San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUG 17 2011

Mr. Jerry Frost
Vintage Production California
9000 Ming Avenue, Suite 300
Bakersfield, CA 93311

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-1326
Project # 1112303

Dear Mr. Frost:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project authorizes 3 new 85 MMBtu/hr natural gas-fired steam generators.

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with Certificates of Conformity. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

DW: RE/cm

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUG 17 2011

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-1326
Project # 1112303

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Vintage Production California heavy oil production stationary source in the central Kern County fields, which has been issued a Title V permit. Vintage Production California is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The project authorizes 3 new 85 MMBtu/hr natural gas-fired steam generators.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authorities to Construct # S-1326-405-0 through '-407-0 with Certificates of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

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AUG 17 2011

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-1326
Project # 1112303

Dear Mr. Tollstrup:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project authorizes 3 new 85 MMBtu/hr natural gas-fired steam generators.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authorities to Construct # S-1326-405-0 through '-407-0 with Certificates of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 30-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

DW: RE/cm

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Bakersfield Californian

**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed modification of Vintage Production California for its heavy oil production stationary source heavy oil production stationary source in the central Kern County fields, California. The project authorizes 3 new 85 MMBtu/hr natural gas-fired steam generators.

The District's analysis of the legal and factual basis for this proposed action, project #1112303, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested by the public, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.

San Joaquin Valley Air Pollution Control District
Authorities to Construct
3 new 85 MMBtu/hr natural gas-fired steam generators

Facility Name:	Vintage Production California, LLC	Date:	08/12/11
Mailing Address:	9000 Ming Avenue, Suite 300	Engineer:	Richard Edgehill
	Bakersfield, CA 93311	Lead Engineer:	Richard Karrs
Contact Person:	Jerry Frost and Doug McCormick (Insight Environmental Consultants)		
Telephone:	661 869-8000 (JF), 661 282-2200 (DM)		
Fax:	661 869-8151 (JF)		
E-Mail:	Jerry_Frost@oxy.com and dwmccorm@insenv.com		
Application #(s):	S-1326-405-0 through '-407-0		
Project #:	S1112303		
Deemed Complete:	June 10, 2011		

I. PROPOSAL

Vintage Production California, LLC (VPC) is requesting authorization of three (3) 85 MBtu/hour steam generators equipped with North American model 4231-85-GLE Ultra Low NOx burners (or equivalent), flue gas recirculation (FGR) and oxygen controllers.

The project requires BACT, offsets and is a Federal Major Modification. Therefore public notice is also required.

VPC is a major stationary source with a Title V permit. The project is a Federal Major Modification and therefore it is classified as a Title V Significant Modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. VPC must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC(s) issued with this project.

II. APPLICABLE RULES

District Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
District Rule 2520	Federally Mandated Operating Permit (6/21/01)
District Rule 4001	New Source Performance Standards (4/14/99)
District Rule 4101	Visible Emissions (2/17/05)
District Rule 4102	Nuisance (12/17/92)
District Rule 4201	Particulate Matter Concentration (12/17/92)
District Rule 4301	Fuel Burning Equipment (12/17/92)
District Rule 4304	Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters (10/19/95)
District Rule 4305	Boilers, Steam Generators and Process Heaters – Phase 2 (8/21/03)
District Rule 4306	Boilers, Steam Generators and Process Heaters – Phase 3 (10/16/08)

District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
District Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1 (8/21/03)
District Rule 4801 Sulfur Compounds (12/17/92)
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 equipment will be located at NE Section 23, T28S, R27E in VPC's heavy oil central stationary source. 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.

A location map is included in **Attachment I**.

III. PROCESS DESCRIPTION

In thermally enhanced oil recovery (TEOR) operations, steam generators produce steam for injection into heavy crude oil bearing strata via injection wells to reduce the viscosity of the crude oil, thereby facilitating thermally enhanced oil production.

Proposed Project
Three new steam generators equipped with ultra low NOx burners capable of achieving 7 ppmv NOx @ 3% O_2 and 10 ppmv @3% O_2 CO will be installed. The new steam generators will utilize PUC-quality natural gas with a sulfur content no greater than 1.0 gr S/100scf.

IV. EQUIPMENT LISTING

Post Project Equipment Description:

PTO S-1326-405-0 through '-407-0: 85.0 MMBTU/HR NATURAL GAS -FIRED STEAM GENERATOR WITH NORTH AMERICAN 4231-85 GLE BURNER (OR EQUIVALENT) AND A FLUE GAS RECIRCULATION SYSTEM

As per District policy APR 1035 Flexibility in Equipment Descriptions in ATCs, some flexibility in the final specifications of the equipment is requested and will be allowed as stated in the following ATC conditions:

The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]

The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010]

Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]

No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]

V. EMISSION CONTROL TECHNOLOGY EVALUATION

Emissions from natural gas-fired steam generators include NO_X, CO, VOC, PM_{10}, and SO_X.

Low-NO_X burners reduce NO_X formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO_X burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO_X. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

The use of flue gas re-circulation (FGR) can reduce nitrogen oxides (NO_X) emissions by 60 - 70%. In an FGR system, a portion of the flue gas is re-circulated back to the inlet air. As flue gas is composed mainly of nitrogen and the products of combustion, it is much lower in oxygen than the inlet air and contains virtually no combustible hydrocarbons to burn. Thus, flue gas is practically inert. The addition of an inert mass of gas to the combustion reaction serves to absorb heat without producing heat, thereby lowering the flame temperature. Since thermal NO_X is formed by high flame temperatures, the lower flame temperatures produced by FGR serve to reduce thermal NO_X.

Manufacturer's information on the low NOx burner is included in **Attachment II**.

VII. GENERAL CALCULATIONS

A. Assumptions

- The maximum operating schedule is 24 hours per day (per applicant)
- Steam generators are fired on natural gas with a sulfur content no greater than 1.0 gr S/100 scf.
- Maximum Heat Input: 85.0 MMBtu/hr (per applicant)
- EPA F-factor for natural gas is 8,578 dscf/MMBtu (40 CFR 60, Appendix B)
- Molar Specific Volume of a gas @ 60 °F is 379.5 ft^3/lb-mol
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)

B. Emission Factors

Post-Project Emission Factors (EF2)

S-1327-405-0 through '-407-0:

Pollutant	Post-Project Emission Factors (EF2)			Source
NO_X	8.0 lb-NO_X/MMscf	0.008 lb-NO_X/MMBtu	7 ppmvd NO_X (@ 3%O_2)	Rule 4320 limit
SO_X	2.85 SO2/day	0.00285 lb SO2/MMBtu		District Policy APR 1720
PM10	3.0 lb-PM10/MMscf	0.003 lb-PM10/MMBtu		Proposed**
CO	7.4 lb-CO/MMscf	0.0074 lb-CO/MMBtu	10 ppmv CO* @3% O2	Proposed
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmv VOC* @3% O2	AP-42 (07/98) Table 1.4-2

CO: [10 ft^3/10^6 ft^3 @ 3% O2] x [8578 dscf@ 0% O_2/MMBtu] x [20.9/(20.9 – 3)] ft^3 @ 3% O2/ft^3 @ 0% O2] x 28 lb CO/379 ft^3
= 0.0074 lb/MMBtu

VOC: [13 ft^3/10^6 ft^3 @ 3% O2] x [8578 dscf*@ 0% O_2/MMBtu] x [20.9/(20.9 – 3)] ft^3 @ 3% O2/ft^3 @ 0% O2] x 16 lb CO/379 ft^3
= 0.0055 lb/MMBtu

** based on startup emissions source testing of Kern Front Units S-1326-385 and '-390

C. Calculations

1. Pre-Project Potential to Emit (PE1)

S-1326-405-0 through '-407-0

Since these are a new emissions unit, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

The potential to emit for each steam generator is calculated as follows, and summarized in the table below:

S-1326-405 through '-407 (each)

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO_X	0.008	85	24	16.3
SO_X	0.00285	85	24	5.8
PM_{10}	0.0030	85	24	6.1
CO	0.007	85	24	15.1
VOC	0.0055	85	24	11.2

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO_X	0.008	85	8,760	5,957
SO_X	0.00285	85	8,760	2,122
PM_{10}	0.0030	85	8,760	2,234
CO	0.007	85	8,760	5,510
VOC	0.0055	85	8,760	4,095

Post project emissions for SSIPE calculation

	Annual Emissions (lb/year)				
	NO_X	SO_X	PM_{10}	CO	VOC
3 proposed SGs	3 x 5957 = 17,871	3 x 2122 = 6,366	3 x 2234 = 6,702	3 x 5,510 = 16,530	3 x 4,095 = 12,285
Total	17,871	6,366	6,702	16,530	12,285

Greenhouse Gas Emissions (District Policy APR 2015)

CO2 53.06 kg/MMBtu (HHV) natural gas (116.7 lb/MMBtu)

The net increase in heat input rating is calculated in the table below:

Permit Unit	MMBtu/hr
'-404 through '-406	3 x 85
Total	**255**

Hourly Emissions

CO2 Emissions = 3 x 85 MMBtu/hr x 116.7 lb/MMBtu = 29,759 lb-CO2e/hour

29,759 lb-CO2e/hour x 8760 hr/year ÷ 2,000 lb/ton = 130,342 tons-CO2e/year

130,342 short tons-CO2e/year x 0.9072 metric tons/short ton = **118,246 metric tons**

Emissions profiles are included in **Attachment III**.

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. The facility has no ERC s for onsite reductions.

Applicant has provided a calculation of SSPE 1 which is listed in the table below (**Attachment IV**).

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
Pre-Project SSPE (SSPE1)	83,464	30,237	28,885	192,524	1,007,913

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)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE1	83,464	30,237	28,885	192,524	1,007,913
SSIPE	17,871	6,366	6,702	16,530	12,285
SSPE2	101,335	36,603	35,587	209,054	1,020,198

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_X	SO_X	PM_{10}	CO	VOC
Pre-Project SSPE (SSPE1)	83,464	30,237	28,885	192,524	1,007,913
Post Project SSPE (SSPE2)	101,335	36,603	35,587	209,054	1,020,198
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	Yes	Yes

This source is an existing Major Source for NO_X and VOC emissions and will remain a Major Source for these air contaminants. The source is becoming a Major Source for CO emissions with this project.

6. Baseline Emissions (BE)

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.

As shown in Section VII.C.5 above, the facility is not a Major Source for SOx, and PM10. Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1) for these air contaminants.

S-1326-405 through '-407
Since these are new emissions units, BE = PE1 = 0 for all criteria pollutants.

7. SB 288 Major Modification

SB 288 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 SOx and PM10 emissions; therefore, the project does not constitute a SB 288 Major Modification for SOx and PM10.

As discussed in Section VII.C.5 above, the facility is an existing Major Source for NOx and VOC; however, the project by itself would need to be a significant increase in order to trigger a Major Modification. As the emissions units within this project do not have a total

potential to emit for NOx and VOC which is greater than SB 288 Major Modification thresholds (see table below), the project does not result in a SB 288 Major Modification.

SB 288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
NO_x	17,871	50,000	No
SO_x	Not applicable	80,000	No
PM_{10}	Not applicable	30,000	No
VOC	12,285	50,000	No

8. Federal Major Modification

SOx and PM10
As discussed in Section VII.C.5 above, the facility is not a Major Source for SOx and PM10 emissions; therefore, the project does not constitute a Federal Major Modification for SOx and PM10.

NOx and VOCs
District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not Federal Major Modifications if they meet the criteria of the "Less-Than-Significant Emissions Increase" exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a Federal Major Modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a Federal Major Modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Pollutant	Threshold (lb/year)
VOC	0
NOx	0
PM10	30,000
SOx	80,000

The Net Emissions Increases (NEIs) for purposes of determination of a "Less-Than-Significant Emissions Increase" exclusion will be calculated below to determine if this project qualifies for such an exclusion.

Net Emission Increase for New Unit (NEI)

Per 40 CFR 51.165 (a)(2)(ii)(D) for new emissions unit in this project,

NEI = PE2 - BAE

BAE = 0 for the new emissions unit; therefore,

NEI = PE2

Units S-1326-405 through 407 are new units, and baseline actual emissions are equal to zero, and therefore, pursuant to 40 CFR 51.165 (a)(2)(ii)(D), the Net Emissions Increases for NOx and VOCs are equal to the post-project potential to emit which exceeds the significance thresholds for NOx and VOC, 0 lb/yr, listed in the above table. Therefore the project is a Federal Major Modification.

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. The QNEC for the new emissions unit was calculated for each pollutant by dividing annual emissions by 4 quarters/year.

S-1326-405 through '-407 (each)

Pollutant	QNEC For each steam generator			
	Annual emissions (lb/year)	divided by	4 quarters/yr =	Quarterly emissions (lb/qtr)
NO_X	5,957	/	4 qtr/year	**1489**
SOx	2,122	/	4	**531**
PM_{10}	2,234	/	4	**559**
CO	5,510	/	4	**1378**
VOC	4,095	/	4	**1024**

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.

a. New emissions units – PE > 2 lb/day

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install three new 85 MMBtu/hr steam generators each with a PE greater than 2 lb/day for NO_X, Sox, PM_{10}, CO, and VOC. BACT is triggered for NO_X, PM_{10}, CO, and VOC.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project; therefore BACT is not triggered.

d. Major Modification

As discussed in Section VII.C.7 above, this project is a Major Modification for NOx and VOCs; therefore BACT is triggered for these air contaminants.

2. BACT Guideline

Please note that BACT Guideline 1.2.1 [Steam Generator ($\geq$ 5 MMBtu/hr, Oilfield] has been rescinded. The NO_X emission limit requirement of District Rule 4320 is lower than the Achieved-in-Practice requirement of BACT Guideline 1.2.1 (14 ppmv @ 3% O2);

therefore a project specific BACT analysis will be performed to determine BACT for this project. More details regarding this are provided in **Attachment V**.

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see **Attachment V**), BACT has been satisfied with the following:

NO_X: 7 ppmvd @ 3% O_2
SO_X: Natural gas, LPG and waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.
PM_{10}: Natural gas, LPG and waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.
CO: 10 ppmvd @ 3% O_2
VOC: Gaseous fuel

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Post Project SSPE (SSPE2)	101,335	36,603	35,587	209,054	1,020,198
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets calculations required?	Yes	No	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_X, PM_{10}, CO, and VOC emissions; therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for NOX is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = ($\sum$[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

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)

The facility is proposing to install three new emissions units; therefore Baseline Emissions are equal to zero. There are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE]) x DOR

NOx:

Unit	PE2 – BE (lb/yr)
'-405 through '-407	3 x 5957 = 17,871

The quarterly emissions for each unit at DOR = 1.0:1 is listed below:

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
NOx	1,489	1,489	1,489	1,489

The project is a Federal Major Modification for NOx. Therefore the NOx ERCs are required at a DOR = 1.5

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
NOx	2,233	2,233	2,233	2,233

For the three steam generators (reserved in PAS):

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
NOx	6701	6701	6701	6701

The applicant has stated that the facility plans to use ERC certificate S-3523-2 to offset the increases in NOx emissions associated with this project. ERC certificate S-3523-2 has available quarterly NOx credits as follows:

Certificate	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #S-3523-2	35,506	36,242	36,981	36,979

PM10:

Unit	PE2 – BE (lb/yr)
'-405 through '-407	2234 x 3 = 6702

The quarterly emissions for each unit at DOR = 1.0:1 (2,234/4) is listed below:

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
PM10	559	559	559	559

The applicant has stated that the facility plans to use ERC certificates S-3061-5 to offset the increases in PM10 emissions associated with this project. PM10 may be offset using SOx at an interpollutant offset ratio of 1.0 tons SOx/ton PM10 (District Draft Policy APR 14XX).

ERC S-3061-5 is applied at DOR = 1.3:1 as the site of the reduction is Stockdale Oil and Gas (Section 15, T29S, R29E) which is within 15 miles of the location of the proposed steam generators.

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
PM10	726	726	726	726

For the three steam generators

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
PM10	2178	2178	2178	2178

ERC certificates S-3061-5 has available quarterly SOx credits as follows:

Certificate	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
#S-3061-5	3044	1929	2429	2529

District Rule 2201 Section 4.13.7 states that ERC generated during the first and fourth quarters can be used to offset emissions during any period of the year. Therefore 1st Quarter PM10 (SOx) credits can be used to make up the deficiency in ERCs (2178 lb/qtr – 1929 lb/qtr) during the 2nd Quarter.

Reserved in PAS

Certificate	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
#S-3061-5	2178 + 249 = 2427	1929	**2178**	2178

VOCs:

Unit	PE2 – BE (lb/yr)
'-405 through '-407	3 x 4,095 = 12,285

The quarterly emissions for each unit at DOR = 1.0:1 (4,095/4) is listed below:

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
VOC	1024	1024	1024	1024

The project is a Federal Major Modification for VOC. Therefore the NOx ERCs are required at a DOR = 1.5

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
VOC	1,536	1,536	1,536	1,536

For the three steam generators (reserved in PAS)

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
VOC	4,608	4,608	4,608	4,608

The applicant has stated that the facility plans to use ERC certificate S-3065-1 to offset the increases in VOC emissions associated with this project. ERC certificate S-3065-1 has available quarterly VOC credits as follows:

Certificate	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #S-3523-2	35,506	36,242	36,981	36,979

The following offset conditions are included on the ATCs:

Prior to operating equipment under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 2233 lb/quarter; PM10: 726 lb/quarter, and VOC: 1536 lb/qtr. Offsets include the applicable offset ratio specified in Section 4.8 of Rule 2201 (as amended 4/21/11). PM10 may be offset using SOx at an interpollutant offset ratio of 1.0 tons SOx/ton PM10 . [District Rule 2201] Y

ERC Certificate Numbers S-3523-2, S-3065-1, S-3061-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Y

CO:

Unit	PE2 – BE (lb/yr)
'-405 through '-407	3 x 5,510 = 16,530

Notwithstanding the above, Section 4.6.1 of Rule 2201 states that emissions offsets are not required for increases in carbon monoxide in attainment areas provided the applicant demonstrates to the satisfaction of the APCO that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards. The District performed an Ambient Air Quality Analysis (discussed later) and determined that this project will not result in or contribute to a violation of an Ambient Air Quality Standard for CO (see **Attachment VI**). Therefore, CO offsets are not required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications

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.

As demonstrated in VII.C.7, this project is a Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is required.

b. 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.

c. Offset Threshold

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	83,464	101,335	20,000 lb/year	No
SO_X	30,327	36,603	54,750 lb/year	No
PM_{10}	28,885	35,587	29,200 lb/year	No
CO	192,524	209,054	200,000 lb/year	Yes
VOC	1,007,913	1,020,198	20,000 lb/year	No

As detailed above, the CO threshold was surpassed with this project; therefore public noticing is required for offset threshold purposes.

d. 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:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	83,464	101,335	17,871	20,000 lb/year	No
SO_x	30,237	36,603	6,366	20,000 lb/year	No
PM_{10}	28,885	35,587	6,702	20,000 lb/year	No
CO	192,524	209,054	16,530	20,000 lb/year	No
VOC	1,007,913	1,020,198	12,285	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project as the project is a Federal Major Modification. 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 DELs for the unit is based on the use of natural gas as a fuel, the rate heat input of the steam generator, and the emission factors as shown:

Proposed Rule 2201 (DEL) Conditions:

S-1326-405 through '-407

The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Y

Emission rates shall not exceed: PM10: 0.003 lb/MMBtu, SOx (as SO2): 0.00285 lb/MMBtu, VOC: 0.0055 lb/MMBtu, NOx (as NO2): 7 ppmvd NOx @ 3% O2, or CO: 10 ppmv @ 3% O2. [District Rules 2201, 4305 and 4306] Y

E. Compliance Assurance

1. Source Testing

NOx and CO
This unit is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3, and District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr* . Source testing requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rules 4305, 4306, and 4320 of this evaluation.

2. Monitoring

Sulfur Monitoring for Rule 4320 Compliance
The following conditions will be included on the ATCs for the steam generators which are authorized to combust natural/produced gas:

Permittee shall test annually the sulfur content of the fuel gas combusted in steam generator using ASTM method D1072, D3031, D4084, or D3246 and make test results readily available for District inspection. [District Rules 2520, 9.3.2 and 4320] Y

If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201, 4305, 4306, and 4320] Y

NOx and CO

As required by *District Rule 4305, Boilers, Steam Generators and Process Heaters, Phase 2, District Rule 4306, Boilers, Steam Generators and Process Heaters, Phase 3, and District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to monitoring requirements. Monitoring requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rules 4305, 4306, and 4320 of this evaluation.

3. Recordkeeping

As required by *District Rule 4305, Boilers, Steam Generators and Process Heaters, Phase 2, District Rule 4306, Boilers, Steam Generators and Process Heaters, Phase 3, and District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, *District Rules 4305, 4306, and 4320* of this evaluation.

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

{2983} 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, 4305, 4306, and 4320] Y

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14 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. Technical Services Division performed modeling for criteria pollutants CO, NOx, SOx and PM10. The results from the Criteria Modeling are as follows:

Criteria Pollutant Modeling Results*
Values are in $\mu g/m^3$

Three NG Steam Generators	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[2]	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[1]	Pass[1]
$PM_{2.5}$	X	X	X	Pass[3]	Pass[3]

*Results were taken from the attached PSD spreadsheet.
[1]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).
[2]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.
[3]For this case as per District procedure, minor $PM_{2.5}$ sources are modeled only for primary $PM_{2.5}$ concentrations, and these concentrations are compared to the 24-hour SIL of 1.2 ug/m^3 and the annual SIL of 0.3 ug/m^3.

As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, PM10, or SO_X. Refer to **Attachment VI** of this document for the full AAQA report from Technical Services.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a and VIII-Rule 2201-C.1.b, this facility is a new major source and this project does constitute a Title I modification, therefore this requirement is applicable. Included in **Attachment VII** is VPC's Statewide Compliance Certification.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install 3 new 85 MMBtu/hr steam generators.

Since the new steam generators will be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

The project is SB 288 Major Modification and therefore is also a Title V Significant Modification. As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Included in **Attachment VII** is VPC's Title V Compliance Certification form. Continued compliance with this rule is expected.

Rule 4001 New Source Performance Standards

40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction).

S-1326-405 through '-407
The subject steam generators have a rating of 85 MMBtu/hr and are fired on natural gas. Subpart Dc has no standards for gas-fired steam generators. Therefore the subject steam generators are not affected facilities and subpart Dc does not apply.

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). A condition will be placed on the ATCs to ensure compliance with the opacity limit.

Therefore, compliance with the requirements of this rule is expected.

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 Analysis

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.

A HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (**Attachment VI**), the total facility prioritization score including this project was less than or equal to one.

Therefore, no future analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected. However, the following special condition is required on the ATCs:

The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

Therefore, compliance with the requirements of this rule is expected.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor: 0.003 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 3%

Excess Air Correction to F Factor = $\frac{20.9}{(20.9-3)} = 1.17$

$$GL = \left(\frac{0.003\ lb-PM}{MMBtu} \times \frac{7{,}000\ grain}{lb-PM} \right) / \left(\frac{8{,}578\ ft^3}{MMBtu} \times 1.17 \right)$$

$$GL = 0.0021\ grain/dscf < 0.1\ grain/dscf$$

Therefore, continued compliance with the requirements of this rule is expected.

Rule 4301 Fuel Burning Equipment

Rule 4301 limits air contaminant emissions from fuel burning equipment as defined in the rule. Section 3.1 defines fuel burning equipment 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".

Section 5.0 gives the requirements of the rule.

A person shall not discharge into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12% of carbon dioxide at dry standard conditions.

A person shall not build, erect, install or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one or more of the following rates:

- 200 pound per hour of sulfur compounds, calculated as sulfur dioxide (SO_2)
- 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO_2)

- Ten pounds per hour of combustion contaminants as defined in Rule 1020 and derived from the fuel.

District Rule 4301 Limits			
Unit	**NO_2**	**Total PM**	**SO_2**
S-1326-404 through '-406	85 x 0.008 = 0.68	85 x 0.003= 0.26	85 x 0.00285 = 0.24
Rule Limit (lb/hr)	140	10	200

The particulate emissions from the steam generators will not exceed 0.1 gr/dscf at 12% CO2 or 10 lb/hr. Further, the emissions of SOx and NOx will not exceed 200 lb/hr or 140 lb/hr, respectively.

Therefore, compliance with the requirements of this rule is expected.

District Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2

The units are natural gas-fired with a maximum heat input of 85 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4305, the unit is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2.*

In addition, the unit is also subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3.*

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4305.

District Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3

The units are natural gas-fired with a maximum heat input of 85 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4306, the unit is subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3.*

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4306 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4306.

Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr

Section 5.0 Requirements

Section 5.1 of the rule requires compliance with the NOx and CO emissions limits listed in Table 1 of Section 5.2 or payment of an annual emissions fee to the District as specified in Section 5.3 and compliance with the control requirements specified in Section 5.4; or as stated in Section 5.1.3, comply with the applicable Low-use Unit requirements of Section 5.5.

Section 5.2 NOx and CO Emission Limits

C. Oilfield Steam Generators

VI. Rule 4320 Emissions Limits				
Category	Operated on gaseous fuel		Operated on liquid fuel	
	NO_X Limit	CO Limit	NO_X Limit	CO Limit
1. Units with a total rated heat input >20.0 MMBtu/hr	Standard Schedule 7 ppmv or 0.008 lb/MMBtu; or	400 ppmv @ 3% O2	40 ppmv or 0.052 lb/MMBtu	400 ppmv @ 3% O2
	Staged Enhanced Schedule Initial limit: 9 ppmv @ 3% O2, 0.011 lb/MMBtu			
	Final limit: 5 ppmv @ 3% O2, 0.0062 lb/MMBtu			

- the proposed NO_x emission factor is 7 ppmvd @ 3% O_2 (0.0108 lb/MMBtu), and
- the proposed CO emission factor for new and existing steam generators is 10 ppmvd @ 3% O_2 (0.0074 lb/MMBtu).

Therefore, compliance with Section 5.1 of District Rule 4320 is expected.

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

Section 5.3 Annual Fee Calculation

Applicant has proposed to meet the emissions limits requirements of Section 5.1 and therefore this section is not applicable.

Section 5.4 Particulate Matter Control Requirements

Section 5.4 of the rule requires one of four options for control of particulate matter: 1) combustion of PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases, 2) limit fuel sulfur content to no more than five (5) grains

of total sulfur per one hundred (100) standard cubic, 3) install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O2 or 4) refinery units, which require modification of refinery equipment to reduce sulfur emissions, shall be in compliance with the applicable requirement in Section 5.4.1 no later than July 1, 2013.

Units S-1326-405 through '-407 have a sulfur emission limit of 0.00285 lb SO2/MMBtu (1.0 gr S/100scf). Therefore all of the units are in compliance with the SOx/PM10 requirements of Section 5.4.1.2 of the rule which states the following:

5.4.1.2 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet

Section 5.5 Low Use

Section 5.5 requires that units limited to less than or equal to 1.8 billion Btu per calendar year heat input pursuant to a District Permit to Operate Tune the unit at least twice per calendar year, or if the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year; this unit may be test fired to verify availability of the unit for its intended use, but once the test firing is completed the unit shall be shutdown; or operate the unit in a manner that maintains exhaust oxygen concentrations at less than or equal to 3.00 percent by volume on a dry basis.

The subject steam generators are not low use units and therefore the requirements of Section 5.5 do not apply.

Section 5.6, Startup and Shutdown Provisions

Applicable emissions limits are not required during startup and shutdown provided the duration of each start-up or each shutdown shall not exceed two hours, the emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown or operator has submitted an application for a Permit to Operate condition to allow more than two hours for each start-up or each shutdown provided the operator meets all of the conditions specified in Sections 5.6.3.1 through 5.6.3.3. VPC has not requested that startup and shutdown provisions be added to the ATCs. Therefore this section is not applicable.

Section 5.7, Monitoring Provisions

Section 5.7 requires either use of a APCO approved Continuous Emissions Monitoring System (CEMS) for NOx, CO, and oxygen, or implementation of an APCO-approved Alternate Monitoring System consisting of:

5.7.1.1 Periodic NOx and CO exhaust emission concentrations,
5.7.1.2 Periodic exhaust oxygen concentration,
5.7.1.3 Flow rate of reducing agent added to exhaust,

5.7.1.4 Catalyst inlet and exhaust temperature,
5.7.1.5 Catalyst inlet and exhaust oxygen concentration,
5.7.1.6 Periodic flue gas recirculation rate, or
5.7.1.7 Other operational characteristics.

In order to satisfy the requirements of District Rule 4320, the applicant has proposed to use pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO_X, CO, and O_2 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 permittee shall monitor and record the stack concentration of NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Y

If either the NOx or CO concentrations corrected to 3% O2, 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 Rules 4305, 4306 and 4320] Y

All NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Y

The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (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 Rules 4305, 4306 and 4320] Y

5.7.6 Monitoring SOx Emissions

Section 5.7.6.1 Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permit To Operate. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

Section 5.7.6.2 Operators complying with Section 5.4.1.3 by installing and operating a control device with 95% SOx reduction shall propose the key system operating parameters and frequency of the monitoring and recording. The monitoring option proposed shall be submitted for approval by the APCO.

Section 5.7.6.3 Operators complying with Section 5.4.1.3 shall perform an annual source test unless a more frequent sampling and reporting period is included in the Permit To Operate. Source tests shall be performed in accordance with the test methods in Section 6.2.

Sulfur Monitoring
The following condition will be included on the ATCs:

Permittee shall test annually the sulfur content of the fuel gas combusted in steam generator using ASTM method D1072, D3031, D4084, or D3246 and make test results readily available for District inspection. [District Rules 2520, 9.3.2 and 4320] Y

Section 5.8, Compliance Determination

Section 5.8.1 requires that the operator of any unit shall have the option of complying with either the applicable heat input (lb/MMBtu) emission limits or the concentration (ppmv) emission limits specified in Section 5.2. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling) as stated in the following ATC condition:

{2976} The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]Y

Section 5.8.2 requires that all emissions measurements be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise 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.

{2972} 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 4306. [District Rules 4305, 4306, and 4320] Y

Section 5.8.3 Continuous Emissions Monitoring System (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits shall constitute a violation. The steam generators are not equipped with CEMs and therefore this section is not applicable.

Section 5.8.4 For emissions monitoring pursuant to Sections 5.7.1, and 6.3.1 using a portable NOx analyzer as part of an APCO approved Alternate Emissions Monitoring System, 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 readings evenly spaced out over the 15-consecutive-minute period.

All NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Y

Section 5.8.5 For emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, 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.

{2980} 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 Rules 4305, 4306, and 4320]Y

Section 6.1 Recordkeeping

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO and EPA upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

A permit condition will be listed on the permit as follows:

{2983} 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, 4305, 4306, and 4320]Y

Section 6.1.1 requires that a unit operated under the exemption of Section 4.2 shall shall monitor and record, for each unit, the cumulative annual hours of operation. The units are not Section 4.2 exempt and therefore these records are not required.

Section 6.1.2 requires the operator of any unit that is subject to the requirements of Section 5.5 shall record the amount of fuel use at least on a monthly basis for each unit. On and after the applicable compliance schedule specified in Section 7.0, in the event that such unit exceeds the applicable annual heat input limit specified in Section 5.5, the unit shall be brought into full compliance with this rule as specified in Section 5.2 Table 1. The units are not low use and therefore these records are not necessary.

Section 6.1.3 The operator of any unit subject to Section 5.5.1 or Section 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics of the unit have been performed. The units are not low use and therefore this section is not applicable.

Section 6.1.4 The operator performing start-up or shutdown of a unit shall keep records of the duration of start-up or shutdown. Startup and shutdown provisions are not included on the ATCs. Therefore this section is not applicable.

Section 6.1.5 The operator of any unit firing on liquid fuel during a PUC-quality natural gas curtailment period pursuant to Section 5.4.2 shall record the sulfur content of the fuel,

amount of fuel used, and duration of the natural gas curtailment period. The units are not authorized to combust liquid fuel. Therefore this section is not applicable.

Section 6.2, Test Methods

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
NO_X	ppmv	EPA Method 7E or ARB Method 100
NO_X	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O_2	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2
Stack Gas Moisture Content	%	EPA Method 4
Oxides of sulfur		EPA Method 6C, EPA Method 8, or ARB Method 100
Total Sulfur as Hydrogen Sulfide (H_2S) Content		EPA Method 11 or EPA Method 15, as appropriate.
Sulfur Content of Liquid Fuel		ASTM D 6920-03 or ASTM D 5453-99
PM10		CARB Method 5, EPA Method 5 (front half), EPA Method 201A in combination with EPA Method 202, or any combination of these methods

The following test method condition is included on the ATCs:

The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) -ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 1081, 4305, 4306, 4320, and 4351] Y

Section 6.2.8.2. The SOx emission control system efficiency shall be determined using the following:

$$\% \text{ Control Efficiency} = [(C_{SO2,\ inlet} - C_{SO2,\ outlet}) / C_{SO2,\ inlet}] \times 100$$

where:
$C_{SO2,\ inlet}$ = concentration of SOx (expressed as SO_2) at the inlet side of the SOx emission control system, in lb/dscf

$C_{SO2, outlet}$ = concentration of SOx (expressed as SO_2) at the outlet side of the SOx emission control system, in lb/dscf

The units are not equipped with a SO2 scrubber. Therefore this section is not applicable.

Section 6.3 Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.2 not less than once every 12 months (no more than 30 days before or after the required annual source test date). Upon demonstrating compliance on two consecutive compliance source tests, the following source test may be deferred for up to thirty-six months.

Section 6.3.1.1 Units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.5.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Section 5.2.

Section 6.3.1.2 Tune-ups required by Sections 5.5.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored. Applicant has proposed to monitor the emissions of NOx and CO Alternate Monitoring Scheme "A" and the units are not subject to Section 5.5.1, therefore tuning is not required.

Section 6.3.1.3 If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits specified in Section 5.2, the source testing frequency shall revert to at least once every 12 months.

The following conditions are included on the ATC:

Source testing to measure NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Y

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. Unless otherwise 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 4320. [District Rules 4305, 4306 and 4320] Y

The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Y

The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Y

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] Y

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 Rules 4305, 5.5.5, 4306, 5.5.5, and 4320] Y

Sections 6.3.2.1 through 6.3.2.7 address the requirements of group testing which is not applicable for this project.

Section 6.4, Emission Control Plan (ECP)

Section 6.4.1 requires that the operator of any unit shall submit to the APCO for approval an Emissions Control Plan according to the compliance schedule in Section 7.0 of District Rule 4320.

The proposed unit will be in compliance with the emissions limits listed in Table 1, Section 5.1 of this rule and with periodic monitoring and source testing requirements. Therefore, this current application for the new proposed unit satisfies the requirements of the Emission Control Plan, as listed in Section 6.4 of District Rule 4320. No further discussion is required.

Section 7.0, Compliance Schedule

Section 7.0 indicates that an operator with multiple units at a stationary source shall comply with this rule in accordance with the schedule specified in Table 1, Section 5.2 of District Rule 4320.

The units will be in compliance with the emissions limits listed in Table 1, Section 5.2 of this rule, and periodic monitoring and source testing as required by District Rule 4320. Therefore, requirements of the compliance schedule, as listed in Section 7.1 of District Rule 4306, are satisfied. No further discussion is required.

Conclusion

Conditions are included on the ATCs in order to ensure compliance with each section of this rule, see attached draft permit(s). Therefore, compliance with District Rule 4320 requirements is expected.

District Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1

This rule applies to boilers, steam generators, and process heaters at NO_x Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. If applicable, the emission limits, monitoring provisions, and testing requirements of this rule are satisfied when the unit is operated in compliance with Rule 4320. Therefore, compliance with this rule is expected.

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation and the emission factors presented in Section VII, the sulfur compound emissions are calculated as follows:

Volume $SO_2 = \frac{nRT}{P}$

With:

N = moles SO_2
T (Standard Temperature) = 60°F = 520°R
P (Standard Pressure) = 14.7 psi
R (Universal Gas Constant) = $\frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot °R}$

$$\frac{0.00285\ lb-SOx}{MMBtu} \times \frac{MMBtu}{8{,}578\,dscf} \times \frac{1\,lb \cdot mol}{64\,lb} \times \frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot °R} \times \frac{520°R}{14.7\,psi} \times \frac{1{,}000{,}000 \cdot parts}{million} = 2.0\,\frac{parts}{million}$$

$SulfurConcentration = 2.0\,\frac{parts}{million}$ < 2,000 ppmv (or 0.2%)

Therefore, compliance with the requirements of this rule is expected.

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; and
- 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.

Project specific impacts on global climate change were evaluated consistent with the adopted District policy – *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The District's engineering evaluation (this document – **Attachment VIII)** demonstrates that the project includes Best Performance Standards (BPS) for each class and category of greenhouse gas emissions unit. 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)).

VII. RECOMMENDATION

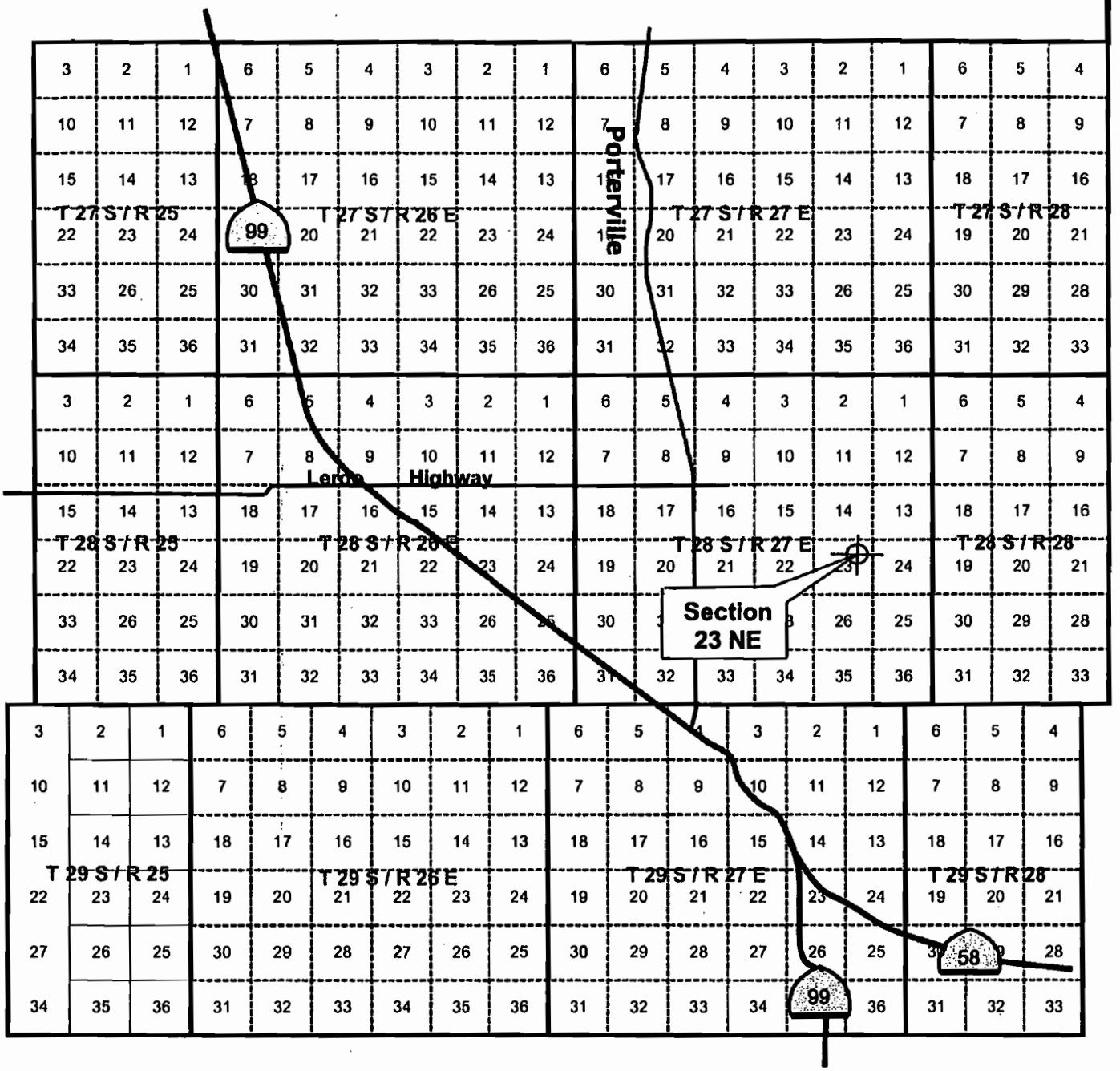
Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authorities to Construct S-1326-405-0 through '-407-0 subject to the permit conditions on the attached draft Authorities to Construct in **Attachment IX**.

VIII. BILLING INFORMATION

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1326-405 through '-407	3020-02-H	85 MMBtu/hr	$1030.00

Attachments
I: Location Map
II: Manufacturer's Information on Low NOx burner
III: Emissions Profiles
IV: SSPE1 Calculation
V: BACT Analysis
VI: HRA and AAQA Analysis
VII: Title V and Statewide Compliance Certification
VIII: Best Performance Standard
IX: Draft ATCs

ATTACHMENT I
Location Map



- N -	**OXY U. S. A. INC.**
	SECTION 23 PRODUCTION OPERATION
	NE 23, T28S, R27E

Prepared by:

Insight Environmental Consultants

May 2008

ATTACHMENT II
Manufacturer's Information on Low NOx Burner

Quotation 37470.2

August 1, 2006

To: Mr. Fred Luffey
Occidential Exploration
9522 Oilfield Rd.
Bakersfield, CA

Ph: 661-399-9860
Fax:
Em: Frederick_luffey@oxy.com

Subject: ***Ultra Low NOx Magna Flame Model 4231-85-GLE Combustion System for mounting on a 70,000 #/hr Steam Generator***

From: Don Hendricks
Ph; 888-209-2751
Fax: 888-209-2751

Dear Fred,

We are pleased to quote you our 85 MM Btu/hr Ultra Low NOx Magna Flame GLE Combustion System. The system includes, a Model 4231-85-GLE Burner, 8379-GLE controller, scanners, and Combustion Air metering components. Also presented below is ancillary equipment that we are offering such as a PUC fuel gas train, and high efficiency combustion air blower.

PRICE & DELIVERY

The price for one Ultra Low NOx Magna Flame GLE Combustion System complete with Model 4231-85-GLE Burner, 8379-GLE controller, UV scanners and Combustion Air Metering components including flow transmitter and temperature compensation T/C but less metering duct run is:

Total Price for (1) Model 4231-85- GLE Combustion System .....$
w/ Burner, Controller, Scanners, Air Meter Components with FOB Cleveland, OH
Transmitter,

Optional Ancillary Equipment (Prices FOB Cleveland, OH):
Pre-assembled PUC Gas Control Train (Including Pilot Train) .. .$

Pre-assembled PUC Gas Safety Shutoff Train.....$

150 HP Hi-Efficiency Combustion Air Blower with sleeve .....$

Note: The prices offered in this quotation for the GLE system and optional equipment are good for orders placed in the next 60 days.

Standard Delivery ..... Ship 12 weeks ARA

Suggested Terms 20% with the order
80% when ready to ship

Notes: 1. Installation is not quoted as part of this proposal.

2. When firing gases with hydrogen sulfide, the GLE and some of its ancillary components may require special construction if gas is wet or if hydrogen sulfide level exceeds 4% by volume. The standard GLE pricing above will not apply to such units. We make this for your reference should future jobs use such gasses. For this proposal we have determined our standard is the appropriate selection.

MAGNA FLAME MODEL 4231-GLE COMBUSTION SYSTEM CONTENT

The Magna Flame Model 4231-85-GLE Combustion System as quoted includes a 85 MM Btu/hr Model 4231-GLE Burner, 8379 Controller, Model 4020-7-LP/6 Pilot Igniter, and ancillary components as shown below:

Item	Description	Qty
4231-85-GLE/X2631	GLE burner c/w reaction chamber, 4020-7-LP/6 pilot, 4065-6N4-6A nema 4 transformer and 4085-5-W ignition cable, 2 DP switches, and J-box, and prepackaging.	1
8379-GLE-BC30H1;	8379 low emissions burner controller with EPC-PWS6600S-P HMI	1
R130-BC30-ASY	Scanner assembly consists of BC30 scanner and adapter	2
R130-BC30-CBL	Cable for BC30 scanner	2
R300-9092	Averaging pitot tube	1
R895-0619	Differential pressure transmitter range -20 to +2-mm W.C. with 4-20 ma output	1
R860-3921	J-type thermocouple 8" long with 1/2 npt NEMA 4 terminal cap	1
	Total: $	

SPECIFIC COMBUSTION SYSTEM FEATURES AND BENEFITS

The Model 4231- GLE Combustion System is a state of the art, Ultra Low NOx system designed to provide optimum low NOx performance with maximum efficiency and minimal intervention. On steam generator applications, it offers the following unique features and benefits:

- Capable of sub-12 ppm NOx emission levels without FGR, while generating less than 5 ppm of CO emissions
- Capable of sub-9 ppm NOx emission levels with the use of FGR, while generating less than 5 ppm of CO
- True mass flow control capability with combustion air temperature compensation, and fuel gas pressure compensation
- Control features include continuous critical parameter tracking, with alarms when preset deviation limits are exceeded, and communications link capability
- Able to control two different fuel gas streams firing simultaneously while maintaining required emissions over a 3:1 turndown range
- "NFPA and Factory Mutual (FM) code compliant"
- Long, well defined flame envelope of approximately 7 foot diameter by 20 to 22 foot long assures good radiant heat transfer in the furnace section
- Easy Installation

SERVICES / DOCUMENTATION PROVIDED: (T&M denotes Time & Materials Per M-9-P-US-NA Rate Sheet, all other items included in system price)

- Site evaluation by North American to analyze existing system needs and identify optional equipment requirements to meet the goals for each steam generator
- Generic mechanical and electrical installation drawings
- Drawings of modified control electrical schematics and field wiring diagrams will be provided in Autocad 14 or Autocad 2000.
- Pre-Installation Check List to ensure smooth efficient installation by contractors
- Site inspection with selected installer (if desired)
- Complete operating and maintenance manual for system
- Training for operators and maintenance personnel (T&M)
- Combustion system Start up and NOx verification (T&M)
- Pre-Installation Electrical Engineering Support
- Attendance at compliance test (T&M)

MAGNA FLAME GLE BURNER, & GLE CONTROLLER

The Magna Flame Model 4231GLE Ultra Low NOx burner uses lean, partial premix combustion to achieve unparalleled low NOx emission performance. Approximately 65% of the fuel enters the burner as Primary Gas and is intimately mixed with the air prior to combustion. The GLE controller will maintain approximately 70% excess air in this primary combustion zone, producing an extremely uniform flame with inherently low NOx emissions. The balance of the fuel enters the burner through the Secondary Gas manifold and is injected into the steam generator through (4) lances built into the wall of the burner tile. This reduces the overall oxygen level down to the desired 1-2% O2, maintaining good combustion efficiency while generating less than 15 ppm of NOx. The burner also has a Center Gas connection, which provides approximately 1% of the total gas flow for enhanced stabilization and ignition.

The Model 8379 GLE Controller is integral to the Model 4231GLE Burner. It provides burner and combustion process management ensuring consistent ignition sequencing, flame monitoring, and optimal control of O2, as well as air and fuel flows. The controller allows the burner to operate with minimal emissions, maximum fuel efficiency, and is self monitoring, reducing the demand for periodic tune-ups and maintenance. This unit applies modern controls to North American's rugged NEMA 4 electronics package to provide this performance. In addition to a monochrome graphical touch interface, the unit uses a simple LED indicator panel to annunciate flame safety limits and failures. Included as part of this controller are the two (2) UV scanners required to monitor the two combustion zones of the Model 4231-GLE burner. The controller accepts a 4-20 ma signal from up to two existing O2 analyzers, one stack mounted for O2 trim, and one combustion air mounted for FGR flow control. These O2 analyzers are not included in this quotation, but are available to be quoted upon request.

The Combustion system also includes air metering components that consist of an averaging pitot tube, DP Transmitter, and T/C for temperature compensation. These components are to be installed in the customer supplied air inlet piping.

PUC GAS CONTROL TRAIN

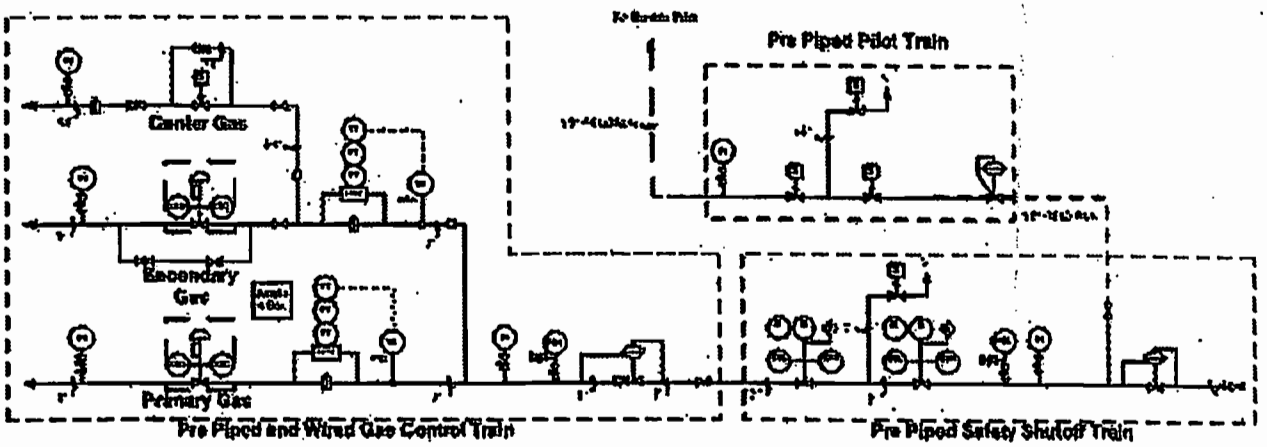
As part of this combustion system we are offering a Pre-assembled PUC Gas Control Train which comes complete with hand valves, strainer, pressure gauges, high pressure limit switch, pressure reducing regulator, primary and secondary gas flow control valves, multivariable

primary and secondary gas flow transmitter, and pressure gauges and gas flow elements for all three burner gas connections (primary, secondary, and center). The required gas supply pressure to the inlet of this train is 40 psig. Included as part of this assembly but shipped loose for field installation closer to the burner is the pilot pipe train assembly as shown below.

This PUC Gas Control Train will be fabricated to North American standards in a straight-line assembly with electrical components pre-wired to a NEMA 4 junction box. The piping assembly for this gas train is shown in the sketch below. This train splits the flow into three distinct flow paths to ensure precise fuel/air ratio in each of the burner combustion zones in order to achieve ultra low emissions. This train will be fabricated such that each gas line branch (primary, secondary, and center) is mounted one above the other to maximize component accessibility and minimize assembly width.

PUC GAS SAFETY SHUTOFF TRAIN

Included in this quotation is a Pre-assembled PUC Safety Shutoff Train which comes complete with hand valves, strainer, pressure gauges, safety shutoff valves, vent valve, and low pressure limit switch. The train is supplied and fabricated to North American standards in a straight line assembly. The piping assembly for this gas train is shown in the sketch blow.



Engineering Design Notes:

1. Pipe Train is designed, manufactured, tested, and examined per North American Mfg. Co. Piping Standards.
2. Pipe train to be painted with Standard North American Coating System
3. All instrumentation pre-wired to NEMA 4 J-box.

EMISSION GUARANTEE

The North American Model 4231-GLE Burner will provide excellent combustion performance with and without the use of FGR. Our NOx and CO emission rate guarantees are based on testing of this burner in multiple field installations.

Burner Generated NOx is guaranteed not to exceed:

- 15 ppmvd NOx (3% O2 basis) when fired over a turndown range of 3:1 with a maximum capacity of 62.5 MM Btu/hr on PUC quality natural gas with a HHV of 1000 Btu/cft <u>without</u> the need for FGR.
- The above emissions are based on firing the Model 4231-GLE Burner controlled by North American Mfg. Co. 8379-GLE controller firing into a steam generator with furnace interior dimensions of 10'-3" dia. X 40' long, with a stack O2 of 2% wet basis maintained with a continuous oxygen analysis of stack gases and an oxygen trim control loop.

Burner Generated CO is guaranteed not to exceed:

- 25 ppmvd CO (3% O2 basis) when fired over a turndown range of 3:1 with a maximum capacity of 62.5 MM Btu/hr on PUC quality natural gas with a HHV of 1000 Btu/cft with or without the use of FGR
- The above emissions are based on firing the Model 4231G-LE Burner controlled by North American Mfg. Co. 8379-GLE controller firing into a steam generator with furnace interior dimensions of 10'-3" dia. X 40' long,, with a stack O2 of 2% wet basis maintained with a continuous oxygen analysis of stack gases and an oxygen trim control loop.

We can meet this emission guarantee contingent upon proper installation in a 70,000 lb/hr steam generator with furnace dimensions as shown above in good condition and properly operated, when Startup and Verification Services are provided by North American Manufacturing.

The above guarantee is issued in conformance with our standard terms spelled out in "CONDITIONS AND LIMITS OF NORTH AMERICAN MANUFACTURING COMPANY ("NAMFG") EMISSIONS LEVELS GUARANTEE" (July 2005) attached.

STARTUP SERVICES

Startup service is not included in this proposal. See attached sheet M-9-P-US-NA-2006 for standard service rates. The Model 4231 G-LE Combustion System Startup and Verification services must be provided by North American Manufacturing in order for the above mentioned emission guarantees to be valid. Training sessions are also available per our M-9-P-US-NA-2006 rate sheet.

After reviewing this proposal, please feel free to contact me with any questions.

Regards,

Don Hendricks

Don Hendricks
Oil Field Sales
North American Manufacturing Co.
Ph: 888-209-2751
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Enclosures: 4231-85-GLE Burner Dwg. 7-5099, Conditions and Limits of North American Manufacturing Company Emissions Levels Guarantee (July 2005), NA Std. Terms and Conditions (April 2004), NA Std. US Service Charges Rate Sheet M-9-P-US-NA-2006

North American
Manufacturing Company, Ltd.

TERMS AND CONDITIONS OF SALE
April 2004

1. GENERAL. The North American Manufacturing Company, Ltd. is hereinafter referred to as the "Company". It agrees to sell the equipment covered herein on the following terms and conditions. Any order which contains terms and conditions in addition to or inconsistent with the following shall not be binding upon the Company unless acceptance thereof is made in writing by an authorized representative of the Company, and failure of the Company to object to provisions contained in any purchase order or other communication from the buyer shall not be construed as a waiver of those conditions nor an acceptance of any such provisions.

   Prices stated herein are based on those in effect on the date hereof, and are subject to change in accordance with pricing policy indicated on the face of order or by attachments.

   No orders for products of the Company shall be binding upon the Company until accepted in writing by an authorized representative of the Company.

   The right is reserved to correct clerical and stenographic errors at any time.

   The Company will comply with all applicable federal, state and local laws in the production of the goods and supplying of services hereunder. Without limiting the generality of the foregoing, the Company represents that it will comply with the requirements of Sections 6, 7 and 12 and all other applicable requirements of the Fair Labor Standards Act, as amended.

   The Equipment to be furnished on this order is, to the best of the Company's judgment, in compliance with the Occupational Safety and Health Act of 1970, with the possible exception of, in the case of burners, blowers or pumps, of paragraph 1910.95 relating to noise. Because the noise standard is an exposure standard and not an emission standard, it is not possible for an equipment manufacturer to state categorically that "this equipment meets the standard."

   Based on laboratory testing, it is the Company's opinion that the equipment covered by the order will not of itself create an environment violating OSHA noise standards, but it is possible that installation of the equipment (burners, blowers, and pumps only) in an already noisy area, or failure to consider possible noise problems in designing the installation, could contribute to an overly noisy environment.

   This contract and these provisions and terms shall be governed by and construed according to the laws of the State of Ohio.

2. DELAY. Delay in delivery of any installment of the order shall not relieve Buyer of its obligation to accept remaining deliveries. The company shall not be liable for damages or for cancellation of the contract as a result of any delay due to any cause beyond the Company's reasonable control, including, without limitation, Acts of God, acts of Buyer, embargo or other governmental act, regulation or requirements, fire, accident, labor disputes, war, civil insurrection or riot, delay in transportation, or inability to obtain necessary labor, materials, or manufacturing facilities. In the event of any such delay, the date of delivery shall be extended for a period equal to the time lost by reason of such delays.

3. WARRANTY. Products manufactured by the Company are warranted to be free from defects in workmanship and material for a period of one (1) year from the date of shipment, and any products which are defective in workmanship or material will be repaired or replaced by the Company upon return by the Buyer to the Company, at no charge to the Buyer for the cost of such repair or replacement. The obligation of the Company hereunder shall be limited solely to such repair or replacement, and shall not include field erection costs involved in the exchange, and shall be conditioned upon receipt by the Company of written notice of any alleged defects promptly after discovery thereof within the warranty period.

   The foregoing is the exclusive remedy of the Buyer, and is in lieu of any and all warranties, expressed or implied, and may be modified only in writing by an officer of the Company. No other representative or any other person is authorized to represent or assume for the Company any warranty except as set forth herein before.

   Further, as to auxiliary equipment, accessories or parts manufactured by others, the Company warrants such parts only to the extent of the warranty given by the manufacturer thereof, and said manufacturer shall determine the extent of any allowance for, or repair or replacement of, any such parts claimed to be defective.

4. SOFTWARE LICENSING AGREEMENT. The Company grants to the Buyer a non-exclusive, non-transferable and non-royalty bearing right and license to use a copy of its Software and Documentation solely in connection with the subject system of the particular quotation and/or order.

   The Buyer has no right or license to: (i) sublicense this Software and Documentation; (ii) disclose to any third party in either object or source code form; (iii) print, copy, reproduce, distribute, modify or in any other manner duplicate this Software or Documentation, in whole or in part; or (iv) de-compile, dissemble or otherwise reverse engineer this Software or any part thereof.

   All right, title and interest in and to this Software and Documentation at all times is solely vested in the Company. No rights or licenses express or implied, other than those granted as stated above are granted by this agreement.

5. SAFETY SYSTEMS AND CODE COMPLIANCE. The Company does not evaluate, test, or maintain safety systems or devices unless the Company is specifically contracted to do so. Users of combustion and related equipment have ongoing obligations under applicable codes and standards. The Company does not undertake to ensure that the Buyer is fulfilling the obligations of such applicable codes and standards.

6. ORDER CANCELLATION PRIOR TO SHIPMENT. Buyer may not cancel any order except upon written notice and payment to the Company of all reasonable costs arising from the cancellation. The Company classifies its supplies as "standard" and "engineered" according to specific content. There will be no cancellation charge for "standard items" of the Company's manufacture. No orders with "engineered" content that are complete (ready-to-pack, or packed-ready-to-ship) are cancelable and Buyer is responsible for full payment. Orders with "engineered" content that are not complete will be assessed a "to be determined" cancellation fee based on the cost of engineering, outside purchases, internal manufacturing and assembly, up to the point of cancellation. Cancellation fees for outside purchased products will be based on the cancellation fee from the Company's vendor and its agreement to accept the return. In some cases there may be a 100% restocking charge. Upon request from the Buyer at the time of quotation or order entry, the Company will provide information on the "standard" and/or "engineered" classification of the content.

7. RESTOCKING FEES FOR RETURNED ITEMS. "Engineered" items are not returnable for credit. For the Company's "standard" items, the restocking fee will be 30% for electrical items within 180 days of shipment, and 30% for mechanical items within 360 days of shipment. No returns will be accepted after

these respective time periods. A minimum restocking fee of $100 will apply. Restocking fees for any outside-purchased-product will be subject to agreement by the Company's vendor to accept the return. The outside vendor's restocking fee, plus the minimum $100 restocking fee as a handling charge, will apply. Credit, after the applicable restocking charge, will only apply to the return of new and unused equipment, verified upon receipt and inspection by the Company as being in like new, workable condition, and as having been supplied by the Company. The credit allowance will be based on the Company's original invoice price to the Buyer less the applicable restocking charge. Upon request from the Buyer at the time of quotation or order entry the Company will provide information on the "standard" and/or "engineered" classification of the content.

THE COMPANY MAKES NO WARRANTY AS TO FITNESS OF ITS PRODUCTS FOR SPECIFIC APPLICATIONS BY THE BUYER OR ITS CUSTOMERS, OR AS TO THE PERIOD OF SERVICE OF ITS PRODUCTS EXCEPT AS MAY BE EXPRESSLY PROVIDED IN WRITING BY AN OFFICER OF THE COMPANY. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING OUT OF THE FURNISHING, SERVICING, OR USE OF ANY PRODUCT MANUFACTURED OR SOLD BY IT TO THE BUYER. THIS WARRANTY SHALL NOT BE APPLICABLE IF THE DEFECT IS THE RESULT OF MISUSE, ABUSE, OPERATOR ERROR, OR LACK OF PROPER MAINTENANCE ON THE PART OF THE BUYER. SHOULD THESE REMEDIES BE FOUND INADEQUATE OR TO HAVE FAILED OF THEIR ESSENTIAL PURPOSE FOR ANY REASON WHATSOEVER, BUYER AGREES THAT RETURN OF THE FULL SALES ORDER EQUIPMENT PRICE TO IT BY COMPANY SHALL PREVENT THE REMEDIES FROM FAILING OF THEIR ESSENTIAL PURPOSE AND SHALL BE CONSIDERED BY BUYER AS A FAIR AND ADEQUATE REMEDY.

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North American
Manufacturing Company, Ltd.

FIELD SERVICE CHARGES
North America
Sheet M-9-P-US-NA

April 2006

Basic Services	Troubleshooting Tune-ups Start-ups without Software Controls	$110/hr	$165/hr	$220/hr
	Emergency Service Start-ups with Software Controls	$120/hr	$180/hr	$240/hr
Educational Services	Site Seminars Training	*Refer to "Site Seminar Rate Sheet"*		
On Call Standby[2]		$110/hr		
Minimum Charge		4 times applicable rate		
Cancelation less than 24-hours notice		$ 960	$1440	$1920

[1] Travel is portal-to-portal.
[2] Off-site. No Overtime.
[3] When need on-site less than 48 hours from the time of request.

[4] Rates are $330/hr for Field Services performed on Easter Sunday, Thanksgiving, and Christmas Day.

Terms and Conditions

Currency. All rates are quoted in U.S. dollars.

Applicable Rates. Service rates are subject to change and are those in effect when the service is performed.

Insurance. Certificate of insurance and Workman's Compensation are available upon request.

Expenses. Expenses incurred in connection with the Field Services rendered will be invoiced at cost. Expenses are defined as air travel, lodging, meals and incidentals, ground transportation, phone, facsimile, and tolls. Air travel is "coach" class (also known as "tourist" or "economy" class). Your invoice will list all charges by category and are not subject to discounts. Time sheets and copies of expense receipts will be provided only if specified on the purchase order.

Dispatch of Field Services Technician(s). No Field Services technicians will be dispatched to the installation site without a confirmation copy of a legitimate purchase order authorizing the visit.

Assignment. Field Services are not assignable or transferable by the contracting Client.

Cooperation. The Client agrees that the performance of these Field Services is dependent on the Client's timely and effective cooperation.

Delays. North American, (hereinafter referred to as the "Company") shall not be responsible for delays in the performance of assigned work if such delay arises out of causes beyond its control. Such causes may include, but are not limited to, improper installation of components, mechanical and electrical utilities, instrumentation, and/or any acts of omissions of subcontractors or third parties. The Company will invoice the Client applicable job-time and living expense charges for these delays or failures.

Safety Equipment. Personal Protective Equipment (PPE) for Field Services technicians includes safety glasses, steel-toed boots, hard hats, and "ball jackets". Additional PPE required by the Client shall be provided to the Company or Company personnel at no cost. In those instances where reasonable access is limited, the Client will provide the necessary equipment to ensure the personal safety of Field Services technicians.

Client Training. Participation in required Client training will be invoiced pursuant to the Company's appropriate hourly rate.

Warranty. Should warranty conditions arise due to supplied North American components, misapplication, or Field Services, the Company will correct the problem and absorb the applicable job-time, parts, and living expenses.

Work Hours. Normal working hours are eight (8) hours commencing at 8:00am. The maximum number of work hours for any 24-hour period is twelve (12). A minimum of ten (10) consecutive hours in any 24-hour period is required for sufficient rest and meals.

Tel. 216-271-6000
Fax 216-641-7852
Email combustion service: fscombustion@namfg.com

CONDITIONS AND LIMITS
OF
NORTH AMERICAN MANUFACTURING COMPANY ("NAMCO")
EMISSIONS LEVELS GUARANTEE

July 2005

Any Change In Data Or The Process Variables Specific To This Application, Or Failure To Comply With Any Of The Conditions And Limits Specified Below, Voids This Guarantee.

The term "as specified," as used throughout this document, refers to the specification contained in the original quotation, and any subsequent changes for the same application as are made or agreed to in writing by NAMCO.

1. Firing chamber temperature must be as specified. This temperature is defined as that indicated by a thermocouple inserted into the firing chamber to a distance sufficient to eliminate refractory gradient error.

2. Flame envelope must neither be obstructed by other surfaces in the firing chamber nor intersected by other burner flames or uncontrolled air infiltration.

3. Air/fuel ratio must be set to, and remain at, the specified value, or range. In multi-zone, multi-burner firing chambers, a means for determining individual burner ratios must be provided.

4. Temperature of combustion air must not exceed that specified in the quotation.

5. Firing rate must be as specified.

6. Combustion chamber dimensions must be as specified.

7. Furnace pressure must not allow for air infiltration (in order to maintain overall furnace atmosphere).

8. Fuel analysis must be as specified. If a range of fuel compositions is provided, the tested composition must lie entirely within that range. No components are permissible in quantities above the maximum value, nor below the minimum value, specified.

9. Flue gas recirculation, where applicable, must be provided at the levels specified in the quotation and free of any particulate or known contaminants.

10. No emissions level guarantee is made as to NOx generated by chemically-fuel-bound-nitrogen unless specifically quantified in the quotation.

11. NAMCO's services must be contracted for emissions tuning of the system for guarantee to be valid.

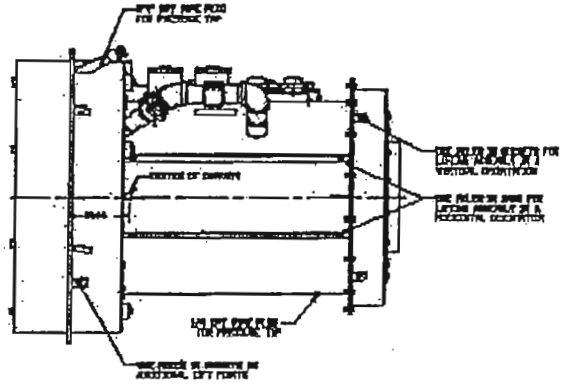
12. Compliance testing of the system must be conducted within 60 days of initial start-up. Start-up must occur no later than 120 days from the date of shipment.

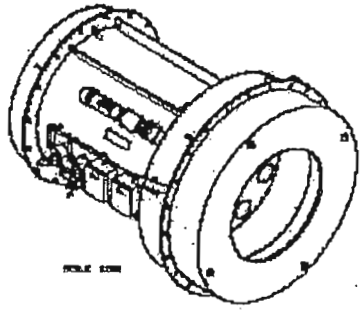
    Testing is to be accomplished by an independent authorized agency, agreed to by NAMCO, utilizing EPA-Method 7E. A copy of the full report is to be furnished to NAMCO. All costs of compliance testing, including recommended retests for reasons not attributable to NAMCO's system, shall be paid by Customer.

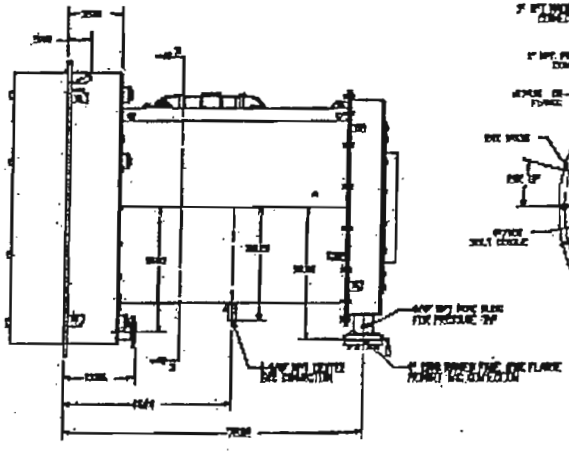
13. If any guaranteed emissions level is exceeded on start-up or at any point preceding successful compliance testing, NAMCO will, at its costs, make any and all adjustments and/or modifications to the burner that it deems appropriate and proper to reducing the emissions level to that guaranteed.

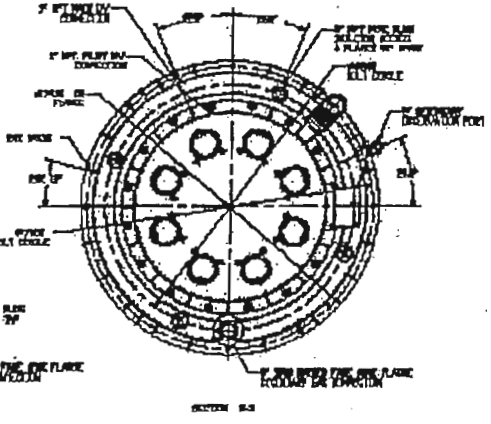
14. All guarantees contained in these conditions and limits shall end following completion of compliance testing and any retesting wherein all emission test points are documented to be at or below the guaranteed levels.

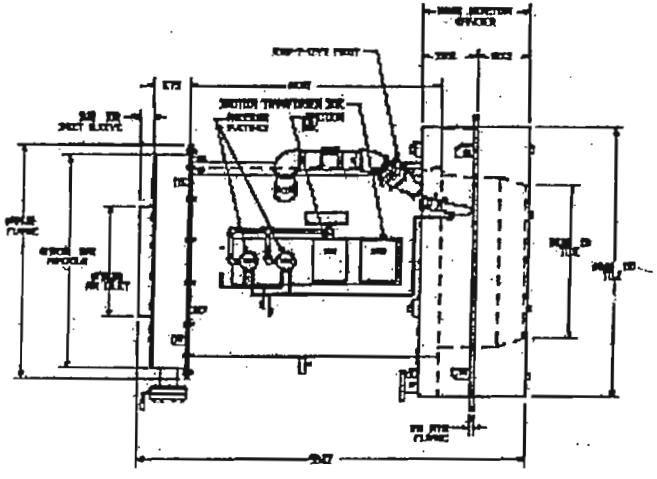
4231-85-GLE











ATTACHMENT III
Emissions Profiles

Permit #: S-1326-405-0	**Last Updated**
Facility: VINTAGE PRODUCTION CALIFORNIA	07/11/2011 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	5957.0	2122.0	2234.0	5510.0	4095.0
Daily Emis. Limit (lb/Day)	16.3	5.8	6.1	15.1	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1489.0	530.0	558.0	1377.0	1023.0
Q2:	1489.0	530.0	558.0	1377.0	1024.0
Q3:	1489.0	531.0	559.0	1378.0	1024.0
Q4:	1490.0	531.0	559.0	1378.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.5		1.3		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	2233.0		726.0		1536.0
Q2:	2233.0		726.0		1536.0
Q3:	2233.0		726.0		1536.0
Q4:	2233.0		726.0		1536.0

Permit #: S-1326-406-0	**Last Updated**
Facility: VINTAGE PRODUCTION CALIFORNIA	07/11/2011 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	5957.0	2122.0	2234.0	5510.0	4095.0
Daily Emis. Limit (lb/Day)	16.3	5.8	6.1	15.1	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1489.0	530.0	558.0	1377.0	1023.0
Q2:	1489.0	530.0	558.0	1377.0	1024.0
Q3:	1489.0	531.0	559.0	1378.0	1024.0
Q4:	1490.0	531.0	559.0	1378.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.5		1.3		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	2233.0		726.0		1536.0
Q2:	2233.0		726.0		1536.0
Q3:	2233.0		726.0		1536.0
Q4:	2233.0		726.0		1536.0

Permit #: S-1326-407-0	Last Updated
Facility: VINTAGE PRODUCTION CALIFORNIA	07/11/2011 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	5957.0	2122.0	2234.0	5510.0	4095.0
Daily Emis. Limit (lb/Day)	16.3	5.8	6.1	15.1	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1489.0	530.0	558.0	1377.0	1023.0
Q2:	1489.0	530.0	558.0	1377.0	1024.0
Q3:	1489.0	531.0	559.0	1378.0	1024.0
Q4:	1490.0	531.0	559.0	1378.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.5		1.3		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	2233.0		726.0		1536.0
Q2:	2233.0		726.0		1536.0
Q3:	2233.0		726.0		1536.0
Q4:	2233.0		726.0		1536.0

ATTACHMENT IV
SSPE1 Calculation

	SSPE1 TABULATION					
Permit	Description	NOx	SOx	PM-10	CO	VOC
S-1326-0-1	Facility-Wide Reqs					
S-1326-9-15	62.5 MM Btu/hr Steam Generator	4,380	1,560	1,643	30,113	3,011
S-1326-26-13	FANO 120 wells, CVR & 2.9 Flare	1,727	1,716	203	9,399	1,600
S-1326-27-12	Sec 2 East 100 wells, CVR & 2.9 Flare	1,727	1,716	203	9,399	1,600
S-1326-28-13	North Treating Plant 150 wells, CVR & 2.9 Flare	0	0	0	0	0
S-1326-35-6	Sec. 14 100 wells & CVR	3,723	156	438	20,258	3,449
S-1326-36-1	13 Uncontrolled Cyclic Wells					61,685
S-1326-46-4	42,000 Gal Reject Tank W/ TVR					0
S-1326-47-3	42,000 Gal LACT Tank W/ TVR					0
S-1326-48-3	210,000 Gal Produced Water Tank W/ TVR					0
S-1326-101-2	42,000 Gal Produced Water Tank (T-14)					241
S-1326-119-2	84,000 Gal Stock Tank (2GK-255)					642
S-1326-120-2	84,000 Gal Produced Water Tank (2L100)					642
S-1326-121-2	121,000 Gal Wash Tank (5L101)					1,610
S-1326-126-2	84,000 Gal Produced Water Tank (20WSTWTR)					478
S-1326-127-2	84,000 Gal Wash Tank (20X1504)					642
S-1326-128-2	84,000 Gal Stock Tank (2GK37)					642
S-1326-129-1	210,000 Gal Wash Tank (5GK43)					1,610
S-1326-130-1	210,000 Gal Stock Tank (5GK34)					1,610
S-1326-131-1	84,000 Gal Produced Water Tank (2RA100)					478
S-1326-132-1	84,000 Gal Reject Tank (SPLCONTTNK)					642
S-1326-133-1	42,000 Gal Stock Tank (152323)					321
S-1326-134-1	42,000 Gal Wash Tank (15322)					321
S-1326-135-1	42,000 Gal Stock Tank (15321)					321
S-1326-136-1	42,000 Gal Produced Water Tank (WSTWTR1)					128
S-1326-137-2	42,000 Gal Wash Tank (15324)					321
S-1326-138-2	42,000 Gal Wash Tank (15325)					321
S-1326-139-2	42,000 Gal Wash Tank (15326)					321
S-1326-140-2	42,000 Gal Produced Water Tank (WSTWTR1)					241
S-1326-143-2	84,000 Gal LACT Tank (2LCTK2)					642
S-1326-144-2	84,000 Gal LACT Tank (2LCTK1)					642
S-1326-145-2	84,000 Gal Wash Tank (WSHTK2)					642
S-1326-146-2	84,000 Gal Wash Tank (WSHTK1)					642
S-1326-147-1	84,000 Gal Stock Tank (2GK18)					642
S-1326-146-1	84,000 Gal Stock Tank (2GK23)					642
S-1326-149-1	42,000 Gal Wash Tank (1RB101)					321
S-1326-150-2	42,000 Gal Skim Tank (1DRNTK3)					321
S-1326-151-2	210,000 Gal Stock Tank (5RB1035RG)					1,610
S-1326-152-2	42,000 Gal Produced Water Tank (10WSTWTR)					321
S-1326-153-2	126,000 Gal Stock Tank (3GK309SHP)					967
S-1326-154-2	126,000 Gal Stock Tank (3GK310SHP)					967
S-1326-158-1	210,000 Gal Wash Tank (5T100)					1,610
S-1326-159-1	84,000 Gal Stock Tank (3GK24)					642
S-1326-160-1	84,000 Gal Stock Tank (3GK13)					642
S-1326-169-1	105,000 Gal Produced Water Tank (25WSTW)					591
S-1326-170-1	84,000 Gal Wash Tank (20WSH)					642
S-1326-172-1	63,000 Gal Stock Tank (15409)					485
S-1326-193-2	63,000 Gal Reject Tank (TAOOB768)					485
S-1326-194-2	63,000 Gal Wash Tank (TAOOB769)					485
S-1326-201-8	3,000 BBL Wash Tank w/ TVR (T-1)					15
S-1326-202-4	1,000 BBL Reject Oil Tank w/ TVR (T-2)					1,935
S-1326-203-5	2,000 BBL Stock Tank w/ TVR (T-3)					1,314

SSPE1 TABULATION						
Permit	Description	NOx	SOx	PM-10	CO	VOC
S-1326-204-5	2,000 BBL Stock Tank w/ TVR (T-4)					1,314
S-1326-205-4	5,000 BBL Produced Water Tank w/ TVR (T-5)					0
S-1326-206-5	1,000 BBL Skim Oil Tank w/ TVR (T-6)					694
S-1326-212-5	2,000 BBL Surge Tank w/ TVR (ST-1)					0
S-1326-214-5	84,000 Gal Surge Tank w/ TVR					0
S-1326-215-5	84,000 Gal FWKO w/ TVR					0
S-1326-260-3	3.6 MMBtu/hr Kaldair Flare (Sec 14)	Incorporated into S-1326-35				
S-1326-261-4	500 Bbl Stock Tank w/ TVR (T-20)					767
S-1326-262-3	500 Bbl Water Tank w/ TVR (T-19)					6,132
S-1326-263-8	3,000 Bbl Surge/FWKO Tank w/ TVR					75
S-1326-268-4	5,000 Bbl Surge/FWKO Tank w/ TVR (T-12)					949
S-1326-269-4	5,000 Bbl Produced Water Tank w/ TVR (T-13)					949
S-1326-270-3	1,000 Bbl Slop Tank w/ TVR (TS-1)					475
S-1326-271-3	500 Bbl Dehydration Tank w/ TVR (TS-2)					0
S-1326-272-3	1,000 Bbl Water Tank w/ TVR (TS-3)					840
S-1326-273-1	110 Bbl Skim Tank					113
S-1326-274-2	1,000 Bbl Slop Tank w/ TVR (TS-8)					0
S-1326-279-4	210,000 Gal FWKO w/ TVR				0	0
S-1326-280-3	1,000 Bbl LACT Tank w/ TVR				0	0
S-1326-281-4	1,000 Bbl LACT Tank w/ TVR					0
S-1326-283-2	2,000 Bbl Raw Water Tank w/ TVR				0	0
S-1326-285-2	2,000 Bbl Overflow Tank w/ TVR				0	0
S-1326-287-6	TEOR w/ 130 wells & Sec. 23 CVR				0	2,336
S-1326-294-1	ATC for 62.5 MM Btu/hr Steam Generator	4,380	1,560	1,643	30,113	3,011
S-1326-296-0	ATC for 420,000 Gal FWKO w/ TVR					0
S-1326-297-0	ATC for 210,000 Gal Wastewater Tank w/ TVR					0
S-1326-298-0	ATC for 2,100 Gal Skim Tank W/ TVR					0
S-1326-299-0	ATC for 420,000 Gal FWKO w/ TVR					0
S-1326-300-0	ATC for 210,000 Gal Wastewater Tank w/ TVR					0
S-1326-301-0	ATC for 210,000 Gal FWKO w/ TVR					0
S-1326-302-0	ATC for 210,000 Gal FWKO w/ TVR					0
S-1326-303-0	ATC for 126,000 Gal Wastewater Tank w/ TVR					0
S-1326-304-0	84,000 Gal Production Tank (15402 Caribou)					[illegible]
S-1326-305-0	84,000 Gal Production Tank (15403 Caribou)					[illegible]
S-1326-306-0	42,000 Gal Slop Oil Tank (Caribou)					[illegible]
S-1326-314-2	85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	13,711	4,095
S-1326-315-0	ATC for 840,000 Gal FWKO w/ TVR					0
S-1326-316-0	45,486 Gal Water Tank (Tejone 323346)					20,757
S-1326-317-0	45,486 Gal Wash Tank (Tejone 323384)					1,456
S-1326-318-0	45,486 Gal Wash Tank (Tejone 30114)					1,456
S-1326-319-0	45,486 Gal Wash Tank (Tejone 30115)					1,456
S-1326-320-0	840,000 Gal Wash Tank (Sec 9 No 1)					166,915
S-1326-321-0	840,000 Gal Wash Tank (Sec 9 No 2)					166,915
S-1326-322-0	504,000 Gal Wash Tank (Sec 9 No 4)					100,055
S-1326-323-0	420,000 Gal Stock Tank (Sec 9 No 8)					11,944
S-1326-324-0	210,000 Gal Wash Tank (Sec 9 No 9) w/ TVR					693
S-1326-325-0	420,000 Gal Stock Tank (Sec 9 No 10)					11,944
S-1326-326-0	210,000 Gal Stock Tank (Sec 9 No 11) w/ TVR					657
S-1326-327-0	210,000 Gal Stock Tank (Sec 9 No 12) w/ TVR					146
S-1326-328-0	31,500 Gal Stock Tank (South No 8)					1,068
S-1326-330-0	42 KGal FRT w/ PVv Stock Tank (North No 5)					23,225
S-1326-331-0	84,000 Gal Wash Tank (North No 6)					2,689
S-1326-332-0	84,000 Gal Wash Tank (South No 1)					[illegible]
S-1326-333-0	84,000 Gal Stock Tank (South No 2)					1,246

	SSPE1 TABULATION					
Permit	Description	NOx	SOx	PM-10	CO	VOC
S-1326-334-0	84,000 Gal Wash Tank (Security No 1)					3,400
S-1326-335-0	84,000 Gal Wash Tank (Security No 2)					3,400
S-1326-337-4	85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-338-4	85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-339-0	3.3 MMBtu/hr petrotherm (Anthill)	Cancelled				
S-1326-340-0	25 MMBtu/hr SG	Surrendered as partial mitigation for SG '-402 & '-403				
S-1326-341-0	TEOR Operation w/ 90 wells					41,902
S-1326-342-0	126 Kgal FRT w/ TVR (Fee Lease)					0
S-1326-343-0	84 Kgal FRT w/ TVR (#20X1535, Fee Lease)					0
S-1326-344-0	84 Kgal FRT w/ TVR (#20X1536, Fee Lease)					0
S-1326-345-0	84 Kgal FRT w/ TVR (#20X1537, Movius Lease)					0
S-1326-346-0	84 Kgal FRT w/ TVR (#20X1538, Movius Lease)					0
S-1326-347-0	63 Kgal FRT w/ TVR (Movius Lease)					0
S-1326-348-0	10 closed-vent cyclic wells					0
S-1326-349-0	42 Kgal FRT w/ PVv (#3156744, Tejon Lease)					19,303
S-1326-350-0	42 Kgal FRT w/ PVv (#156571, Portals #3 Lease)					19,303
S-1326-351-0	31.5 Kgal FRT wash tank (Portals #3 Lease)					5,513
S-1326-352-0	42 Kgal FRT w/ PVv (#156510, Portals #3 Lease)					19,303
S-1326-353-0	21 Kgal FRT w/ PVv (Anthill Lease)					9,665
S-1326-354-0	21 Kgal FRT w/ PVv (#5X705, Grapevine Lease)					9,665
S-1326-355-0	21 Kgal FRT w/ PVv (Grapevine Lease)					9,665
S-1326-356-0	42 Kgal FRT w/ PVv (#56569, Grapevine Lease)					19,303
S-1326-357-0	42 Kgal FRT #117049 (Davies Lease)					1,325
S-1326-358-0	42 Kgal FRT #117050 (Davies Lease)					1,325
S-1326-359-0	34 Uncontrolled TEOR Wells					0
S-1326-360-0	126 Kgal FRT w/ TVR (Anthill Lease)					0
S-1326-361-0	84 Kgal FRT w/ TVR on -360 (Anthill Lease)					0
S-1326-362-0	84 Kgal FRT w/ TVR on -360 (Anthill Lease)					0
S-1326-363-0	31.5 Kgal FRT #002317 (Anthill Lease)					3,000
S-1326-364-0	63 Kgal FRT Test Tank w/ PVv (JV Lease)					1,565
S-1326-365-0	52.5 Kgal FRT w/ PVv (JV Lease)					24,193
S-1326-366-0	42 Kgal FRT w/PVv (310X901, JV Lease)					19,303
S-1326-367-0	42 Kgal FRT w/ PVv (#10X1853, OMB Lease)					19,303
S-1326-368-0	21 Kgal FRT w/ PVv (Carrec Fee Lease)					2,013
S-1326-370-0	10.5 Kgal FRT w/TVR on -360 (Anthill Lease)					0
S-1326-371-0	180 BHp Diesel Well Pump Engine	1,080	144	32	504	32
S-1326-372-0	23 closed vent enhanced wells					0
S-1326-373-0	126 Kgal Heated FRT w/ TVR				0	0
S-1326-374-0	84 Kgal Heated FRT w/ TVR on -373					0
S-1326-375-0	84 Kgal Heated FRT w/ TVR on -373					0
S-1326-376-0	6.1 MMBtu Flare serving TVR on -373	332	14	80	1,806	307
S-1326-377-0	31.5 Kgal FRT Wash Tank (OMB Lease)					5,513
S-1326-378-0	42 Kgal FRT (#10X898)					19,303
S-1326-379-0	42 Kgal FRT (#10X1756)					19,303
S-1326-380-0	42 Kgal FRT (#10X1756)					19,303
S-1326-381-0	84 Kgal FRT w/ TVR on -373					203
S-1326-382-0	150 Mscf/day Mactronic Flare					
S-1326-383-0	42 Kgal FRT Constant Level w/ PVv					365
S-1326-384-0	42 Kgal FRT (JV Lease)					511
S-1326-385-0	Proposed 85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	13,711	4,095
S-1326-386-0	3,000 BBL FRT w/TVR				0	0
S-1326-387-0	Proposed 20,000 BBL FRT w/ TVR				0	840
S-1326-388-0	Proposed 5,000 BBL FRT w/ TVR				0	8,101
S-1326-389-0	Proposed 5,000 BBL FRT w/ TVR				0	16,662

SSPE1 TABULATION

Permit	Description	NOx	SOx	PM-10	CO	VOC
S-1326-390-0	85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-391-0	85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-392-0	85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-393-0						0
S-1326-394-0						0
S-1326-395-0						0
S-1326-396-0						0
S-1326-397-0						0
S-1326-398-0					0	4,601
S-1326-399-0					0	2,223
S-1326-400-0	Pending 85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-401-0	Pending 85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-402-0	Pending 85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
S-1326-403-0	Pending 85.0 MM Btu/hr Steam Generator	5,957	2,122	2,234	6,701	4,095
	TOTAL SSPE1 (lb/yr):	83,464	30,237	28,885	192,524	1,007,913
		NOx	SOx	PM-10	CO	VOC
	Offset Threshold	20,000	54,750	29,200	200,000	20,000
	Major Source SSPE	83,464	30,237	28,885	192,524	882,137

emisssion rates in this color have been corrected to the PTO

emission rates in this color are based upon previous calculations

emission rates in this color are based upon Samir's spreadsheet & 1 turn/day

ATTACHMENT V
BACT Analysis

Top Down BACT Analysis for NOx Emissions:

Step 1 - Identify All Possible Control Technologies

The District adopted District Rule 4320 on October 16, 2008. The NO_X emission limit requirements in District Rule 4320 are lower than the current BACT limits listed above; therefore a project specific BACT analysis will be performed to determine BACT for this project. District Rule 4320 includes a compliance option that limits oilfield steam generators with heat input ratings greater than 20 MMBtu/hr to 7 ppm @ 3% O_2. This emission limit is Achieved in Practice control technology for the BACT analysis. District Rule 4320 also contains an enhanced schedule option that allows applicants additional time to meet the requirements of the rule. The enhanced schedule NO_X emission limit requirement is 5 ppmv @ 3% O_2. Since this is an enhanced option in the rule, it will be considered the Technologically Feasible control technology for the BACT analysis.

The SJVUAPCD BACT Clearinghouse Guideline 1.2.1 has been rescinded. Therefore a new BACT analysis is required. The following are possible control technologies:

- 7 ppmvd @ 3% O2 - Achieved in Practice.
- 5 ppmvd @ 3% O2 with SCR – Technologically Feasible

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. 7 ppmvd @ 3% O2 - Achieved in Practice.
2. 5 ppmvd @ 3% O2 with SCR – Technologically Feasible

Step 4 - Cost Effectiveness Analysis

A cost effective analysis is required for technologically feasible control options that are not proposed. The applicant has proposed 7 ppmvd NOx @ 3% O_2; therefore, a cost effective analysis is required for the 5 ppmvd NOx @ 3% O_2 with Selective Catalytic Reduction option.

Cost Analysis for 5 ppmv NOx @ 3% O2:

Capital Equipment Costs:

Applicant has provided the following cost estimate to purchase and install an SCR system for the 85 MMBtu/hr steam generators from PCL Construction Leader dated March 30, 2011. A detailed summary sheet follows.

Purchase and installations costs: $756, 000
Capital Recovery (interest rate period 10 years): 0.1627 x 756,000 = $123,001

Emission Reductions from Industry Standard:

The NOx emissions reductions, from the uncontrolled rate, will be calculated utilizing an industry standard of 0.018 lb/MMBtu or 15 ppmvd NOx @ 3% O_2 (Low-NOx Burner).

Industry Standard NOx Emissions = 85 MMBtu/hr x 8760 hr/year x 0.018 lb/MMBtu
Industry Standard NOx Emissions = 13,403 lb/year

Controlled NOx emissions are based on 5 ppmvd NOx @ 3% O_2 (Equivalent to 0.0061 lb-NOx/MMBtu).

Controlled NOx emissions = 85 MMBtu/hr x 8760 hr/year x 0.0061 lb/MMBtu
Controlled NOx emissions = 4,542 lb/year
Reduced NOx Emissions = Industry Standard NOx – Controlled NOx
Reduced NOx Emissions = (13,403 lb/year – 4,542 lb/year) x 1 ton/2000 lb
Reduced NOx Emissions = 4.4 tons/year

Cost of emission reductions for 5 ppmvd NOx SCR System:

Annualized Cost/ton: ($123,001/yr) ÷ (4.4 tons/yr) = $27,954/ton

The annualized capital cost alone with operational costs of an SCR system exceeds the $24,500/ton threshold for NOx; therefore, the control technology is ***not*** cost effective per the District BACT policy.

Step 5: Select BACT:

As shown in the previous section, the use of an SCR system capable of 5 ppmvd NOx @ 3% O2 is not cost effective. The applicant has proposed the next best control listed in the step 3, 7 ppmvd NOx @ 3% O_2. Therefore, the applicant's proposal meets BACT requirements for NOx emissions.

BACT is satisfied by the applicant's proposal to meet a NOx limit of 7 ppmvd @ 3% O_2 to be achieved with a Low NO_x burner and flue gas recirculation (FGR).

Top Down BACT Analysis for VOC Emissions:

Step 1 - Identify all control technologies

1. Gaseous fuel - achieved in practice

Step 2 - Eliminate Technologically Infeasible Options

The above listed technology is technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Gaseous fuel - achieved in practice

Step 4 - Cost Effectiveness Analysis

Only one control technology identified and this technology is achieved in practice, therefore, cost effectiveness analysis not necessary.

Step 5 - Select BACT for VOC

The use of gaseous fuel (natural gas) is selected as BACT for VOC emissions.

Top Down BACT Analysis for PM_{10} and SOx Emissions:

Step 1 - Identify all control technologies

1. Natural gas, LPG, waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO2 at stack O2 - achieved in practice

Step 2 - Eliminate Technologically Infeasible Options

The above listed technology is technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Natural gas, LPG, waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO2 at stack O2 - achieved in practice

Step 4 - Cost Effectiveness Analysis

Only one control technology identified and this technology is achieved in practice, therefore, cost effectiveness analysis not necessary.

Step 5 - Select BACT for SOx and PM10

For the new steam generators BACT is satisfied by the following ATC conditions:

S-1326-405 through '-407
The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Y

Top Down BACT Analysis for CO Emissions:

Step 1 - Identify all control technologies

50 ppmv @ 3%O2 - achieved in practice

Step 2 - Eliminate Technologically Infeasible Options

The above listed technology is technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

50 ppmv @ 3%O2 - achieved in practice

Step 4 - Cost Effectiveness Analysis

Only one control technology identified and this technology is achieved in practice, therefore, cost effectiveness analysis not necessary.

Step 5 - Select BACT for CO

Applicant has proposed 10 CO @ 3% O2. Therefore BACT is satisfied for the new steam generators.

CONSTRUCTION LEADERS

August 19, 2010

Mr. Jim Robison
Vintage Production California
9600 Ming Ave. Suite 300
Bakersfield, CA 93309

Re: Steam Generator SCR Retrofits

Dear Mr. Robinson,

In response to your requests, PCL Industrial Services, Inc. offers for your review a budget price to install SCR technology on an 85MM Btu fired once through steam generator. The scope of work as detailed below includes all engineering, materials, labor, and equipment to procure and install a system that will reduce the NOx levels from 9 ppm to sub 5 ppm.

Project Details
The SCR system proposed will utilize catalyst which has an optimized operating temperature range of 850 – 925 deg F. Placement of the catalyst housing will require the separation of the economizer to operate in this temperature range . As additional room will be required, the radiant section must also be relocated to accommodate the SCR housing. The SCR unit will add 1 – 2" W.C. additional pressure drop across the steam generator. The added pressure drop will adversely affect the steam generator Lo Nox burner. To offset this additional pressure, an ID fan will be required downstream of the convection section for stable operation.

Scope of Work

Remove the convection box from the steam generator

Cut the box frame at row 7 . Add flanges to the cut splices. Repair refractory .

Fabricate SCR flanged FGR housing including refractory and painting

Provide and install approx 200 cubic feet catalyst with associated injection system

Excavate, form, and pour 15 foot extension to the generator foundation for SCR and ID Fan

Disconnect electrical and utilities from radiant and cab section.

Relocate the radiant to accommodate new steam generator length (avoid pipe rack relocation)

PCL INDUSTRIAL SERVICES, INC.
1500 S. Union Ave, Bakersfield, CA 93307
Telephone: (661) 832-3995 ☎ Fax: (661) 832-3412

ATTACHMENT VI
HRA and AAQA Analysis

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Richard Edgehill – Permit Services
From:	Cheryl Lawler – Technical Services
Date:	July 26, 2011
Facility Name:	Vintage Production Company, LLC
Location:	Heavy Oil Central Stationary Source
Application #(s):	S-1326-405-0, 406-0, 407-0
Project #:	S-1112303

A. RMR SUMMARY

RMR Summary					
Categories	**Natural Gas Steam Generator (Unit 405-0)**	**Natural Gas Steam Generator (Unit 406-0)**	**Natural Gas Steam Generator (Unit 407-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	**0.00***	**0.00***	**0.00***	0.01	0.06
Acute Hazard Index	N/A	N/A	N/A	N/A	0.00
Chronic Hazard Index	N/A	N/A	N/A	N/A	0.00
Maximum Individual Cancer Risk	N/A	N/A	N/A	N/A	0.00
T-BACT Required?	**No**	**No**	**No**		
Special Permit Conditions?	**Yes**	**Yes**	**Yes**		

*The unit passed on prioritization with a score less than 1; therefore, no further analysis was required.

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Units 405-0, 406-0, 407-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

B. RMR REPORT

I. Project Description

Technical Services received a request on July 8, 2011, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the installation of three 85 MMBtu/hr natural gas steam generators.

II. Analysis

For the Risk Management Review, toxic emissions from the project were calculated using Ventura County emission factors for natural gas external combustion. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The total project prioritization score was less than 1.0 (see RMR Summary Table); therefore, no further analysis was necessary.

The following parameters were used for the review:

Analysis Parameters (each generator)			
Source Type	Point	**Closest Receptor (m)**	1280
Stack Height (m)	6.1	**Closest Receptor Type**	Residence
Stack Diameter (m)	1.07	**Project Location Type**	Rural
Gas Exit Temperature (K)	394	**Stack Gas Velocity (m/s)**	13.31

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx, PM_{10}, and $PM_{2.5}$, as well as the RMR. Emission rates used for criteria pollutant modeling were 0.63 lb/hr CO, 0.68 lb/hr NOx, 0.24 lb/hr SOx, 0.25 lb/hr PM_{10}, and 0.25 $PM_{2.5}$.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*
Values are in $\mu g/m^3$

Three NG Steam Generators	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[2]	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[1]	Pass[1]
$PM_{2.5}$	X	X	X	Pass[3]	Pass[3]

*Results were taken from the attached PSD spreadsheet.
[1]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).
[2]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.
[3]For this case as per District procedure, minor $PM_{2.5}$ sources are modeled only for primary $PM_{2.5}$ concentrations, and these concentrations are compared to the 24-hour SIL of 1.2 ug/m^3 and the annual SIL of 0.3 ug/m^3.

III. Conclusions

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.

The total prioritization score for the project is not above 1.0. In accordance with the District's Risk Management Policy, the units are approved **without** Toxic Best Available Control Technology (T-BACT).

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on Page 1 of this report must be included for each proposed unit.

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.

ATTACHMENT VII
Statewide and Title V Compliance Certification

San Joaquin Valley
Unified Air Pollution Control District

RECEIVED
JUN - 2 2011
SJVAPCD
Southern Region

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

☐	SIGNIFICANT PERMIT MODIFICATION	☐	ADMINISTRATIVE AMENDMENT
☒	MINOR PERMIT MODIFICATION		

COMPANY NAME: **Vintage Production California, LLC**									FACILITY ID: **S – 1326**	
1. Type of Organization:	☒	Corporation	☐	Sole Ownership	☐	Government	☐	Partnership	☐	Utility
2. Owner's Name:										
3. Agent to the Owner:										

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial **all** circles for confirmation):

(N) Based on information and belief formed after reasonable inquiry, the source identified in this application will continue to comply with the applicable federal requirement(s).

(N) Based on information and belief formed after reasonable inquiry, the source identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

(N) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

(N) Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Signature of Responsible Official

6/2/2011
Date

William J. Hill (William Hill)
Name of Responsible Official (please print)

Operations Manager
Title of Responsible Official (please print)

Installation of three 85.0 MM Btu/hr natural gas fired steam generators.

CERTIFICATION

OXY USA Inc. hereby certifies as follows:

1. OXY USA Inc. owns or operates certain major stationary sources in the State of California. Such sources are comprised of a vast number of emission points. As used in this certification, the term "major stationary source" shall, with respect to OXY USA Inc. stationary sources in the SJVUAPCD, have the meaning ascribed thereto in SJVUAPCD Rule 2201, Section 3.23, and shall, with respect to all of OXY USA Inc.'s other stationary sources in the State of California, have the meaning ascribed thereto in section 302(J) of the Clean Air Act (42 U.S.C. Section 7602 (J)).

2. Subject to paragraphs 3 and 4 below, all major stationary sources owned or operated by OXY USA Inc. in the State of California are either in compliance, or on an approved schedule of compliance, with all applicable emission limitations and standards under the Clean Air Act and all of the State Implementation Plan approved by the Environmental Protection Agency.

3. This certification is made on information and belief and is based upon a review of OXY USA Inc.'s major stationary sources in the State of California by those employees of OXY USA Inc. who have operational responsibility for compliance. In conducting such reviews, OXY USA Inc. and its employees have acted in good faith and have exercised best efforts to identify any exceedance of the emission limitations and standards referred to in paragraph 2 thereof.

4. This certification shall speak as of the time and date of its execution.

CERTIFICATION

By: _____ Date: 6/2/2011

William J. Hill

Title: Operations Manager Time: 1:00 PM

ATTACHMENT VIII
Best Performance Standard

San Joaquin Valley
Unified Air Pollution Control District

Best Performance Standard (BPS) x.x.xx

Date: 6/24/10

Class	**Steam Generators**
Category	**Oilfield**
Best Performance Standard	**Very High Efficiency Steam Generator Design With:** 1. A convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer) or a manufacturer's overall thermal efficiency rating of 88%. **And** 2. Variable frequency drive high efficiency electrical motors driving the blower and water pump.
Percentage Achieved GHG Emission Reduction Relative to Baseline Emissions	13.0%

District Project Number	C-1100391
Evaluating Engineer	Steve Roeder
Lead Engineer	Arnaud Marjollet
Initial Public Notice Date	April 28, 2010
Final Public Notice Date	May 28, 2010
Determination Effective Date	June 24, 2010

CONSTRUCTION LEADERS

Optional Super 85MM BTU/hr Steam Generator:

PCL has a radiant design with 30ea. 4" radiant tubes and 30ea. 3" radiant tubes that helps reduce the pressure drop across the water side. This also increases the radiant surface area helping with heat transfer and increase throughput (200 to 400 bpd). This larger in diameter radiant that is also longer helps the combustion process allowing more area for combustion helping reduce the overall Nox. The additional cost is $55,632. per unit plus applicable taxes.

Additional Convection Box Surface Area

Convection Option-1	To add 3,500sqft by adding a row of 3/4" fins (... ubes) and a row of 1" fins (15ea. additional tube) wc ...plicable taxes
Convection Option-2	To add 4,150sqft by adding two rows of ... tional tubes) would ...able taxes
Convection Option-3	To add 4500sqft by adding two rows of 1" fins (30ea. additional tubes) and increase the fin density in the back of the convection box wo plus applicable taxes

1-26-10

This quotation is contingent upon a mutually agreeable contract and an award with 30 days. PCL retains the option to modify or withdraw this quotations should any of these items are not obtained.

The delivery schedule is based on an award by January 22, 2010.

Thank you for your continued interest in PCL Industrial Services. If you should have any questions or request regarding this quotation, please feel free to call me any time.

Sincerely,

Mark Pittser

Mark Pittser
(661) 343-2789 cell
(661) 835-4440 office

CONSTRUCTION LEADERS

- Fabricate Radiant support skid with the above material specification. The support skid to have beams on each side of the radiant along with cross beams at each end with three additional cross beams spaced evenly between the end cross beams. The radiant will be attached to the support skid with five saddle type supports. The saddle supports to be fabricated with a web plate and an end plate on each end. The web plates to be constructed with 3/8" A36 plate and the end plates should be constructed with 3/8" A36 plate. The saddle supports are to be welded to the radiant support rings and support skid cross beams and end beams. All steel should be welded both sides.

- All fabrication and welding should meet the requirements of American Welding Society (AWS) D1.1, American Institute of Steel Construction (AISC) and Uniform Building Code (UBC).
- Radiant shell, burner wall, target wall and supports steel should be sandblasted to SP-10 and externally coated with a primer and dunes tan top coat.

Econovection Scope of Work

- Heating Surface — Approximate 20450 Ft. Sq. + 4159/85 = 289 ft²/MMBTU
- Water Tubes — ASME SA-106-B
  3.5" O.D. Schedule 80
  .300" Thickness
  ASME Section 1 @ 2000 psi
- The Convection section to be a horizontal flow pyramid type design.
- The water flow to be dual pass design for uniform flow. Gas flow passage shall be arranged to facilitate cleaning by flushing lanes between rows of fin tubes.
- The tubes to be removable through the tube sheets.
- All tube turns to be internal in end cover boxes, but external of tube sheets.
- The convection section tube sheets shall have 4" of castable refractory. The doors and end cover will have ceramic fiber insulation to maintain a 140 deg Fº maximum shell temperature (at ambient temperature 70-degree Fº).
- The convection section to be equipped with (1) quick opening door on the top of the convection with 4" of folded ceramic fiber insulation which will cover the area of the finned tubes. The door will be secured with threaded stud assemblies, Door gasket flanges and joints will be designed to prevent leakage. All bolts to be welded internally to prevent rotation of bolts during nut removal process.
- The transition section between the radiant and the convection will be insulated with 6" of ceramic fiber on the top and sides. The bottom will be insulated with castable refractory.
- A thermocouple to measure flue gas temperature exiting the convection section shall be mounted in stack.
- All convection box tubes will be SA-106-B.
- All fittings and return bends will be SA-234 WPB.
- One 42" diameter free standing vent stack with nine (9) feet pf personal protection grating around stack.
- Mating flange for radiant to convection section to be supplied.
- PCL to perform 10% X-Ray to B31-1.
- Convection box, stack, and transition section will be sandblasted to SP-10 and externally coated with a primer and black top coat.

ATTACHMENT IX
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1326-405-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC
MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93311

LOCATION: HEAVY OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NE 23 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
85.0 MMBTU/HR NATURAL GAS -FIRED STEAM GENERATOR WITH NORTH AMERICAN 4231-85 GLE BURNER (OR EQUIVALENT) AND A FLUE GAS RECIRCULATION SYSTEM

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

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-1326-405-0 : Aug 10 2011 8:16AM – EDGEHILR : Joint Inspection Required with EDGEHILR

6. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
7. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Steam generator shall be equipped with variable frequency drive electrical motors driving the blower and water pump and a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer) or a manufacturer's overall thermal efficiency rating of 88%. [Public Resources Code 21000-21177: California Environmental Quality Act] Federally Enforceable Through Title V Permit
9. Prior to operating equipment under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 2233 lb/quarter; PM10: 726 lb/quarter, and VOC: 1536 lb/qtr. Offsets include the applicable offset ratio specified in Section 4.8 of Rule 2201 (as amended 4/21/11). PM10 may be offset using SOx at an interpollutant offset ratio of 1.0 tons SOx/ton PM10 . [District Rule 2201] Federally Enforceable Through Title V Permit
10. ERC Certificate Numbers S-3523-2, S-3065-1, S-3061-5 (or certificates split from theses certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
11. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
12. 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] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
14. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permittee shall test annually the sulfur content of the fuel gas combusted in steam generator using ASTM method D1072, D3031, D4084, or D3246 and make test results readily available for District inspection. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit
16. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Emission rates shall not exceed: PM10: 0.003 lb/MMBtu, VOC: 0.0055 lb/MMBtu, NOx (as NO2): 7 ppmvd NOx @ 3% O2, or CO: 10 ppmv @ 3% O2. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. A source test to demonstrate compliance with NOx and CO emission limits shall be performed within 60 days of initial startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. 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. Unless otherwise 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 4320. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

23. 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] Federally Enforceable Through Title V Permit

24. 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 Rules 4305, 5.5.5, 4306, 5.5.5, and 4320] Federally Enforceable Through Title V Permit

25. The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 1081, 4305, 4306, 4320, and 4351] Federally Enforceable Through Title V Permit

26. 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 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

27. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

28. If either the NOx or CO concentrations corrected to 3% O2, 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

29. All NOx, CO, and O2 emission 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit

32. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit

33. Permittee shall maintain records of fuel gas sulfur compound measurements. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

34. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit

35. 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, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1326-406-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC
MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93311

LOCATION: HEAVY OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NE 23 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
85.0 MMBTU/HR NATURAL GAS -FIRED STEAM GENERATOR WITH NORTH AMERICAN 4231-85 GLE BURNER (OR EQUIVALENT) AND A FLUE GAS RECIRCULATION SYSTEM

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1326-406-0 : Aug 10 2011 9:09AM – EDGEHILR : Joint Inspection Required with EDGEHILR

6. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

7. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Steam generator shall be equipped with variable frequency drive electrical motors driving the blower and water pump and a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer) or a manufacturer's overall thermal efficiency rating of 88%. [Public Resources Code 21000-21177: California Environmental Quality Act] Federally Enforceable Through Title V Permit

9. Prior to operating equipment under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 2233 lb/quarter; PM10: 726 lb/quarter, and VOC: 1536 lb/qtr. Offsets include the applicable offset ratio specified in Section 4.8 of Rule 2201 (as amended 4/21/11). PM10 may be offset using SOx at an interpollutant offset ratio of 1.0 tons SOx/ton PM10 . [District Rule 2201] Federally Enforceable Through Title V Permit

10. ERC Certificate Numbers S-3523-2, S-3065-1, S-3061-5 (or certificates split from theses certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

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13. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

14. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Permittee shall test annually the sulfur content of the fuel gas combusted in steam generator using ASTM method D1072, D3031, D4084, or D3246 and make test results readily available for District inspection. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit

16. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

17. Emission rates shall not exceed: PM10: 0.003 lb/MMBtu, VOC: 0.0055 lb/MMBtu, NOx (as NO2): 7 ppmvd NOx @ 3% O2, or CO: 10 ppmv @ 3% O2. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

18. A source test to demonstrate compliance with NOx and CO emission limits shall be performed within 60 days of initial startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

19. Source testing to measure NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. 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. Unless otherwise 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 4320. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

23. 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] Federally Enforceable Through Title V Permit

24. 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 Rules 4305, 5.5.5, 4306, 5.5.5, and 4320] Federally Enforceable Through Title V Permit

25. The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 1081, 4305, 4306, 4320, and 4351] Federally Enforceable Through Title V Permit

26. 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 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

27. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

28. If either the NOx or CO concentrations corrected to 3% O2, 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

29. All NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit

32. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit

33. Permittee shall maintain records of fuel gas sulfur compound measurements. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

34. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit

35. 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, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1326-407-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC
MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93311

LOCATION: HEAVY OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NE 23 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
85.0 MMBTU/HR NATURAL GAS -FIRED STEAM GENERATOR WITH NORTH AMERICAN 4231-85 GLE BURNER (OR EQUIVALENT) AND A FLUE GAS RECIRCULATION SYSTEM

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1326-407-0 : Aug 10 2011 8:08AM -- EDGEHILR : Joint Inspection Required with EDGEHILR

6. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

7. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Steam generator shall be equipped with variable frequency drive electrical motors driving the blower and water pump and a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer) or a manufacturer's overall thermal efficiency rating of 88%. [Public Resources Code 21000-21177: California Environmental Quality Act] Federally Enforceable Through Title V Permit

9. Prior to operating equipment under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 2233 lb/quarter; PM10: 726 lb/quarter, and VOC: 1536 lb/qtr. Offsets include the applicable offset ratio specified in Section 4.8 of Rule 2201 (as amended 4/21/11). PM10 may be offset using SOx at an interpollutant offset ratio of 1.0 tons SOx/ton PM10 . [District Rule 2201] Federally Enforceable Through Title V Permit

10. ERC Certificate Numbers S-3523-2, S-3065-1, S-3061-5 (or certificates split from theses certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

11. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

12. 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] Federally Enforceable Through Title V Permit

13. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

14. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Permittee shall test annually the sulfur content of the fuel gas combusted in steam generator using ASTM method D1072, D3031, D4084, or D3246 and make test results readily available for District inspection. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit

16. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

17. Emission rates shall not exceed: PM10: 0.003 lb/MMBtu, VOC: 0.0055 lb/MMBtu, NOx (as NO2): 7 ppmvd NOx @ 3% O2, or CO: 10 ppmv @ 3% O2. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

18. A source test to demonstrate compliance with NOx and CO emission limits shall be performed within 60 days of initial startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

19. Source testing to measure NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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20. 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. Unless otherwise 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 4320. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

23. 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] Federally Enforceable Through Title V Permit

24. 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 Rules 4305, 5.5.5, 4306, 5.5.5, and 4320] Federally Enforceable Through Title V Permit

25. The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 1081, 4305, 4306, 4320, and 4351] Federally Enforceable Through Title V Permit

26. 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 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

27. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

28. If either the NOx or CO concentrations corrected to 3% O2, 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

29. All NOx, CO, and O2 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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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30. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (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 Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit

32. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit

33. Permittee shall maintain records of fuel gas sulfur compound measurements. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

34. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit

35. 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, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit