack gas oxygen. Emission concentrations shall be corrected to 19 percent oxygen in accordance with Section 5.0.

<b>NO<sub>x</sub> and CO Limits</b>				
Process Description	NO <sub>x</sub> Limit (in ppmv)		CO Limit (in ppmv)	
	Gaseous Fuel Fired	Liquid Fuel Fired	Gaseous Fuel Fired	Liquid Fuel Fired
Asphalt/Concrete Plants	4.3	12.0	42	64
Milk, Cheese, and Dairy Processing < 20 MMBtu/hr	3.5	3.5	42	42
Milk, Cheese, and Dairy Processing ≥ 20 MMBtu/hr	5.3	5.3	42	42
Other processes not described above	4.3	4.3	42	42

The unit being modified in this project is an asphalt dryer with a maximum heat input of 124.5 MMBtu/hr.

For the unit:

- the proposed NO<sub>x</sub> emission factor is 12.0 ppmvd @ 19% O<sub>2</sub> (0.1448 lb/MMBtu), and
- the proposed CO emission factor is 64 ppmvd @ 19% O<sub>2</sub> (0.4702 lb/MMBtu).

Therefore, compliance with this section is expected.

A permit condition listing the emissions limits will be listed on the permit as shown in the DEL section above.

Section 5.3 provides for a limited exemption from the emission limitations of Section 5.2 during well defined and permitted startup and shut down operations. Except as provided in Section 5.3.3, startup and shut down periods may not exceed 1 hour in duration for units not equipped with a NO<sub>x</sub> exhaust control system, or 2 hours for units with a NO<sub>x</sub> exhaust control system. The applicant has not proposed any special startup or shutdown considerations, so this section is not relevant to the application.

Section 5.4.1 states that except for dehydrators, the operator of any unit subject to the applicable emission limits in Sections 4.3.2, or 5.2 shall monitor emissions using one of the techniques specified in Sections 5.4.1.1 or 5.4.1.2.

Section 5.4.1.1 states the first technique as the installation and maintenance of an APCO-approved CEMS for NO<sub>x</sub>, and oxygen that meets the following requirements.

- 40 CFR Part 51, and
- 40 CFR Parts 60.7 and 60.13 (except subsection h), and
- 40 CFR Part 60 Appendix B (Performance Specifications), and
- 40 CFR Part 60 Appendix F (Quality Assurance Procedures), and
- The applicable provisions of District Rule 1080 (Stack Monitoring).
- The APCO shall only approve CEMS that meets the requirements of Sections 5.4.1.1.1 through 5.4.1.1.5 of this rule.

Section 5.4.1.2 states the second technique as the installation and maintenance of an alternate emissions monitoring method that meets the requirements of Sections 5.4.1.2.1 through 5.4.1.2.3 of this rule.

Section 5.4.1.2.1 states that the APCO shall not approve an alternative monitoring system unless it is documented that continued operation within ranges of specified emissions-related performance indicators or operational characteristics provides a reasonable assurance of compliance with applicable emission limits.

Section 5.4.1.2.2 states that the approved alternate emission monitoring system shall monitor operational characteristics necessary to assure compliance with the emission limit. Operational characteristics shall be one or more of the following:

- Periodic NO<sub>x</sub> exhaust emission concentrations,
- Periodic exhaust oxygen concentration,
- Flow rate of reducing agent added to exhaust,
- Catalyst inlet and exhaust temperature,
- Catalyst inlet and exhaust oxygen concentration,
- Periodic flue gas recirculation rate,
- Other surrogate operating parameter(s) that demonstrate compliance with the emission limit.

Since the operation of the unit subject to this rule is very similar to the operation of the units subject to the requirements of District Rule 4306, *Boilers, Steam Generators, and Process Heaters – Phase 3*, the pre-approved alternate monitoring plans in District Policy SSP-1105 will be considered approved alternate monitoring plans for District Rule 4309 compliance.

In order to satisfy the requirements of District Rule 4309, the applicant has proposed to use pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO<sub>x</sub>, CO, and O<sub>2</sub> exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer. The following conditions will be incorporated into the permit in order to ensure compliance with the requirements of the proposed alternate monitoring plan:

- The asphalt batch plant permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month in which asphalt is produced on at least five days or for at least 32 hours, whichever comes first (and in which a source test is not performed), using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 production days of restarting the unit unless monitoring has been performed within the last month. [District Rule 4309]
- If either the NO<sub>x</sub> or CO concentrations corrected to 19% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show

compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4309]

- All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4309]
- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 19% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4309]

Section 5.5.1 states that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the PTO.

Section 5.5.2 states that except for as provided in Section 5.5.3, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

The following condition will be added to the permit to assure compliance with Sections 5.5.1 and 5.5.2.

- {3713} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4309. [District Rule 4309]

Section 5.5.5 states that for emissions monitoring pursuant to Section 5.4.1.2.2.1, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive minute period.

The following condition will be added to the permit to assure compliance with this section.

- All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or

a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4309]

Section 5.5.6 states that for emissions source testing performed pursuant to Section 6.3.1 to determine compliance with an applicable emission limit of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two of the three runs individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the unit, even if the averaged emissions of all three test runs is less than the applicable limit. The following condition will be added to the permit to assure compliance with this section.

- {3715} For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 4309]

Section 6.1 details the record keeping requirements the operator must satisfy to document compliance with the rule. The following conditions will be included on the ATC to ensure compliance:

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 4309]

Section 6.2 specifies the acceptable test methods for monitoring or compliance determinations. The following conditions will be included on the ATC to ensure compliance:

- {3718} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis. [District Rule 4309]
- {3719} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 4309]
- {3720} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 4309]

Section 6.3.2 states that each unit subject to the requirements in Sections 4.3, or 5.2 shall be initially source tested to determine compliance with the applicable emission limits not later than the applicable full compliance schedule specified in Section 7.0. Thereafter, each unit subject to Section 5.2 emission limits shall be source tested at least once every 24 months. Units subject to Section 5.2 and operating less than 50 days per calendar year shall follow the source test frequency prescribed in Section 6.3.3. The following condition will be added to the permit to assure compliance with this section.

- {3714} Source testing to measure NO<sub>x</sub> and CO emissions from this unit when fired on natural gas shall be conducted within 60 days of initial start-up and at least once every 24 months thereafter. [District Rules 2201 and 4309]

Section 6.3.5 states that the APCO shall be notified according to the provisions of Rule 1081 (Source Sampling). The following conditions will be added to the permit to assure compliance with this section.

- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- {3721} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Section 6.3.6 states that emissions source testing shall be conducted with the unit operating either at conditions representative of normal operations or conditions specified in the PTO. The requirements of this section will be satisfied by the condition listed in Sections 5.5.1 and 5.5.2 of this rule evaluation.

Section 6.3.7 states that all test results for NO<sub>x</sub> and CO shall be reported in ppmv, corrected to dry stack conditions and adjusted using the oxygen correction factor. The following condition will be added to the permit to assure compliance with this section:

- {3722} All test results for NO<sub>x</sub> and CO shall be reported in ppmv @ 19% O<sub>2</sub> (or no correction if measured above 19% O<sub>2</sub>), corrected to dry stack conditions. [District Rule 4309]

Section 6.3.8 states that for the purpose of determining compliance with an applicable emission limit, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply.

Section 6.3.9 states that if two of the three runs specified by Section 6.3.8 individually demonstrate emissions above the applicable limit, the test cannot be used to demonstrate compliance for the unit, even if the averaged emissions of all three runs is less than the applicable limit.

The requirements of Sections 6.3.8 and 6.3.9 will be satisfied by the condition listed in Section 5.5.6 of this rule evaluation.

Section 6.4 states that in addition to the provisions of Section 6.3, asphalt/concrete plants shall choose one of the following options for source testing:

- Test the unit using locally mined aggregate in the dryer. If the source test using locally mined aggregate fails, the operator may re-run the source test using aggregate from a different source.
- Test the unit using aggregate from a source different from the source used during normal operations.
- Test the unit using a heat-absorbing material in the dryer, but no aggregate.
- Test the unit with no material in the dryer.

The following permit condition will be listed on the permit as follows:



- Source testing to measure NOx and CO emissions from the asphalt/concrete plant shall be conducted utilizing one of the following options: (a) Test the unit using locally mined aggregate in the dryer. If the source test using locally mined aggregate fails, the operator may re-run the source test using aggregate from a different source. (b) Test the unit using aggregate from a source different from the source used during normal operations. (c) Test the unit using a heat-absorbing material in the dryer, but no aggregate. (d) Test the unit with no material in the dryer. [District Rule 4309]

Section 7.1 describes the general compliance schedule, as summarized in the following table, while Section 7.2 defines the compliance schedule benchmarks of "Authority to Construct" and "Full Compliance". Section 7.3 specifies that the operator of an asphalt/concrete unit subject to the rule must submit an ATC application by December 1, 2008, and demonstrate full compliance by December 1, 2009. The proposed unit is an asphalt dryer subject to the rule. Glen Wells Construction has failed the startup inspection of the previous ATC and was therefore issued a Notice of Violation by the Compliance Program. This project is to rectify the permit and the violation.

Compliance Schedule:

Units to be in Compliance at a Stationary Source	Authority to Construct	Full Compliance
Group 1: 50% or more of the total number of units subject to this rule on 12/15/05	January 1, 2007	December 1, 2007
Group 2: 100% of the total number of units subject to this rule on 12/15/05	January 1, 2008	December 1, 2008

Section 7.4 specifies that a dehydrator subject to the rule must be in full compliance by July 1, 2006. The proposed unit is not a dehydrator, so this section does not apply.

**California Health & Safety Code 42301.6 (School Notice)**

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

**California Environmental Quality Act (CEQA)**

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.

- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

**Greenhouse Gas (GHG) Significance Determination**

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project. The District’s engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions as there is no increase in fuel usage. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

**District CEQA Findings**

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct S-169-3-4 subject to the permit conditions on the attached draft Authority to Construct in Appendix B.

**X. Billing Information**

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-169-3-4	3020-02-H	124.5 MMBtu/hr	\$1030.00

**Appendices**

- A: Current PTO
- B: Draft ATC
- C: Quarterly Net Emissions Change
- D: Ambient Air Quality Air Results
- E: Emission Factor Conversions

**APPENDIX A**  
**Current PTO**

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-169-3-2

EXPIRATION DATE: 04/30/2012

## EQUIPMENT DESCRIPTION:

124.5 MMBTU/HR DIESEL-FIRED BARBER-GREENE CONTINUOUS DRUM-MIX ASPHALT PLANT

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Permittee shall comply with all applicable requirements of the New Source Performance Standards listed in 40 CFR Part 60, Subparts A and I. [District Rule 4001]
4. Particulate matter emissions shall not exceed 0.04 grains/dscf in concentration. [District Rule 4001]
5. All stockpiled sand, gravel aggregate, rock and other materials shall be maintained adequately moist to prevent visible emissions in excess of 20% opacity. [District Rules 2201 and 4001]
6. Facility operation shall not exceed 11 hours/day and 1,705 hours/year. [District Rule 2201]
7. Asphalt production rate shall not exceed 325 tons/hour. [District Rule 2201]
8. Emission rate from the asphalt drum heater shall not exceed any of the following: 0.180 lb-VOC/MMBtu; 0.196 lb-NOx/MMBtu; 0.094 lb-CO/MMBtu; 0.081 lb-PM10/MMBtu; or 0.146 lb-SOx/MMBtu. [District Rule 2201]
9. PM10 emission rate from aggregate storage piles (active and inactive) shall not exceed 4.8 lb/hr. [District Rule 2201]
10. PM10 emission rate from aggregate conveyors shall not exceed 0.6 lb/hr. [District Rule 2201]
11. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081]
12. The District shall be notified immediately of any failure or malfunction of air pollution control equipment, or any process which results in an increase in emissions above the limits of these conditions. [District Rule 2080]
13. Scrubber and water supply pump shall be on before production is initiated and off after production is terminated. [District Rule 2080]
14. Records shall be maintained identifying the date, tons of aggregate used, hourly tons of asphalt produced, fugitive dust suppression activity, and hours of operations per day for a period of 2 years, and shall be made available for District staff inspection upon request. [District Rule 1070]
15. Compliance with NOx, SOx, PM10, CO, and SOx emission limits shall be demonstrated by District witnessed sample collection by independent testing laboratory. [District Rule 1081]

These terms and conditions are part of the Facility-wide Permit to Operate.

**APPENDIX B**  
**Draft ATC**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE: DRAFT**  
**DRAFT**

**PERMIT NO:** S-169-3-4

**LEGAL OWNER OR OPERATOR:** GLEN WELLS CONSTRUCTION CO

**MAILING ADDRESS:** P O BOX 3104  
VISALIA, CA 93278

**LOCATION:** 22400 AVENUE 335  
WOODLAKE, CA 93278

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF A 124.5 MMBTU/HR DIESEL-FIRED BARBER-GREENE CONTINUOUS DRUM-MIX ASPHALT PLANT: RETUNE THE BURNER, LOWER NOX EMISSIONS LIMIT TO 12 PPMV @ 19% O2 (EQUIVALENT TO 0.1448 LB-NOX/MMBTU) AND INCREASE CO EMISSIONS LIMIT TO 64 PPMV @ 19% O2 (EQUIVALENT TO 0.4702 LB-CO/MMBTU) FOR RULE 4309 COMPLIANCE

**CONDITIONS**

1. This Authority to Construct (ATC) cancels and supersedes ATC S-169-3-3. [District Rule 2201]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. Permittee shall comply with all applicable requirements of the New Source Performance Standards listed in 40 CFR Part 60, Subparts A and I. [District Rule 4001]
5. Particulate matter emissions shall not exceed 0.04 grains/dscf in concentration. [District Rule 4001]
6. All stockpiled sand, gravel aggregate, rock and other materials shall be maintained adequately moist to prevent visible emissions in excess of 20% opacity. [District Rules 2201 and 4001]
7. Facility operation shall not exceed 11 hours/day and 1,705 hours/year. [District Rule 2201]
8. Asphalt production rate shall not exceed 325 tons/hour. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DRAFT**

DAVID WARNER, Director of Permit Services

S-169-3-4 Sep 7 2010 2:04PM - GARCIAJ . Joint Inspection NOT Required

9. Emission rate from the asphalt drum heater shall not exceed any of the following: 0.180 lb/VOC/MMBtu; 0.1448 lb-NO<sub>x</sub>/MMBtu (equivalent to 12 ppmvd NO<sub>x</sub> @ 19% O<sub>2</sub>); 0.4702 lb-CO/MMBtu (equivalent to 64 ppmvd CO @ 19% O<sub>2</sub>); 0.081 lb-PM<sub>10</sub>/MMBtu; or 0.146 lb-SO<sub>x</sub>/MMBtu. If measured O<sub>2</sub> concentration is greater than 19%, the corrected NO<sub>x</sub> or CO concentration is equal to the measured NO<sub>x</sub> or CO concentration. [District Rules 2201 and 4309]
10. PM<sub>10</sub> emission rate from aggregate storage piles (active and inactive) shall not exceed 4.8 lb/hr. [District Rule 2201]
11. PM<sub>10</sub> emission rate from aggregate conveyors shall not exceed 0.6 lb/hr. [District Rule 2201]
12. Scrubber and water supply pump shall be on before production is initiated and off after production is terminated. [District Rule 2201]
13. The District shall be notified immediately of any failure or malfunction of air pollution control equipment, or any process which results in an increase in emissions above the limits of these conditions. [District Rules 1100 and 2201]
14. {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
15. Source testing to measure NO<sub>x</sub> and CO emissions from the asphalt/concrete plant shall be conducted utilizing one of the following options: (a) Test the unit using locally mined aggregate in the dryer. If the source test using locally mined aggregate fails, the operator may re-run the source test using aggregate from a different source. (b) Test the unit using aggregate from a source different from the source used during normal operations. (c) Test the unit using a heat-absorbing material in the dryer, but no aggregate. (d) Test the unit with no material in the dryer. [District Rule 4309]
16. {3714} Source testing to measure NO<sub>x</sub> and CO emissions from this unit when fired on natural gas shall be conducted within 60 days of initial start-up and at least once every 24 months thereafter. [District Rules 2201 and 4309]
17. {3713} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4309. [District Rule 4309]
18. {3715} For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 4309]
19. {3718} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis. [District Rule 4309]
20. {3719} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 4309]
21. {3720} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 4309]
22. {3722} All test results for NO<sub>x</sub> and CO shall be reported in ppmv @ 19% O<sub>2</sub> (or no correction if measured above 19% O<sub>2</sub>), corrected to dry stack conditions. [District Rule 4309]
23. Compliance with NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and SO<sub>x</sub> emission limits shall be demonstrated by District witnessed sample collection by independent testing laboratory. [District Rule 1081]
24. {3721} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
25. The asphalt batch plant permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month in which asphalt is produced on at least five days or for at least 32 hours, whichever comes first (and in which a source test is not performed), using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 production days of restarting the unit unless monitoring has been performed within the last month. [District Rule 4309]

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CONDITIONS CONTINUE ON NEXT PAGE

26. {3741} The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rule 4309]
27. {3742} If either the NO<sub>x</sub> or CO concentrations corrected to 19% O<sub>2</sub> (or no correction if measured above 19% O<sub>2</sub>), as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4309]
28. {3743} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4309]
29. {3744} The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 19% O<sub>2</sub> (or no correction if measured above 19% O<sub>2</sub>), (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4309]
30. Records shall be maintained identifying the date, tons of aggregate used, hourly tons of asphalt produced, fugitive dust suppression activity, and hours of operations per day. [District Rule 1070]
31. {3723} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 4309]

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**APPENDIX C**  
**Quarterly Net Emissions Change**

## Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

$QNEC = PE2 - PE1$ , where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned} PE2_{\text{quarterly}} &= PE2_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 19,954 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 4,988.5 \text{ lb CO/qtr} \end{aligned}$$

$$\begin{aligned} PE1_{\text{quarterly}} &= PE1_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 99,811 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 24,952.75 \text{ lb CO/qtr} \end{aligned}$$

<b>Quarterly NEC [QNEC]</b>			
	<b>PE2 (lb/qtr)</b>	<b>PE1 (lb/qtr)</b>	<b>QNEC (lb/qtr)</b>
<b>NO<sub>x</sub></b>	7,684.25	10,401.25	-2,717
<b>SO<sub>x</sub></b>	7,748	7,748	0
<b>PM<sub>10</sub></b>	6,600.25	6,600.25	0
<b>CO</b>	24,952.75	4,988.5	19,964.25
<b>VOC</b>	9,552.25	9,552.25	0

**APPENDIX D**  
**Ambient Air Quality Analysis Results**

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Jesse A. Garcia – Permit Services  
From: Cheryl Lawler – Technical Services  
Date: July 26, 2010  
Facility Name: Glen Wells Construction  
Location: 22400 Avenue 335, Woodlake  
Application #(s): S-169-3-4  
Project #: S-1102179

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## A. RMR SUMMARY

<b>RMR Summary</b>			
<b>Categories</b>	<b>Diesel-Fired Burner (Unit 3-4)</b>	<b>Project Totals</b>	<b>Facility Totals</b>
<b>Prioritization Score</b>	N/A*	N/A	N/A
<b>Acute Hazard Index</b>	N/A	N/A	N/A
<b>Chronic Hazard Index</b>	N/A	N/A	N/A
<b>Maximum Individual Cancer Risk</b>	N/A	N/A	N/A
<b>T-BACT Required?</b>	<b>No</b>		
<b>Special Permit Conditions?</b>	<b>No</b>		

\*A Risk Management Review was not required for this project. Only an Ambient Air Quality Analysis (AAQA) for CO was required. See Page Two of this memo for AAQA results.

## B. RMR REPORT

### I. Project Description

Technical Services received a request on June 2, 2010, to perform an Ambient Air Quality Analysis for a 124.5 MMBtu/hr diesel-fired burner. A Risk Management Review was not required because the only change proposed for this unit is an increase in CO.

## II. Analysis

The following parameters were used for the Ambient Air Quality Analysis:

Analysis Parameters			
Source Type	Point	Closest Receptor (m)	152.4
Stack Height (m)	6.1	Closest Receptor Type	Business
Inside Diameter (m)	0.91	Project Location Type	Rural
Gas Exit Temperature (K)	450	Stack Gas Velocity (m/s)	93.4

Technical Services performed AAQA modeling for the criteria pollutant CO only. Only CO was modeled, because it was the only criteria pollutant with a proposed increase. The increase in the CO emission rate which was used for criteria pollutant modeling was 46.836 lb/hr of CO.

The results from the Criteria Pollutant Modeling are as follows:

### Criteria Pollutant Modeling Results\*

Values are in  $\mu\text{g}/\text{m}^3$

Unit 3-4	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X

\*Results were taken from the attached PSD spreadsheet.

## III. Conclusion

The criteria modeling runs indicate the emissions from the proposed equipment will not cause or significantly contribute to a violation of a State or National AAQS.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

**APPENDIX E**  
**Emission Factor Conversions**

ppm=>btu

	SELECTION #
COAL (ANTHRACITE)	0
COAL (BITUMINOUS)	1
COAL (LIGNITE)	2
OIL (CRUDE, RESIDUAL, OR DISTILLATE)	3
GAS (NATURAL)	4
GAS (PROPANE)	5
GAS (BUTANE)	6
WOOD	7
WOOD BARK	8
MUNICIPAL SOLID WASTE	9

STANDARD O2 CORRECTION FOR EXTERNAL COMBUSTION IS 3%	
Type of fuel (use table above)	3 OIL
O2 correction (i.e., 3%)	19 %
Enter concentrations	
NOx	12 ppmv
CO	64 ppmv
VOC (as methane)	0 ppmv

CALCULATED EQUIVALENT LB/MMBTU VALUES	
NOx	0.1448 LB/MMBTU
CO	0.4702 LB/MMBTU
VOC (as methane)	0.0000 LB/MMBTU

pV = R*T	
pressure (p)	1 atm
universal gas constant (R*)	0.7302 atm-scf/lbmole-oR
temperature (oF)	60 oF
calculated	
molar specific volume (V)	379.5 scf/lbmole
Molecular weights	
NOx	46 lb/lb-mole
CO	28 lb/lb-mole
VOC (as methane)	16 lb/lb-mole

F FACTORS FROM EPA METHOD 19		
COAL (ANTHRACITE)	10100 DSCF/MMBTU	COAL
COAL (BITUMINOUS)	9780 DSCF/MMBTU	COAL
COAL (LIGNITE)	9860 DSCF/MMBTU	COAL
OIL (CRUDE, RESIDUAL, OR DISTILLATE)	9190 DSCF/MMBTU	OIL
GAS (NATURAL)	8710 DSCF/MMBTU	GAS
GAS (PROPANE)	8710 DSCF/MMBTU	GAS
GAS (BUTANE)	8710 DSCF/MMBTU	GAS
WOOD	9240 DSCF/MMBTU	WOOD
WOOD BARK	9600 DSCF/MMBTU	WOOD BARK
MUNICIPAL SOLID WASTE	9570 DSCF/MMBTU	SOLID WASTE
F FACTOR USED IN CALCULATIONS	9190 DSCF/MMBTU	OIL