San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

APR 24 2017

Mr. Rolando I. Trevino
PG & E Company - Kettlemen Compressor Station
Attn: Air Permits
P O Box 7640
San Francisco, CA 94120

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-904
Project # C-1152842

Dear Mr. Trevino:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project authorizes the removal of monthly CO portable analyzer monitoring requirements and the installation of a 1,000 gallon aboveground pipeline liquids storage tank.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. 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. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email
cc: Kou Thao, PG & E (w/enclosure) via email

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Modify Monitoring Requirements for Turbines and Installation of AST for Pipeline Liquids

Facility Name:	Pacific Gas and Electric Company – Kettleman Compressor Station	Date:	April 8, 2017
Mailing Address:	P O Box 7640 San Francisco, CA 94120	Engineer:	Jesse A. Garcia
		Lead Engineer:	Joven Refuerzo
Contact Person:	Kou Thao		
Telephone:	(559) 481-5983		
E-Mail:	K1td@pge.com		
Application #(s):	C-904-27-9, -28-9, -29-9 and -32-0		
Project #:	C-1152842		
Deemed Complete:	April 6, 2017		

I. Proposal

Pacific Gas and Electric Company – Kettleman Compressor Station (PG&E) has requested Authorities to Construct (ATCs) for the modification to three existing natural gas-fired turbines, K-1, K-2 and K-3 listed under permits C-904-27, -28 and -29, respectively, to:

- Remove portable analyzer checks
- Address monitoring device downtime, and
- Clarify the applicability of requirements during normal versus startup and shutdown operating modes.

These proposed modifications will be discussed and analyzed in further detail in the following sections.

Although there is a proposed change to monitoring conditions, the changes to the monitoring conditions are not changes in the method of operation and they do not lessen the stringency of the existing emissions limits; therefore, the proposed changes in monitoring conditions are not considered a "modification" per District Rule 2201.

The current ATCs and permits are included in Appendix B.

There are currently unimplemented ATCs associated with the turbines proposed to be modified; the applicant has indicated that the valid unimplemented ATCs C-904-27-7, -28-7 and -29-7 will be implemented prior to or concurrently with the ATCs issued in this project. Therefore, the following condition will be included on each ATC for the turbines to ensure compliance:

- Authority to Construct (ATC) C-904-XX-7 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]

PG&E also proposes to permit an existing 1,000 gallon aboveground pipeline liquids storage tank, Tank D-322, and a tanker truck loadout operation, as ATC C-904-32-0. Although the tank is existing, for the purposes of this evaluation, it will be considered a new emissions unit. PG&E amended the original proposal on April 5, to have the tank installed without a pressure/vacuum relief valve.

PG&E has received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, 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. PG&E must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 1081 Source Sampling (12/16/93)
Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410 Prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984
Subpart GG - Standards of Performance for Stationary Gas Turbines
Subpart KKKK - Standards of Performance for Stationary Combustion Turbines
Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution
Rule 4002 National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities
Subpart HHH - National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4301 Fuel Burning Equipment (12/17/92)
Rule 4623 Storage of Organic Liquids (5/19/05)
Rule 4624 Transfer of Organic Liquid (12/20/07)
Rule 4703 Stationary Gas Turbines (9/20/07)
Rule 4801 Sulfur Compounds (12/17/92)
40 CFR Part 64 Compliance Assurance Monitoring
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 facility is located at 34453 Plymouth Ave in Avenal, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The PG&E Kettleman Compressor Station serves to compress natural gas flowing through PG&E pipelines 300 A and B. Depending on the market demands, the gas flowing through this station may represent roughly 40% of PG&E's natural gas supply; in addition, the gas may be flowing from Canada to markets in Central and Southern California or from the Southwestern U.S. to markets in the Bay Area of California.

C-904-27, -28 and -29:
Three natural gas-fired gas turbine engines with dry low NO_X combustors and selective catalytic reduction are used to drive natural gas compressors; no electricity is generated from these engines, and no heat recovery is performed on the turbine exhaust. The proposed project is only to revise monitoring for each of the three gas turbines. There will be no changes to their processing equipment or methods of operation as a result of these monitoring changes.

C-904-32:
The proposed Tank D-322 stores pipeline liquids that are collected in the natural gas compressor yard. During transmission, various hydrocarbon liquids accumulate in the pipeline and must be collected and removed. These pipeline liquids are captured in a filter separator and then stored in the proposed tank.

V. Equipment Listing

Pre-Project Equipment Description:

C-904-27-7: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND A IN-STACK NOX AND O_2 MONITORING SYSTEM; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-28-7: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND A IN-STACK NOX AND O_2 MONITORING SYSTEM; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-29-7: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND A IN-STACK NOX AND O_2 MONITORING SYSTEM; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR

Proposed Modification:

C-904-27-9: MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

C-904-28-9: MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

C-904-29-9: MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

C-904-32-0: PIPELINE LIQUID TRANSFER, STORAGE, AND LOADOUT OPERATION CONSISTING OF A 1,000 GALLON CONVAULT ABOVEGROUND STORAGE TANK (D-322) AND TANKER TRUCK LOADOUT EQUIPMENT

Post Project Equipment Description:

C-904-27-9: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-28-9: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-29-9: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-32-0: PIPELINE LIQUID TRANSFER, STORAGE, AND LOADOUT OPERATION CONSISTING OF A 1,000 GALLON CONVAULT ABOVEGROUND STORAGE TANK (D-322) AND TANKER TRUCK LOADOUT EQUIPMENT

VI. Emission Control Technology Evaluation

C-904-27, -28 and -29:

Emissions from natural gas-fired turbines include NO_X, carbon monoxide (CO), particulate matter less than 10 microns in diameter (PM_{10}), sulfur oxides (SO_X), and volatile organic compounds (VOC).

PM_{10} emissions are controlled through the use of PUC-quality natural gas, and an air intake filter house. VOC, CO and SO_X emissions are controlled through the use of an oxidation catalyst and PUC-quality natural gas.

The level of NO_X formation in a gas turbine is unique (by design factors) to each gas turbine model and operating mode. The primary factors that determine the amount of NO_X generated are the combustor design, the types of fuel being burned, ambient conditions, operating cycles, and the power output of the turbine.

The design of the combustor is the most important factor influencing the formation of NO_X. Design parameters controlling air/fuel ratio and the introduction of cooling air into the combustor strongly influence thermal NO_X formation. Thermal NO_X formation is primarily a function of flame temperature and residence time. The extent of fuel/air mixing prior to combustion also affects NO_X formation. Simultaneous mixing and combustion results in localized fuel-rich zones that yield high flame temperatures in which substantial thermal NO_X production takes place.

NO_X emissions will be controlled by the use of dry low-NO_X (DLN) combustors (SoLoNO$_X$ combustion system), and a Selective Catalytic Reduction (SCR) system.

Premixing air and fuel at a lean ratio approaching the lean flammability limit (approximately 50% excess air) significantly reduces peak flame temperature, resulting in minimum NO_X formation during combustion. This is known as dry low NO_X (DLN) combustion. Injecting water or steam into a conventional combustor provides a heat sink that effectively reduces peak flame temperature, thereby reducing thermal NO_X formation.

Selective Catalytic Reduction systems selectively reduce NO_X emissions by injecting ammonia (NH_3) into the exhaust gas stream upstream of a catalyst. Nitrogen oxides, NH_3, and O_2 react on the surface of the catalyst to form molecular nitrogen (N_2) and H_2O. SCR is capable of over 90 percent NO_X reduction. Titanium oxide is the SCR catalyst material most commonly used, though vanadium pentoxide, noble metals, or zeolites are also used. The ideal operating temperature for a conventional SCR catalyst is 600 to 750 °F. Exhaust gas temperatures greater than the upper limit (750 °F) will cause NO_X and NH_3 to pass through the catalyst unreacted.

C-904-32:
For the proposed tank, PG&E has not proposed any emission control devices.

VII. General Calculations

A. Assumptions

For the turbines (C-904-27, -28 and -29):

- The maximum operating schedule is 24 hours per day
- The unit is fired solely on PUC regulated natural gas
- Annual pre-project and post-project potential to emit is calculated based on 8,760 hours of operation per year
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- The maximum amount of oxides of nitrogen for startup and shutdown shall be limited to 171 ppmv @ 15% O_2 (per current PTO)
- The maximum amount of ammonia in the exhaust (ammonia slip) shall be limited to 10 ppmv @ 15% O_2 (per current PTO)
- Molecular weights of NH_3: MW = 17 lb/lb-mol

For the aboveground storage tank and tanker truck loadout (C-904-32):

- VOC is the only pollutant of concern
- The pipeline liquid stored in the tank is a mixture of several VOC including gasoline range organics (C5-C12), diesel range organics (C10-C28), motor oil range organics (C24-C36), and several other organic compounds. The physical and chemical properties of this liquid are assumed to be similar to crude oil. Therefore, available data for crude oil will be used in the EPA's TANKS program (i.e., liquid molecular weight = 207 lb/lb-mol, vapor molecular weight = 50 lb/lb-mol, and density = 7.1 lb/gal @ 60°F) to estimate the tank emissions.

B. Emission Factors

For the turbines (C-904-27, -28 and -29):
Although the turbines are not undergoing an NSR modification, the emissions calculations will be shown for reference purposes only.

Steady State Emission Factors:

The following steady state emission factors were taken from the current permits for these units. Conversions of these emission factors were taken from the application reviews performed for projects C-1084328 and C-1093441 for this facility.

Pollutant	Steady State Emission Factors		
NO_X	--	0.0295 lb-NO_X/MMBtu	8 ppmvd NO_X (@ 15%O_2)
SO_X	--	0.0028 lb-SO_X/MMBtu	--
PM10	0.3 lb-PM10/hr	0.0052 lb-PM10/MMBtu	--
CO	--	0.1121 lb-CO/MMBtu	50 ppmvd CO (@ 15%O_2)
VOC	--	0.0320 lb-VOC/MMBtu	25 ppmvd VOC (@ 15%O_2)
NH_3	--	0.0136 lb-NH_3/MMBtu	10 ppmvd NH_3 (@ 15%O_2)

Startup and Shutdown Emission Factors:

The maximum startup and shutdown emission factor for NO_X emissions was taken from the current permits for these turbines.

Pollutant	Startup and Shutdown Emission Factors	
NO_X	0.6203 lb-NO_X/MMBtu	171 ppmvd NO_X (@ 15%O_2)

For the aboveground storage tank and tanker truck loadout (C-904-32):
The proposed operation is expected to have emissions from the following activities:

Tank emissions
The potential emissions will be estimated using EPA's TANKS 4.0.d program. Therefore, EF2 is not listed here.

Truck loadout process
Truck loading emissions:
EPA's AP-42, Section 5.2, lists the following equation to estimate the emissions from loading petroleum liquids:

EF2 = 12.46 SPM/T, where

S = Saturation factor (0.5, submerged loading of a clean cargo tank, AP-42, Table 5.2-1)
P = True vapor pressure of liquid loaded, psia (1.24 psia[1])
M = Molecular weight of vapors (50 lb/lb-mol)
T = Temperature of bulk liquid loaded, °R (66 + 460 = 526°R)

EF2 = 0.73 lb-VOC/1,000 gal of liquid loaded

Connect/disconnect hoses during truck loading:
The liquid drainage is presumed to be 10 mL per disconnect. The entire amount of liquid drained is assumed to be emitted as VOC. Therefore,

EF2 = (10 mL/disconnect)(7.1 lb-product/gal)(2.6417 x 10^{-4} gal/mL)
= 0.019 lb-VOC/disconnect

Fugitive emissions from equipment leaks:
The proposed installation will require additional valves and connectors to divert the condensate liquid. The emission factors for these components are summarized in the following table. These factors are taken from Table 2-1 of EPA's "Protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017 November 1995)" document.

Component Type	Source Type	VOC Emission Factor lb/hr/source
Valves	Gas	0.01316
	Light Liquid	0.00889
	Heavy Liquid	0.00051
Connectors	Gas	0.00403
	Light Liquid	0.00403
	Heavy Liquid	0.00403

[1]TVP is calculated using the method explained in Appendix B of Rule 4623 and using the proposed RVP of 2.3 psia and liquid storage temperature of 66°F from TANKS program.

Calculated TVP = (RVP) $e^{[Co(IRTEMP - ITEMP)]}$ = (2.3) $e^{[-6,439.2(1/(66+459.69) - 1/559.69)]}$ = 1.093 psia;

C_F = CF = (0.04) x (RVP) + 0.1 = (0.04) x (1.09) + 0.1 = 0.144 psia

Corrected TVP = Calculated TVP + C_F;
Corrected TVP = 1.093 psia + 0.144 psia = 1.24 psia

C. Calculations

1. Pre-Project Potential to Emit (PE1)

For each turbine (C-904-27, -28 and -29):
As stated above, although the turbines are not undergoing an NSR modification, the emissions calculations will be shown here for reference purposes only.

a.) The maximum startup and/or shutdown of the gas turbine is two hours per day and will not exceed 171 ppmvd NOx @ 15% O_2.

$$58.14\,MMBtu/hr \times \left[0.6203\frac{lb}{MMBtu}\,(or\,171\,ppmv\,NOx)\times\frac{2\,hr}{startup/shutdown}\right] = 72.1\frac{lb-NOx}{startup/shutdown}$$

Maximum daily emissions for NO_X occurs when each gas turbine undergoes a two hour startup and/or shutdown and 22 hours operating at full load.

NO_X PE_{max} = [Heat Input (MMBtu/hr) x $EF_{startup}$ (lb/MMBtu) x 2 hours/day] + [Heat Input (MMBtu/hr) x $EF_{steady\ state}$ (lb/MMBtu) x 22 hours/day]

NO_X PE_{max} = [58.14 MMBtu/hr x 0.6203 lb-NO_X/MMBtu x 2 hour/day]
+ [58.14 MMBtu/hr x 0.0295 lb-NO_X/MMBtu x 22 hours/day]
NO_X Daily PE_{max} = 109.9 lb-NO_X/day

NO_X Annual PE_{max} = [Heat Input (MMBtu/hr) x $EF_{startup}$ (lb/MMBtu) x 2 hours/day] + [Heat Input (MMBtu/hr) x $EF_{steady\ state}$ (lb/MMBtu) x 22 hours/day] x 365 days/year
NO_X Annual PE_{max} = [58.14 MMBtu/hr x 0.6203 lb-NO_X/MMBtu x 2 hour/day]
+ [58.14 MMBtu/hr x 0.0295 lb-NO_X/MMBtu x 22 hours/day] x 365 day/year
NO_X Annual PE_{max} = 40,099 lb-NO_X/year

b.) Maximum daily emissions for SO_X, PM_{10}, CO, VOC and NH_3 occur when each gas turbine operates twenty-four (24) hours at full load.

The PE for each pollutant is calculated with the following equation:

- PE = EF (lb/MMBtu) × Heat Input (MMBtu/hr) × Op. Sched. (hr/day or hr/year)

Pollutant	Daily PE			
	EF (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE (lb/day)
SO_X	0.0028	58.14	24	3.9
PM10	0.0052	58.14	24	7.3
CO	0.1121	58.14	24	156.4
VOC	0.0320	58.14	24	44.7
NH_3	0.0136	58.14	24	19.0

Pollutant	Annual PE			
	EF (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/yr)	Annual PE (lb/year)
SO_X	0.0028	58.14	8,760	1,426
PM10	0.0052	58.14	8,760	2,648
CO	0.1121	58.14	8,760	57,093
VOC	0.0320	58.14	8,760	16,298
NH_3	0.0136	58.14	8,760	6,927

Pre-Project Potential to Emit (PE1) Summary							
Permits \ Pollutants		NO_X	SO_X	PM_{10}	CO	VOC	NH_3
C-904-27	(lb/day)	109.9	3.9	7.3	156.4	44.7	19.0
	(lb/year)	40,099	1,426	2,648	57,093	16,298	6,927
C-904-28	(lb/day)	109.9	3.9	7.3	156.4	44.7	19.0
	(lb/year)	40,099	1,426	2,648	57,093	16,298	6,927
C-904-29	(lb/day)	109.9	3.9	7.3	156.4	44.7	19.0
	(lb/year)	40,099	1,426	2,648	57,093	16,298	6,927

For the aboveground storage tank and tanker truck loadout (C-904-32):
Since this is a new operation, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

For each turbine (C-904-27, -28 and -29):
As stated above, the turbines are not undergoing an NSR modification and the applicant is not proposing any change to the emission factors, heat input rating of the turbines, or hours of operation; therefore, the PE2 = PE1 for all pollutants and no additional calculations are required.

For the aboveground storage tank and tanker truck loadout (C-904-32):
Tank emissions
EPA's TANKS 4.0.d program is used to determine daily and annual VOC emissions. A custom chemical data is made for pipeline liquid using the following information:

Product: Pipeline Liquid
Liquid molecular weight: 207 g/mol
Vapor molecular weight: 50 g/mol
RVP = 2.3 (per applicant)

Per applicant, maximum filling rate will be limited to 1,000 gal/day and 12,000 gal/year. This information along with the chemical data (above) will be used in the TANKS 4.0.d program to estimate the potential emissions.

Daily emissions:
To estimate daily emissions, it is assumed that 30,000 gallons (1,000 x 30 days in July) of organic liquid is loaded into the tank in a month for July, which is considered to be the hottest month in the San Joaquin Valley. The TANKS 4.0.d results are:

PE2 (working loss) = 44.74 lb-VOC/month
PE2 (breathing loss) = 5.23 lb-VOC/month

Therefore, the working and breathing losses are:

PE2 (working loss) = (44.74 lb-VOC/month) (month/30 days)
= 1.49 lb-VOC/day

PE2 (breathing loss) = (5.23 lb-VOC/month)(month/30 days)
= 0.17 lb-VOC/day

Total PE2 = PE2 (working loss) + PE2 (breathing loss)
= 1.5 lb-VOC/day + 0.2 lb-VOC/day
= 1.7 lb-VOC/day

Annual emissions:
To estimate the annual emissions, it is assumed that 12,000 gallons of organic liquid is loaded into a tank over 12 months. The TANKS results are:

PE2 = 49 lb-VOC/year

Note that printouts from TANKS 4.0d program are included in Appendix E of this document.

Truck loadout process
Truck loading emissions:
Per applicant, the maximum loadout rates would be 1,000 gallons/day and 12,000 gallons/year. Thus,

PE2 = (0.73 lb-VOC/1,000 gal of liquid loaded)(1,000 gal/day)
= 0.7 lb-VOC/day

PE2 = (0.73 lb-VOC/1,000 gal of liquid loaded)(12,000 gal/year)
= 9 lb-VOC/year

Fugitive emissions from equipment leaks:
The potential emissions from the new components will be estimated using the following equations.

PE2 = VOC (lb/hr/source) × component count × 24 hr/day
= VOC (lb/hr/source) × component count × 24 hr/day x 5 events/year

Component Type	Source Type	VOC lb/hr/source	Component Count	PE2 lb/day	PE2 lb/year
Valves	Gas	0.01316	0	0.0	0
	Light Liquid	0.00889	0	0.0	0
	Heavy Liquid	0.00051	0	0.0	0
Connectors	Gas	0.00403	0	0.0	0
	Light Liquid	0.00403	2	0.0	1
	Heavy Liquid	0.00403	0	0.0	0
			Total:	0.0	1

Connect/disconnect hoses during truck loading:
Per applicant, the loading hose will be disconnected from the tank and tanker truck after completing the liquid transfer. So, there will be two disconnects per loading event. The maximum loadout events would be 1 event/day and 5 events/year. Thus,

PE2 = (0.019 lb-VOC/disconnect)(2 disconnect/event)(1 event/day)
= 0.04 lb-VOC/day
≈ 0.0 lb-VOC/day

PE2 = (0.019 lb-VOC/disconnect)(2 disconnect/event)(5 events/year)
= 0.3 lb-VOC/year
≈ 0 lb-VOC/year

Fugitive emissions from equipment leaks:
The potential emissions from the new components will be estimated using the following equations.

PE2 = VOC (lb/hr/source) × component count × 24 hr/day
= VOC (lb/hr/source) × component count × 8,760 hr/year

Component Type	Source Type	VOC lb/hr/source	Component Count	PE2 lb/day	PE2 lb/year
Valves	Gas	0.01316	0	0.0	0
	Light Liquid	0.00889	31	6.6	2,414
	Heavy Liquid	0.00051	0	0.0	0
Connectors	Gas	0.00403	0	0.0	0
	Light Liquid	0.00403	20	1.9	706
	Heavy Liquid	0.00403	0	0.0	0
			Total:	8.5	3,120

Summary:

Operation/Process	PE2 (lb/day)	PE2 (lb/year)
Tank emissions	1.7	49
Truck loadout process		
Truck loading	0.7	9
Loadout fugitives	0.0	1
Hose disconnects	0.0	0
Equipment leaks	8.5	3,120
Total:	10.9	3,179

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

Pursuant to District Rule 2201, the 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 (AER) that have occurred at the source, and which have not been used on-site.

As discussed above, the tank and loadout operation, unit -32, is the only unit triggering Rule 2201 requirements. This unit only emits VOCs and facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE1 calculations are not necessary.

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

Since facility emissions are already above the Offset and Major Source Thresholds for VOC emissions, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant. From the SSPE2 calculated in project C-1102936, the PSD Major Source Determination is summarized in the following table:

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	70	24	2	86	4	4
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 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 District Rule 2201.

Since the aboveground storage tank and loadout operation are considered new emissions units, BE = PE1 = 0 for all 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."

Since this facility is a major source for VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	**Project PE2 (lb/year)**	**Threshold (lb/year)**	**SB 288 Major Modification Calculation Required?**
VOC	3,179*	50,000	No

* Only the emissions from the new unit are applicable towards the SB 288 threshold since the existing turbines are not being modified per District Rule 2201 as explained above.

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Federal Major Modification determination.

Page 6 of the District's policy APR-1150 "Implementation of Rule 2201 for SB288 Major Modifications and Federal Major Modifications" states, "For purposes of determining if a new or modified emission unit is part of an Federal Major Modification, if the annual emission increase (calculated using the procedures below) for the emission unit when divided by 365 is less than or equal to 0.5 lb/day, such an increase shall be rounded to 0. New or modified emission units with emission increases that round to 0 shall not constitute a Federal Major Modification."

The determination of Federal Major Modification is based on a two-step test. For the first step, only the non-fugitive emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

For new emissions units, the increase in non-fugitive emissions is equal to the PE2 for each new unit included in this project.

Tank emissions:
The average emissions increase is determined to be 0.1 lb-VOC/day (49 lb-VOC/yr ÷ 365 days/yr), which is below the 0.5 lb/day threshold. Thus, this increase is equated to zero.

Tank loadout process:
Truck loading emissions:
The average emissions increase is determined to be 0.0 lb-VOC/day (9 lb-VOC/yr ÷ 365 days/yr), which is below the 0.5 lb/day threshold. Thus, this increase is equated to zero.

Loadout fugitives:
Page 2 of the District's policy APR-1150 "Implementation of Rule 2201 for SB288 Major Modifications and Federal Major Modifications" states that *"...fugitive emissions will be included to determine if a stationary source is major source or a modification is an SB 288 Major Modification or a Federal Major Modification, only if the stationary source is one of the specific source categories listed in 40 CFR 51.165."*.

Natural gas processing facilities are not included as one of the source categories in 40 CFR 51.165. Therefore, the fugitive emissions increase from loadout fugitive emissions will not be counted.

Connect/disconnect hoses during truck loading:
The average emissions increase is determined to be 0.0 lb-VOC/day (0 lb-VOC/yr ÷ 365 days/yr), which is below the 0.5 lb/day threshold. Thus, this increase is equated to zero.

Fugitive emissions from equipment leaks:

As explained above, fugitive emissions from this natural gas processing facility will not be counted towards the NEI for Federal Major Modification purposes . Therefore, the fugitive emissions increase from equipment leaks will not be counted.

Summary:
Since the total emissions increase does not exceed 0 lb/yr threshold for Federal Major Modification, this project is not a Federal Major Modification.

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

Note that fugitive emissions are not included here, as natural gas processing was not one of the source categories listed in 40 CFR 51.165.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units	0	0.0	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

Section 3.25 defines a "modification" as an action including at least one of the following items:

3.25.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

3.25.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. A Replacement Emissions Unit shall not be considered to be a structural change.

3.25.1.3 An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.
3.25.1.4 Addition of any new emissions unit which is subject to District permitting requirements.
3.25.1.5 A change in a permit term or condition proposed by an applicant to obtain an exemption from an applicable requirement to which the source would otherwise be subject.

The proposed changes to the existing turbines (C-904-27, -28, -29) do not fall into any of the above items; therefore, they are not considered a "modification" per Rule 2201.

However, the proposed tank and loadout operation (C-904-32) are considered a new source and are subject to this 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. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

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 an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*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 above, the applicant is proposing to operate a new aboveground storage tank and tanker truck loading operation.

Tank emissions:
The potential emissions are not greater than 2.0 lb/day for VOC emissions.

Tank loadout process:
Truck loading emissions and Connect/disconnect hoses during truck loading:
For each emissions unit, the potential emissions are not greater than 2.0 lb/day for VOC emissions. Therefore, these operations did not trigger BACT for VOC emissions.

Fugitive emissions from equipment leaks:
The potential emissions from each emissions units (valve or connector) are not greater than 2.0 lb/day for VOC emissions.

Since no emissions unit has emissions greater than 2.0 lbs/day, BACT is not triggered for new emissions units.

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. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 or Federal Major Modification. Therefore BACT is not triggered for any pollutant.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The applicant has conceded that the facility has VOC emissions exceeding the offset threshold.

2. Quantity of Offsets Required

As seen above, the facility has conceded that the VOC emissions exceed the offset threshold. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC 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) = (Σ[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 = PE1 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 = HAE

The facility is proposing to install a new operation; therefore BE = 0. Also, there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

PE2 (VOC) = 3,179 lb/year
BE (VOC) = 0 lb/year
ICCE = 0 lb/year

The project is not a Federal Major Modification; however, since the original banking project originated more than 15 miles from this stationary source, the distance offset ratio of 1.5:1 will be used. The amount of VOC ERCs that need to be withdrawn is:

Offsets Required (lb/year) = ([3,179 – 0] + 0) x 1.5
= 3,179 x 1.5
= 4,769 lb VOC/year

Calculating the appropriate quarterly emissions to be offset is as follows:

Quarterly offsets required (lb/qtr) = (4,769 lb NO_X/year) ÷ (4 quarters/year)
= 1,192.25 lb/qtr

The applicant has stated that the facility plans to use ERC certificate S-4742-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #S-4742-1	1,200	1,200	1,200	1,200

As seen above, the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,192 lb, 2nd quarter - 1,192 lb, 3rd quarter - 1,192 lb, and fourth quarter - 1,193 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]

- ERC Certificate Number S-4742-1 (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]

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 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.
e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 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 Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE 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

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
VOC	>20,000	>20,000	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	**SSPE2 (lb/year)**	**SSPE1 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
VOC	>20,000	>20,000	3,179	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.

e. Title V Significant Permit Modification

As shown in the discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project for being a Title V significant modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and Environmental Protection Agency (EPA) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATCs in this project.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. 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.

Proposed Rule 2201 (DEL) Conditions:

For each turbine (C-904-27, -28 and -29):

Since there are no changes to the maximum daily emissions, process rate, fuel use or emission factors, the existing DEL conditions from the current permits will be carried over to the proposed ATCs issued in this project.

For the aboveground storage tank and tanker truck loadout (C-904-32):

Tank emissions:

- The Reid vapor pressure (RVP) of the organic liquid stored in the tank shall not exceed 2.3 psia. [District Rules 2201]
- The organic liquid transferred into the tank shall not exceed either of the following limits: 1,000 gallons/day or 12,000 gallons/year (based on a 12-month rolling basis). [District Rule 2201]
- VOC emissions from transferring and storage of organic liquid in the tank shall not exceed either of the following limits: 1.7 lb/day or 49 lb/year (based on a 12-month rolling basis). [District Rule 2201]

Tank loadout process:

Truck loading emissions:

- VOC emissions from tanker truck loading operation shall not exceed 0.73 lb/1,000 gallons of pipeline condensate liquid loaded. [District Rule 2201]
- The organic liquid loading into tanker truck(s) shall not exceed either of the following limits: 1,000 gallons/day or 12,000 gallons/yr (12-month rolling basis). [District Rules 2201 and 4624]

Connect/disconnect hoses during truck loading:

- The organic liquid drainage from disconnections associated with the tanker truck loadout equipment shall not exceed 10 mL per disconnect. [District Rule 2201]
- The total number of disconnects shall not exceed either of the following limits: 2 disconnects/day or 10 disconnects/year (based on a 12-month rolling basis). [District Rule 2201]

Fugitive emissions from equipment leaks:

- Fugitive VOC emissions from components (i.e., valves and connectors located within 60 feet of piping to the D-322 tank) used to route the organic liquid into the tank shall not exceed either of the following limits: 8.5 lb/day or 3,121 lb/year[2]. [District Rule 2201]
- Fugitive VOC emissions shall be calculated using the EPA "Protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017 (November 1995), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201]
- Except as otherwise provided in this permit, all piping, valves, and fittings under this permit shall be constructed and maintained in a leak-free condition. Leak free condition is defined as a condition without a gas leak or a liquid leak. [District Rule 2201]
- Gas leak is a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with the test method in Section 6.4.8 of Rule 4623. [District Rule 2201]
- Liquid Leak is dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 2201]
- Upon detection of a leaking component covered under this permit, the operator shall affix to that component a weatherproof readily visible tag with the date and time of leak detection, the date and time of leak measurement, and for gas leaks, the leak concentration in ppmv. The tag shall remain affixed to the component until the component is repaired or replaced. [District Rule 2201]
- All equipment that are found leaking shall be repaired or replaced within 72 hours of detection. The repaired or replaced equipment must be re-inspected. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

For the existing turbines, C-904-27-9, -28-9, -29-9, there will be no additional source testing and the existing source test conditions from the current permits will be carried over to the proposed ATCs issued in this project.

[2] 3,121 lb-VOC/year = 1 lb-VOC/year from loadout components + 3,120 lb-VOC/year from tank components

For the new permit unit, C-904-32-0, pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

For the existing permit units C-904-27-9, -28-9, -29-9:

As discussed above, these units are not being modified per District Rule 2201; however, the monitoring requirement will be discussed in further detail under the compliance section of District Rule 4703 and 40 CFR Part 64 below.

For the new permit unit C-904-32-0:

Tank emissions:
PG&E will be required to determine RVP and then TVP at the actual temperature of the liquid within 60-days of initial startup and at least once every 24 months thereafter. This testing is consistent with the applicable requirements from similar tanks subject to District Rule 4623 to ensure continued compliance.

- The owner or operator shall determine TVP within 60 days of initial startup and at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in the tank. The records of TVP testing shall be submitted within 45 days after the date of testing. The records shall include the tank identification number, permit number, type of stored organic liquid, TVP of the stored organic liquid, test methods used, and a copy of the test results. [District Rule 2201]
- TVP shall be determined at actual storage temperature of the organic liquid in the tank. [District Rule 2201]
- TVP of the organic liquid shall be determined by measuring the RVP using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance with the procedures in Appendix B. Appendix B is an excerpt from the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989. Should the permittee want to use different methodology, then that methodology should be first approved by the District and or the EPA. [District Rule 2201]

Tank loadout process:
Truck loading emissions:
The truck loading emissions are estimated using EPA's AP-42 calculation methodology. Therefore, no initial or periodic testing is required.

Connect/disconnect hoses during truck loading:
PG&E will also be required to measure the average organic liquid drainage (mL) from three consecutive disconnects within 60-days of initial startup. This measurement will verify compliance with the 10 mL drainage proposed by PG&E. Periodic testing is not

required for this process since the annual emissions are insignificant from this process and the liquid drainage from the disconnects is not expected to change over time.

- The operator shall determine an average organic liquid drainage for three consecutive disconnects to demonstrate compliance with the permitted organic liquid drainage limit of 10 mL per disconnect. The drainage shall be determined within 60 days of initial startup of the tanker truck transfer operation and the associated records shall be submitted within 45 days after the testing. [District Rule 2201]

Equipment leak emissions (valves, connectors, etc.):
The potential emissions from valves and connectors are determined using generally accepted emission factors. Therefore, initial and annual monitoring is not required.

3. Recordkeeping

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

For the existing permit units C-904-27-9, -28-9, -29-9, the current recordkeeping conditions will be carried over to the proposed ATCs.

For the new permit unit C-904-32-0:

Tank emissions:
PG&E will be required to keep records of liquid transfer rate (gallons/day, gallons/month, gallons/year), RVP, TVP and the temperature of the liquid.

Tank loadout process:
Truck loading emissions:
PG&E will be required to keep records of the liquid loaded (gallons/day, gallons/month, gallons/year) into the tanker trucks.

Connect/disconnect hoses during truck loading:
PG&E will be required to keep records of the number of disconnects (disconnects/day, disconnects/year).

Equipment leak emissions (valves, connectors, etc.):
PG&E will be required to keep records of the date, name of component and its location, and measured ppmv value, name of the operator and the company conducting the leak inspection.

Each record is required to be kept for a periodic of at least five years from the date such record is entered in a log book.

- The owner or operator shall keep records of the date, name of the organic liquid stored, organic liquid RVP, TVP and its storage temperature. [District Rules 2201 and 4623]
- The owner or operator shall keep records of: a.) date, b.) amount of organic liquid transferred into the tank (gallons/day and gallons/month), and c.) cumulative total amount of organic liquid transferred into the tank in a consecutive 12-month rolling period. [District Rule 2201]
- The owner or operator shall keep records of: a.) date, b.) amount of organic liquid loaded into a tanker truck (gallons/day and gallons/month), and c.) cumulative total amount of organic liquid loaded into a tanker truck in a consecutive 12-month rolling period. [District Rules 2201 and 4624]
- The owner or operator shall keep records of: a.) date, b.) number of disconnects (disconnects/day), and c.) cumulative total number of disconnects in a consecutive 12-month rolling period. [District Rule 2201]
- For the components covered under this permit, the owner or operator shall keep records of the type of component, number of components, emission factors, total daily (lb/day) and annual VOC emissions (lb/year). [District Rule 2201]
- For each component inspected, the owner or operator shall keep records of the date, name of component, its location, measured ppmv value, the name of the operator and the company conducting the leak inspection. [District Rule 2201]
- All records shall be retained for a minimum of five years and shall be made available to the District, ARB, or EPA during normal business hours and submitted upon request. [District Rules 2201 and 4624]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. 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 Section VIII, Rule 2520 below, this project constitutes a Title I modification, therefore this requirement is applicable. PG&E's compliance certification is included in Appendix F.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a modify the monitoring conditions which requires no physical changes and the permitting of an existing tank (for the purposes of this project, it is considered a new emissions unit).

Since the project will provide does not result in any physical modifications, 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 2410 Prevention of Significant Deterioration

As shown in Section VII. C. 9. above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

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

Minor permit modifications do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions. The monitoring of CO emissions will be removed and the reporting of an exceedance of NOx emissions will only be required after 8 operating hours instead of the current requirement of 1 hour, which is a relaxation in monitoring and reporting conditions. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

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. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60, Subpart A, Section 14, defines the meaning of modification to which the the standards are applicable. §60.14, paragraph (a) states *"Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere".*

The existing turbines are not being modified as defined above; therefore, the requirements of these sections do not apply to these units.

<u>40 CFR 60 – Subpart GG - Standards of Performance for Stationary Gas Turbines</u>
However, one of the proposed modifications to a monitoring requirement is for a condition that references 40 CFR Part 60 Subpart GG §60.334(a), which states, "Except as provided in paragraph (b) of this section, the owner or operator of any stationary gas turbine subject to the provisions of this subpart and using water or steam injection to control NO_X emissions shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine."

Since these turbines do not use water or steam injection to control NO_X emissions, the requirements of Section 60.334(a) through 60.334(g) are not applicable, the references will be removed from the permit and the proposed modifications to the monitoring conditions will be discussed further in Section 6.2 of District Rule 4703 below.

As discussed above, the turbines are not being modified as defined in §60.14, paragraph (a); therefore, no further discussion is required.

40 CFR 60 – Subpart KKKK - Standards of Performance for Stationary Combustion Turbines
§60.4305(a): Applicability

40 CFR Part 60 Subpart KKKK applies to all stationary gas turbines rated at greater than or equal to 10 MMBtu/hr that commence construction, modification, or reconstruction after February 18, 2005. The proposed gas turbines involved in this project have a rating of 58.14 MMBtu/hr; however, they were installed before February 18, 2005.

As discussed above, PG&E is only proposing minor changes to the monitoring and reporting requirements on each of these turbines. Therefore, no newly constructed or reconstructed units are proposed in this project, nor are the units being modified (as defined above). Therefore, the requirements of this subpart are not applicable to these turbines and no further discussion is requried

40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984
§60.110b: Applicability

This subpart applies to each storage vessel with a capacity greater than 75 m^3 (19,813 gal) that is used to store a volatile organic liquid for which construction, reconstruction, or modification is commenced after July 23, 1984. A storage vessel may be exempt from the requirements of this subpart as long as it qualifies §60.110b(b) or §60.110b(d), or meet alternate means of compliance in §60.110b(e).

The proposed operation contains a 1,000 gallon tank. Since the capacity of this tank is below the threshold of 19,813 gallons (as mentioned in the above paragraph), this tank is not subject to the requirements of this subpart and no further discussion is required.

40 CFR Part 60 Subpart OOOO—Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution
§60.5365: Applicability

This subpart applies to the owner or operator of one or more of the onshore affected facilities listed in paragraphs (a) through (g) of this section for which you commence construction, modification or reconstruction after August 23, 2011.

§60.5365(e) states each storage vessel affected facility, which is a single storage vessel located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment, and has the potential for VOC emissions equal

to or greater than 6 tpy as determined according to this section by October 15, 2013 for Group 1 storage vessels and by April 15, 2014, or 30 days after startup (whichever is later) for Group 2 storage vessels, except as provided in paragraphs (e)(1) through (4) of this section. The potential for VOC emissions must be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline specified in this section. The determination may take into account requirements under a legally and practically enforceable limit in an operating permit or other requirement established under a Federal, State, local or tribal authority.

The proposed operations contain a tank that meets the definition of "storage vessel" under this subpart. However, the potential VOC emissions from the tank are below the threshold of 6 tons/year (as mentioned in the above paragraph). Therefore, this tank is not subject to the requirements of this subpart and no further discussion is required.

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

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, there are no applicable requirements for a gas turbine operated at a non-major HAP source. PG&E is not a major HAP source; therefore, no further discussion is required.

<u>40 CFR Part 63 Subpart HH—National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities</u>

§63.760: Applicability and designation of affected source

(a) This subpart applies to the owners and operators of the emission points, specified in paragraph (b) of this section that are located at oil and natural gas production facilities that meet the specified criteria in paragraphs (a)(1) and either (a)(2) or (a)(3) of this section.

(1) Facilities that are major or area sources of hazardous air pollutants (HAP) as defined in §63.761. Emissions for major source determination purposes can be estimated using the maximum natural gas or hydrocarbon liquid throughput, as appropriate, calculated in paragraphs (a)(1)(i) through (iii) of this section. As an alternative to calculating the maximum natural gas or hydrocarbon liquid throughput, the owner or operator of a new or existing source may use the facility's design maximum natural gas or hydrocarbon liquid throughput to estimate the maximum potential emissions. Other means to determine the facility's major source status are allowed, provided the information is documented and recorded to the Administrator's satisfaction in accordance with §63.10(b)(3). A facility that is determined to be an area source, but subsequently increases its emissions or its potential to emit above the major source levels, and becomes a major source, must comply thereafter with all provisions of this subpart applicable to a major source starting on the applicable compliance date specified in paragraph (f) of this section. Nothing in this paragraph is intended to preclude a source from limiting its potential to emit through other appropriate mechanisms that may be available through the permitting authority.

(2) Facilities that process, upgrade, or store hydrocarbon liquids.

(3) Facilities that process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. For the purposes of this subpart, natural gas enters the natural gas transmission and storage source category after the natural gas processing plant, when present. If no natural gas processing plant is present, natural gas enters the natural gas transmission and storage source category after the point of custody transfer.

PG&E is a non-major HAP source. Therefore, this subpart does not apply to this facility.

40 CFR Part 63 Subpart HHH—National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities

§63.1270: Applicability
§63.1270(a) states that this subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in §63.1271.

Section 63.1270(b) states that the affected source is each new and existing glycol dehydration unit specified in paragraphs (b)(1) through (3) of this section.

PG&E is not a major source of HAP emissions. Further, this project does not involve glycol dehydration unit. Therefore, they are not subject to the requirements in this subpart.

Rule 4101 Visible Emissions

Rule 4101 states that 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). As the turbines are fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, based on past inspections of the facility continued compliance is expected. Compliance with the requirements of this rule is assured by the following condition, currently located on the facility wide permit (PTO C-904-0-3) for this facility:

- No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (11/15/01). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)]

Rule 4102 Nuisance

Rule 4102 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 and the following condition will be included on the permits.

- No air contaminant shall be released into the atmosphere, which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix C), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	**Cancer Risk**	**T-BACT Required**
C-904-27, -28, -29	N/A	No
C-904-32	0.0905 per million	No

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 20 in a million). As outlined by the HRA Summary in Appendix C of this report, the emissions increases for this project was determined to be less than significant.

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.

For the turbines:

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor: 0.0052 lb-PM_{10}/MMBtu

Percentage of PM as PM_{10} in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 15%

$$\text{Excess Air Correction to F Factor} = \frac{20.9}{(20.9 - 15.0)} = 3.54$$

$$GL = \left(\frac{0.0052\ lb - PM}{MMBtu} \times \frac{7{,}000\ grain}{lb - PM} \right) / \left(\frac{8{,}578\ ft^3}{MMBtu} \times 3.54 \right)$$

$$GL = 0.0012\ grain/dscf < 0.1\ grain/dscf$$

Therefore, compliance with District Rule 4201 requirements is expected and a permit condition will be listed on the permits as follows:

- Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

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".

These turbines primarily produce power mechanically, i.e. the products of combustion pass across the power turbine blades which cause each turbine shaft to rotate. The turbine shaft is coupled to a compressor which is rotated to pump and compress natural gas in a pipeline. Because the turbines primarily produce power by mechanical means, they do not meet the definition of fuel burning equipment. Therefore, Rule 4301 does not apply to the affected equipment and no further discussion is required.

Rule 4623 Storage of Organic Liquids

Section 2.0 - Applicability

This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.

The proposed tank can hold up to 1,000 gallons of organic liquid. Therefore, this tank is not subject to the requirements of this rule and no further discussion is required.

Rule 4624 Transfer of Organic Liquid

Section 4.1 of this rule states that the requirements of Section 5.0 of this rule shall not apply to organic liquid transfer facilities which transfer less than 4,000 gallons of organic liquids in any one day. The operator shall meet the applicable recordkeeping requirements of Section 6.1.1.

Section 6.1.1 states that an operator claiming exemption under Section 4.1 shall keep records of daily liquid throughput.

PG&E will be limited to transfer 1,000 gal/day of liquid condensate into a tanker truck. They will be required to keep record of daily loadout rate. The following conditions will be included in the permit:

- The organic liquid loading into tanker truck(s) shall not exceed either of the following limits: 1,000 gallons/day or 12,000 gallons/yr (12-month rolling basis). [District Rules 2201 and 4624]
- The owner or operator shall keep records of: a.) date, b.) amount of organic liquid loaded into a tanker truck (gallons/day), c.) amount of organic liquid loaded into a tanker truck (gallons/month), and d.) cumulative total amount of organic liquid loaded into a tanker truck in a consecutive 12-month rolling period. [District Rules 2201 and 4624]

Rule 4703 Stationary Gas Turbines

Rule 4703 is applicable to stationary gas turbines with a rating greater than 0.3 megawatts. The facility operates three gas turbines that power natural gas pipeline compressors. The equivalent electrical rating of each of the turbines is greater than 0.3 megawatts. Therefore the requirements of this rule apply to the turbines.

Section 5.1 – NO_X Emission Requirements:

Section 5.1 of this rule requires emissions concentrations to be measured in accordance with test methods in Section 6.4 or if continuous emission monitors are used, all applicable requirements of 40 CFR Part 60.

The following conditions will be included in the permit:

- The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, and fuel consumption. [District Rule 4703]

PG&E has amended their original proposal via email on March 2, 2017 to eliminate this request from this project; therefore, the existing condition, without modification, will be carried over to the proposed ATCs.

Additionally, PG&E proposes the following modification to an existing condition:

- The permittee shall perform NOx and O2 accuracy drift checks of the in-stack monitoring system**, when the unit is operating,** at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64]

This proposed clarifying language is in accordance with District practice to not require a unit to startup solely to make a compliance demonstration similarly as is allowed in District Policy

SSP-1105 on page 4 which states "...the units need not be started solely to perform monitoring required by this policy." Therefore, the proposed changes will be incorporated in the proposed ATCs issued in this project.

Section 5.1.1 (Tier I) of this rule limits the NO_X emissions from stationary gas turbine systems rated at greater than 0.3 MW but less than 10 MW permitted to operate more than 877 hours per year to 42 ppmv @ 15% O_2. Each turbine is currently limited by permit condition to have steady state NO_X emissions of 8 ppmv @ 15% O_2, therefore compliance with the requirements of this section is expected.

Section 5.1.2 (Tier 2) of this rule limits the NO_X emissions from gas fired turbines rated at less than 10 MW, for which a dry low NO_X system is commercially available for the specific unit, to 25 ppmv @ 15% O_2. As discussed above, each turbine is operating with a steady state NO_X emission limit of 8 ppmv @ 15% O_2; therefore, compliance with this section is expected.

Section 5.1.3 (Tier 3) of this rule limits the NO_X emission from gas fired turbines rated between 3 MW and 10 MW, used to transport gases or liquids in a pipeline, to 8 ppmv @ 15% O_2 during steady state operation and 12 ppmv @ 15% O_2 during non-steady state operation. As discussed above, the proposed turbines are currently limited by permit condition to have steady state NO_X emissions of 8 ppmv @ 15% O_2; therefore, compliance with the requirements of this section is expected.

The following condition will ensure continued compliance with the requirements of section 5.1:

- Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, steady state emission rates shall not exceed any of the following emission limits: 8 ppmv NO_X (as NO_2) @ 15% O_2, 0.00280 lb SO_X/MMBtu, 0.3 lb PM_{10}/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. All emission rates are three hour rolling averages. [District Rules 2201 and 4703]

Section 5.2 – CO Emission Requirements:

Per Table 5-3 of section 5.2, the CO emissions concentration from the proposed turbine must be less than 200 ppmvd @ 15% O_2. Rule 4703 does not include a specific averaging period requirement for demonstrating compliance with the CO emission limit. However, District practice is to have an applicant demonstrate compliance with the CO emissions on a turbine with three hour averaging periods. Therefore, compliance with the CO emission limit shall be demonstrated by an average over a three hour period.

The proposed turbines being modified within this project are each limited by permit condition to have CO emission of no more than 50 ppmv @ 15% O_2. Therefore, the proposed turbines will be operating the turbine in compliance with the CO emission requirements of this rule. The previous condition will ensure continued compliance with the requirements of section 5.2

Section 5.3 – Startup and Shutdown Requirements:

This section states that the emission limit requirements of Sections 5.1.1, 5.1.2 or 5.2 shall not apply during startup, shutdown, or a reduced load period provided an operator complies with the requirements specified below:

- The duration of each startup or each shutdown shall not exceed two hours, and the duration of each reduced load period shall not exceed one hour, except as provided below.
- The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during startup, shutdown, or a reduced load period.
- An operator may submit an application to allow more than two hours for each startup or each shutdown or more than one hour for each reduced load period provided the operator meets all of the conditions specified in the rule.

PG&E currently has startup and shutdown provisions incorporated into the operating permit for these turbines. PG&E's current conditions were proposed to be modified as follows (the proposed additions are marked in **bold and underline** and the deletions are ~~struck out~~):

- During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NO_X @ 15% O_2 or 0.6203 lb-NO_X/MMBtu, based on a per event average. [District Rules 2201 and 4703]

- Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703]

- The total duration of startup and shutdown shall not exceed two hours per day. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703]

- The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown**; however, during such periods, emissions limits as specified in Condition 5 shall not apply**. [District Rule 4703]

PG&E has amended their original proposal via email on March 2, 2017 to eliminate this request from this project and instead use the following condition:

- The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown**; however, during such periods, the steady state emission factors stated in this permit shall not apply**. [District Rule 4703]

Section 6.2 - Monitoring and Record Keeping:

Section 6.2.1 requires the owner to operate to maintain continuous emissions monitoring equipment for NO_X and oxygen, or install and maintain APCO-approved alternate monitoring consisting of one or more of the following:

- Periodic NOx emission concentrations,
- Turbine exhaust oxygen concentration,
- Air-to-fuel ratio,
- Flow rate of reducing agents added to turbine exhaust,
- Catalyst inlet and exhaust temperature,
- Catalyst inlet and exhaust oxygen concentration,

PG&E currently monitors the NO_X and O_2 concentrations with their existing in-stack monitoring system. These turbines are also currently required to measure CO concentrations periodically with a District approved portable analyzer. Since these turbines are remotely operated, PG&E is proposing to remove the CO monitoring requirement with a portable analyzer within this project as it is not required by Section 6.2 of this Rule nor by 40 CFR Part 64 as discussed in the 40 CFR Part 64 Section below and allow for the notification period after which an exceedance exists to be increased to eight (8) operating hours to be consistent with other permitted turbines within the District.

In addition, PG&E is not proposing to change the periodic determinations of the ammonia slip values using a District approved calculation methodology. The calculation methodology is consistent with the typical District practice allowed at other facilities that operate turbines equipped with SCR.

The following conditions will be included on the permit to ensure continued compliance with the monitoring requirements of this section (the proposed additions are marked in **bold and underline** and the deletions are ~~struck out~~):

- The permittee shall monitor and record the stack concentration of NO_X and O_2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64]

- If the monitored NO_X concentrations, as measured by the in-stack monitoring system, ~~or the monitored CO concentrations, as measured by the portable analyzer,~~ exceed the permitted emission limits, the permittee shall return the NO_X ~~or CO~~ concentrations to the permitted emission limits as soon as possible but no longer than ~~one (1)~~ **eight (8)** operating hour**s** after detection. If the permittee's **monitoring system** ~~analyzer~~ readings continue to exceed the permitted emissions limits after ~~one (1)~~ **eight (8)** operating hour**s**, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of

a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64]

- All in-stack monitoring system ~~and portable analyzer~~ 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 2201 and 4703 and 40 CFR Part 64]

- Compliance with the ammonia slip emission limit shall be demonstrated at least once per day, concurrently with the in-stack analyzer NO_X concentration readings, utilizing the following calculation: (ppmvd @ 15% O_2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO_X concentration ppmvd @ 15% O_2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rules 2201 and 4102]

- The permittee shall maintain records of: (1) the date and time of NO_X and O_2 measurements, (2) the O_2 concentration in percent by volume and the measured NO_X concentrations corrected to 15% O_2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) a description of any corrective action taken to maintain the emissions within the acceptable range, and (6) the calculated ammonia slip values and each parameter used to perform the calculation. [District Rules 4703 and 40 CFR Part 64]

Section 6.2.2 specifies monitoring requirements for turbines without exhaust-gas NO_X control devices. The turbine in this project is equipped with an SCR system that is designed to control NO_X emissions. Therefore, the requirements of this section are not applicable and no further discussion is required.

Section 6.2.3 requires that for units 10 MW and greater that operated an average of more than 4,000 hours per year over the last three years before August 18, 1994, the owner or operator shall monitor the exhaust gas NO_X emissions. As discussed above, this turbine was installed in 2001. Therefore, they were not in operation prior to August 18, 1994 and the requirements of this section are not applicable. No further discussion is required.

Section 6.2.4 requires the facility to maintain all records for a period of five years from the date of data entry and shall make such records available to the APCO upon request. Starwood Power will be required to maintain all records for at least five years and make them available to the APCO upon request. Therefore, the proposed turbines will be operating in compliance with the five year recordkeeping requirements of this rule. The following condition will ensure continued compliance with the requirements of this section:

- All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703]

Section 6.2.5 requires that the owner or operator shall submit to the APCO, before issuance of the Permit to Operate, information correlating the control system operating to the associated measure NOx output. This information may be used by the APCO to determine compliance when there is no continuous emission monitoring system for NOx available or when the continuous emissions monitoring system is not operating properly.

PG&E received approval for the installation of an SCR system on these turbines under project C-1093441. The information correlating the control system operating parameters to the associated measured NOx output have already been provided under that project. No changes to how the control system operates are expected as a part of this project. Therefore, the requirements of this section are not applicable and no further discussion is required.

Section 6.2.6 requires the facility to maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local startup and stop time, length and reason for reduced load periods, total hours of operation, and the type and quantity of fuel used. PG&E will be required to maintain records of each item listed above. Therefore, the proposed turbines will be operating in compliance with the recordkeeping requirements of this rule. The following conditions will ensure continued compliance with the requirements of this section:

- The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 1080, 2201 and 4703 and 40 CFR 60.8(d)]

- The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703]

Section 6.2.7 establishes recordkeeping requirements for units that are exempt pursuant to the requirements of Section 4.2. The turbine within this project is subject to the requirements of this rule. Therefore, the requirements of this section are not applicable and no further discussion is required.

Section 6.2.8 requires owners or operators performing startups or shutdowns to keep records of the duration of each startup and shutdown. As discussed in Section 6.2.6 above, PG&E is required, by permit condition, to maintain records of the date, time and duration or each startup and shutdown. Therefore, the turbine is operating in compliance with the recordkeeping requirements of this section.

Sections 6.3 and 6.4 - Compliance Testing:

Section 6.3.1 states that the owner or operator of any stationary gas turbine system subject to the provisions of Section 5.0 of this rule shall provide source test information annually regarding the exhaust gas NO_X and CO concentrations. The turbines operated by Starwood Power are subject to the provisions of Section 5.0 of this rule. Therefore, each turbine is required to test annually to demonstrate compliance with the exhaust gas NO_X and CO concentrations. The following condition will ensure continued compliance with the requirements of this section:

- Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. To ensure accuracy of the ammonia slip calculation specified within this permit, the NOx emission concentration at the SCR inlet shall be determined at the facility's typical operating load during annual compliance testing by measuring NOx emissions for a minimum of 10 minutes or until NOx concentration has stabilized. [District Rules 2201, 4102, and 4703, and 40 CFR 60.335(b)]

Section 6.3.2 specifies source testing requirements for units operating less than 877 hours per year. As discussed above, this turbine is allowed to operate up to 8,760 hours per year. Therefore, the requirements of this section are not applicable and no further discussion is required.

Section 6.3.3 specifies source testing requirements for units that are equipped with intermittently operated auxiliary burners. PG&E is not currently allowed to operate and is not proposing to operate this turbine with auxiliary burners. Therefore, the requirements of this section are not applicable and no further discussion is required.

Section 6.4 states that the facility must demonstrate compliance annually with the NOx and CO emission limits using the following test methods, unless otherwise approved by the APCO and EPA:

- Oxides of nitrogen emissions for compliance tests shall be determined by using EPA Method 7E or EPA Method 20.

- Carbon monoxide emissions for compliance tests shall be determined by using EPA Test Methods 10 or 10B.

- Oxygen content of the exhaust gas shall be determined by using EPA Methods 3, 3A, or 20.

- HHV and LHV of gaseous fuels shall be determined by using ASTM D3588-91, ASTM 1826-88, or ASTM 1945-81.

The following condition will ensure continued compliance with the test method requirements of this section:

- The following test methods shall be used: NO_X - EPA Method 7E or 20; CO - EPA Method 10 or 10B; ammonia - BAAQMD ST-1B; and O_2 - EPA Method 3, 3A, or 20. Alternative test

methods may also be used to address the source testing requirements of this permit if approved by the District and EPA. [District Rules 1081 and 4703 and 40 CFR 60.335(a)]

Conclusion:

Conditions will be incorporated into these permits in order to ensure compliance with each applicable section of this rule. Therefore, compliance with the requirements of Rule 4703 is expected and no further discussion is required.

Rule 4801 Sulfur Compounds

Per Section 3.1, 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:

The sulfur of the natural gas fuel is 1.0 gr/100 dscf.

The ratio of the volume of the SO_x exhaust to the entire exhaust for one MMBtu of fuel combusted is:

Volume of SO_x: $V = \frac{n \cdot R \cdot T}{P}$

Where:

- n = number of moles of SO_x produced per MMBtu of fuel.
- Weight of SO_x as SO_2 is 64 lb/(lb-mol)
- $n = \frac{0.00285\ lb}{MMBtu} \times \frac{1\ (lb-mol)}{64\ lb} = 0.000045\ (lb-mol)$
- $R = \frac{0.7302\ ft^3 \cdot atm}{(lb-mol)°R}$
- T = 500 °R
- P = 1 atm

Thus, volume of SO_x per MMBtu is:

$$V = \frac{n \cdot R \cdot T}{P}$$

$$V = \frac{0.000045\ (lb-mol) \cdot \frac{0.7302\ ft^3 \cdot atm}{(lb-mol)\ °R} \cdot 500\ °R}{1\ atm}$$

$$V = 0.016\ ft^3$$

Since the total volume of exhaust per MMBtu is 8,578 scf, the ratio of SO_x volume to exhaust volume is

$$= \frac{0.016}{8{,}578} = 0.0000019 = 1.9\ ppmv = 0.00019\%\ by\ volume$$

1.9 ppmv ≤ 2000 ppmv, therefore the turbines are expected to comply with Rule 4801.

Compliance Assurance Monitoring - 40 CFR Part 64

§64.2 – Applicability

This section requires Compliance Assurance Monitoring (CAM) for units that meet the following three criteria:

1) the unit must have an emission limit for the pollutant;
2) the unit must have add-on controls for the pollutant; these are devices such as flue gas recirculation (FGR), baghouses, and catalytic oxidizers; and
3) the unit must have a pre-control potential to emit of greater than the major source thresholds.

Pollutant	Major Source Threshold (lb/year)
VOC	20,000
NO_X	20,000
CO	200,000
PM_{10}	140,000
SO_X	140,000

C-904-27-9, -28-9, -29-9:

Each of the permits for the turbines contains emission limits for NO_X, CO, VOC, PM_{10} and SO_X emissions. However, these turbines are not equipped with any add-on control devices for CO, VOC, PM_{10} or SO_X emissions. Therefore, the CAM requirements of 40 CFR 64 are not applicable for these pollutants and no further discussion is required.

Each turbine is equipped with a selective catalytic reduction system to control NO_X emissions. Typically the District assumes that an SCR system will achieve 90% control for the NO_X emissions generated in a natural gas fired turbine. Therefore, the controlled and uncontrolled NO_X emission rates from each turbine can be determined using the emission factor and annual heat input limit on the current permit and the control efficiency of the SCR system, as shown below:

NO_X Emissions:

Emission Factor = 0.0295 lb/MMBtu
Heat Input Rating = 58.14 MMBtu/hr
SCR Control Efficiency = 90%

Annual Controlled Potential to Emit (PE) = 0.0295 lb/MMBtu x 58.14 MMBtu/hour x 8,760 hours/year

Annual Controlled PE = 15,025 lb-NO_X/year

Annual Uncontrolled PE = [(0.0295 lb/MMBtu x 58.14 MMBtu/hour x 8,760 hours/year) / (1 – 0.90)]

Annual Uncontrolled PE = 150,245 lb-NO_X/year

As shown above, the uncontrolled PE for NO_X emissions is greater than the major source threshold. Therefore, these turbines are subject to the requirements of 40 CFR 64.

C-904-32-0:

The permit for the new pipeline liquid transfer, storage and loadout operation contains emission limits for VOC emissions only. However, this operation is not equipped with any add-on control devices for VOC emissions. Therefore, the CAM requirements of 40 CFR 64 are not applicable and no further discussion is required.

The following discussions for CAM will only be applicable to C-904-27-9, -28-9 and -29-9.

§64.3 - Monitoring Design Criteria

This section specifies the design criteria for the CAM system. Paragraph (a) (General criteria) requires that the CAM system be designed to obtain data for one or more appropriate indicators of emission control system performance and requires the owner to establish appropriate ranges or designated conditions for the selected indicators such that operation within the ranges provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions.

As shown above, the natural gas fired turbine is served by a selective catalytic reduction (SCR) system. A Selective Catalytic Reduction (SCR) system operates as an external control device where flue gases and a reagent, in this case ammonia, are passed through an appropriate catalyst. Ammonia, will be injected upstream of the catalyst where it reacts and reduces NO_X, over the catalyst bed, to form elemental nitrogen and other by-products.

PG&E has chosen to satisfy CAM requirements by utilizing an in-stack NO_X and O_2 monitoring system upstream of the stack sampling locations used during source testing. The in-stack monitoring system will take NO_X and O_2 measurements at least once each day that the turbine operates. The post-project controlled potential to emit for NO_X for each turbine is 15,025 pounds per year[3], which is below the major source threshold. Therefore, monitoring of NO_X emissions concentrations once per day is sufficient to satisfy the requirements of this subpart.

Paragraph (b) *(Performance criteria)* requires the owner or operator to establish and maintain the following:

- Specifications to ensure that representative data are collected

In addition to the in-stack NO_X and O_2 analyzers, a computerized central processing unit (CPU) is utilized where the NO_X and O_2 analyzer readings are downloaded and saved for archiving. Therefore, sufficient data will be collected for each turbine to ensure it is operating in compliance to justify the once daily readings as representative normal operating conditions.

- Verification procedures for startup of new monitoring equipment
- Quality assurance and control practices to ensure continuing validity of data

Periodic NO_X and ammonia slip source testing is required at least once every 12 months and the facility will perform additional ammonia slip calculations at least once each day based on monitored parameters from the turbine system. These periodic direct emission measurements and calculations ensure that the turbine and the SCR system are operating properly. In addition, the turbine is serviced and/or tuned in accordance with the manufacturer's recommendations.

- Data collection frequency and procedures

PG&E will be required to measure and record the NO_X and O_2 concentrations from each turbine at least once per day. These records shall be maintained by the facility and shall be made available upon request.

Paragraph (c) *(Evaluation factors)* requires the owner or operator to take into account site specific factors in the design of the CAM system.

> (c) Evaluation factors. In designing monitoring to meet the requirements of this section, the owner or operator shall take into account site-specific factors including the applicability of existing monitoring equipment and procedures, the ability of the monitoring to account for process and control device operational variability, the reliability and latitude built into the control technology, and the level of actual emissions relative to the compliance limitation.

[3] 58.14 MMBtu/hr x 0.0295 lb-NO_X/MMBtu x 8,760 hours/day = 15,025 lb-NOx/year

No additional site specific information will need to be accounted for in the design of the proposed CAM system.

(d) Special criteria for the use of continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS) or predictive emission monitoring system (PEMS)

A CEMS, COMS, or PEMS is not necessary or required for the subject emission units. Therefore, the requirements of this section are not applicable and no further discussion is required.

The following conditions will be included on the ATCs to ensure compliance with the requirements of this section (the proposed additions are marked in **bold and underline** and the deletions are ~~struck out~~):

- The permittee shall monitor and record the stack concentration of NO_X and O_2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64]

- The permittee shall perform NO_X and O_2 accuracy drift checks of the in-stack monitoring system **when the unit is operating** at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64]

- If the monitored NO_X concentrations, as measured by the in-stack monitoring system, ~~or the monitored CO concentrations, as measured by the portable analyzer,~~ exceed the permitted emission limits, the permittee shall return the NO_X ~~or CO~~ concentrations to the permitted emission limits as soon as possible but no longer than ~~one (1)~~ **eight (8)** operating hour after detection. If the permittee's **monitoring system** ~~analyzer~~ readings continue to exceed the permitted emissions limits after ~~one (1)~~ **eight (8)** operating hour**s**, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64]

- All in-stack monitoring system ~~and portable analyzer~~ 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 2201 and 4703 and 40 CFR Part 64]

- During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NO_X and O_2 concentration readings. The permittee shall maintain records of the portable analyzer readings and include the date(s) and reasons the in-stack monitoring system was not operational. [District Rules 4703 and 40 CFR Part 64]

The proposed revisions to the conditions above do not affect the compliance with the requirements of the monitoring design criteria of §64.3.

§64.4 - Submittal Requirements

This section specifies submittal requirements for the owner or operator which ensure the CAM system will comply with the design criteria of §64.3. PG&E has submitted a complete CAM system proposal that specifies the parameters to be monitored in accordance with §64.3 above. Therefore, PG&E has satisfied the requirements of the submittal requirements of this section.

§64.5 - Deadlines for Submittals

This section specifies required timing for submittals required under §64.4.

Large pollutant-specific emissions units (those with controlled emissions exceeding major source thresholds) are required to make the submittals as a part of the initial Title V permit application where the application has either not been filed or has not been deemed complete. Where the initial Title V permit has been issued without implementation of 40 CFR 64, the owner or operator must make the required submittals as a part of a subsequent application for any significant permit revision. If the required information is not submitted by either of these deadlines, it must be submitted as a part of the application for the Title V permit renewal.

For *other pollutant-specific emissions units,* the required submittal deadline is the application for Title V permit renewal. PG&E has submitted their CAM proposal with this project. Therefore, PG&E has satisfied the submittal deadline requirements of this section.

§64.6 - Approval of Monitoring

This section stipulates the following:

- A requirement that the permitting authority act to approve the proposed monitoring by confirming that the monitoring submitted complies with the requirements of §64.3.
- An allowance for the permitting authority to condition the approval based on collecting additional data on the indicators to be monitored, including performance or compliance testing.
- The minimum conditions that must be placed on the permit in the event that the proposed monitoring is approved by the permitting authority including a milestone schedule for

completion of any conditional approval actions required by the owner or operator, such as installations, testing, or verification of operational status.
- Actions required by the permitting authority in the event that the proposed monitoring is not approved.

The CAM submittal requirements and stipulations for approval of such submittals pursuant to §64.4, §64.5, and §64.6 have been completed in conjunction with the application and review process for this application. Therefore, PG&E is in compliance with the requirements of this section.

§64.7 - Operation of Approved Monitoring

This section stipulates the following:

- Requirements that the owner or operator 1) commence the monitoring upon receipt of a Title V permit that includes such monitoring, 2) properly maintain the monitoring system, and 3) conduct all monitoring in a continuous mode with the exception of outage periods associated with monitor malfunction and repair and with quality assurance and control activities.
- Actions required by the owner or operator in response to excursions or exceedances.
- A requirement for the owner or operator to document any need for improved monitoring based upon either an identification of a failure of the monitoring system to identify an excursion or exceedance or upon the results of compliance or performance testing that identifies a need to modify the monitoring.

The following condition will be included on the ATC's to ensure compliance with this section:

- The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64]

§64.8 - Quality Improvement Plan (QIP) Requirements

This section stipulates that the Administrator or the permitting authority may require that the facility develop and implement a QIP in the event of a determination of a need for improved monitoring pursuant to §64.7. §64.8 also identifies the minimum elements required in the QIP, and requires that the facility implement the QIP as expeditiously as possible, with implementation not exceeding 180 days after the date that the need for implementation was identified unless the permitting authority is notified.

The following condition will be included on the ATC's to ensure compliance with this section:

- If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR 64]

§64.9 - Reporting and Recordkeeping Requirements

This section stipulates the minimum reporting and recordkeeping requirements for facilities subject to 40 CFR 64.

The following conditions will be included on the ATC's to ensure compliance with this section:

- The permittee shall maintain records of: (1) the date and time of NOx and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx concentrations corrected to 15% 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 4703 and 40 CFR Part 64]

- The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64.9]

§64.10 - Savings Provisions

This section states that the purpose of 40 CFR 64 is to require, as a part of the issuance of a Title V permit, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of 40 CFR 64. In addition, §64.10 states that nothing in 40 CFR 64 shall excuse an owner or operator from any other requirements of federal, state or local law or restrict or abrogate the authority of the Administrator or of the permitting authority.

Therefore, compliance with the requirements of 40 CFR Part 64 is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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 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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) do not trigger Best Available Control Technology (BACT) and do not trigger Toxic Best Available Control Technology (T-BACT) requirements.

Issuance of permits for emissions units not subject to BACT or T-BACT requirements is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The proposed project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period and CARB/EPA review, issue ATCs C-904-27-9, -28-9, -29-9 and -32-0 subject to the permit conditions on the attached draft ATCs in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
C-904-27-9	3020-02-H	58.14 MMBTU/HR GAS TURBINE	$1128.00
C-904-28-9	3020-02-H	58.14 MMBTU/HR GAS TURBINE	$1128.00
C-904-29-9	3020-02-H	58.14 MMBTU/HR GAS TURBINE	$1128.00
C-904-32-0	3020-05-A	1,000 gallons	$83.00

Appendixes

A: Draft ATCs
B: Current ATCs and PTOs
C: HRA Summary
D: Quarterly Net Emissions Change
E: TANKS 4.0d Calculations
F: Compliance Certification

APPENDIX A
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-904-27-9

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: PG & E CO -KETTLEMAN COMPRESSOR STATION
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: 34453 PLYMOUTH AVE
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

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 Rule 2201] 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. Authority to Construct (ATC) C-904-27-7 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Arnaud Marjollet, Director of Permit Services

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7. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, steady state emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. All emission rates are three hour rolling averages. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

8. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

9. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu, based on a per event average. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

10. The total duration of startup and shutdown shall not exceed two hours per day. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

11. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown; however, during such periods, the steady state emission factors stated in this permit shall not apply. [District Rule 4703] Federally Enforceable Through Title V Permit

12. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit

13. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

14. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2 over a 3 hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. To ensure accuracy of the ammonia slip calculation specified within this permit, the NOx emission concentration at the SCR inlet shall be determined at the facility's typical operating load during annual compliance testing by measuring NOx emissions for a minimum of 10 minutes or until NOx concentration has stabilized. [District Rules 2201, 4102, and 4703, and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

16. Source testing shall be District witnessed, or authorized, and samples shall be collected by a California Air Resources Board certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

17. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit

18. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit

19. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20, or CARB Method 100. Alternative test methods may also be used to satisfy the source testing requirements of this permit if approved by the District and EPA. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit

20. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

23. The permittee shall monitor and record the stack concentration of NOx and O2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

24. The permittee shall perform NOx and O2 accuracy drift checks of the in-stack monitoring system, when the unit is operating, at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

25. During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NOx and O2 concentration readings. The permittee shall maintain records of the portable analyzer readings and include the date(s) and reasons the in-stack monitoring system was not operational. [District Rules 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

26. If the monitored NOx concentrations, as measured by the in-stack monitoring system, exceed the permitted emission limits, the permittee shall return the NOx concentrations to the permitted emission limits as soon as possible but no longer than eight (8) operating hours after detection. If the permittee's monitoring system readings continue to exceed the permitted emissions limits after eight (8) operating hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

27. All in-stack monitoring system emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. 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 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. Compliance with the ammonia slip emission limit shall be demonstrated at least once per day, concurrently with the in-stack analyzer NOx concentration readings, utilizing the following calculation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

29. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, and fuel consumption. [District Rule 4703] Federally Enforceable Through Title V Permit

30. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64.7] Federally Enforceable Through Title V Permit

31. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64.9] Federally Enforceable Through Title V Permit

33. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

34. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

35. The permittee shall maintain records of: (1) the date and time of NOx and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) a description of any corrective action taken to maintain the emissions within the acceptable range, and (6) the calculated ammonia slip values and each parameter used to perform the calculation. [District Rules 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

37. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-904-28-9

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: PG & E CO -KETTLEMAN COMPRESSOR STATION
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: 34453 PLYMOUTH AVE
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

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 Rule 2201] 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. Authority to Construct (ATC) C-904-28-7 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Arnaud Marjollet, Director of Permit Services

7. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, steady state emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. All emission rates are three hour rolling averages. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

8. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

9. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu, based on a per event average. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

10. The total duration of startup and shutdown shall not exceed two hours per day. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

11. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown; however, during such periods, the steady state emission factors stated in this permit shall not apply. [District Rule 4703] Federally Enforceable Through Title V Permit

12. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit

13. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

14. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2 over a 3 hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. To ensure accuracy of the ammonia slip calculation specified within this permit, the NOx emission concentration at the SCR inlet shall be determined at the facility's typical operating load during annual compliance testing by measuring NOx emissions for a minimum of 10 minutes or until NOx concentration has stabilized. [District Rules 2201, 4102, and 4703, and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

16. Source testing shall be District witnessed, or authorized, and samples shall be collected by a California Air Resources Board certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

17. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit

18. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit

19. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20, or CARB Method 100. Alternative test methods may also be used to satisfy the source testing requirements of this permit if approved by the District and EPA. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit

20. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

23. The permittee shall monitor and record the stack concentration of NOx and O2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

24. The permittee shall perform NOx and O2 accuracy drift checks of the in-stack monitoring system, when the unit is operating, at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

25. During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NOx and O2 concentration readings. The permittee shall maintain records of the portable analyzer readings and include the date(s) and reasons the in-stack monitoring system was not operational. [District Rules 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

26. If the monitored NOx concentrations, as measured by the in-stack monitoring system, exceed the permitted emission limits, the permittee shall return the NOx concentrations to the permitted emission limits as soon as possible but no longer than eight (8) operating hours after detection. If the permittee's monitoring system readings continue to exceed the permitted emissions limits after eight (8) operating hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

27. All in-stack monitoring system emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. 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 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. Compliance with the ammonia slip emission limit shall be demonstrated at least once per day, concurrently with the in-stack analyzer NOx concentration readings, utilizing the following calculation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

29. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, and fuel consumption. [District Rule 4703] Federally Enforceable Through Title V Permit

30. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64.7] Federally Enforceable Through Title V Permit

31. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64.9] Federally Enforceable Through Title V Permit

33. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

34. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

35. The permittee shall maintain records of: (1) the date and time of NOx and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) a description of any corrective action taken to maintain the emissions within the acceptable range, and (6) the calculated ammonia slip values and each parameter used to perform the calculation. [District Rules 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

37. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-904-29-9

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: PG & E CO -KETTLEMAN COMPRESSOR STATION
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: 34453 PLYMOUTH AVE
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

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 Rule 2201] 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. Authority to Construct (ATC) C-904-29-7 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Arnaud Marjollet, Director of Permit Services

7. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, steady state emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. All emission rates are three hour rolling averages. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

8. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

9. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu, based on a per event average.. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

10. The total duration of startup and shutdown shall not exceed two hours per day. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

11. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown; however, during such periods, the steady state emission factors stated in this permit shall not apply. [District Rule 4703] Federally Enforceable Through Title V Permit

12. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit

13. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

14. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2 over a 3 hour rolling average. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. To ensure accuracy of the ammonia slip calculation specified within this permit, the NOx emission concentration at the SCR inlet shall be determined at the facility's typical operating load during annual compliance testing by measuring NOx emissions for a minimum of 10 minutes or until NOx concentration has stabilized. [District Rules 2201, 4102, and 4703, and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit

16. Source testing shall be District witnessed, or authorized, and samples shall be collected by a California Air Resources Board certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

17. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit

18. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit

19. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20, or CARB Method 100. Alternative test methods may also be used to satisfy the source testing requirements of this permit if approved by the District and EPA. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit

20. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

23. The permittee shall monitor and record the stack concentration of NOx and O2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

24. The permittee shall perform NOx and O2 accuracy drift checks of the in-stack monitoring system, when the unit is operating, at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

25. During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NOx and O2 concentration readings. The permittee shall maintain records of the portable analyzer readings and include the date(s) and reasons the in-stack monitoring system was not operational. [District Rules 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

26. If the monitored NOx concentrations, as measured by the in-stack monitoring system, exceed the permitted emission limits, the permittee shall return the NOx concentrations to the permitted emission limits as soon as possible but no longer than eight (8) operating hours after detection. If the permittee's monitoring system readings continue to exceed the permitted emissions limits after eight (8) operating hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

27. All in-stack monitoring system emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. 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 2201 and 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

28. Compliance with the ammonia slip emission limit shall be demonstrated at least once per day, concurrently with the in-stack analyzer NOx concentration readings, utilizing the following calculation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

29. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, and fuel consumption. [District Rule 4703] Federally Enforceable Through Title V Permit

30. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64.7] Federally Enforceable Through Title V Permit

31. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64.9] Federally Enforceable Through Title V Permit

33. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

34. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

35. The permittee shall maintain records of: (1) the date and time of NOx and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) a description of any corrective action taken to maintain the emissions within the acceptable range, and (6) the calculated ammonia slip values and each parameter used to perform the calculation. [District Rules 4703 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

36. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

37. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-904-32-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: PG & E CO -KETTLEMAN COMPRESSOR STATION
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: 34453 PLYMOUTH AVE
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
PIPELINE LIQUID TRANSFER, STORAGE, AND LOADOUT OPERATION CONSISTING OF A 1,000 GALLON CONVAULT ABOVEGROUND STORAGE TANK (D-322) EQUIPPED WITH A PRESSURE VACUUM RELIEF VALVE AND TANKER TRUCK LOADOUT EQUIPMENT

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 Rule 2201] 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,192 lb, 2nd quarter - 1,192 lb, 3rd quarter - 1,192 lb, and fourth quarter - 1,193 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4742-1 (or a certificate split from these 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
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Arnaud Marjollet, Director of Permit Services

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6. The Reid vapor pressure (RVP) of the organic liquid stored in the tank shall not exceed 2.3 psia. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit

7. The organic liquid transferred into the tank shall not exceed either of the following limits: 1,000 gallons/day or 12,000 gallons/year (based on a 12-month rolling basis). [District Rule 2201] Federally Enforceable Through Title V Permit

8. VOC emissions from transferring and storage of organic liquid in the tank shall not exceed either of the following limits: 1.7 lb/day or 49 lb/year (based on a 12-month rolling basis). [District Rule 2201] Federally Enforceable Through Title V Permit

9. The owner or operator shall determine TVP within 60 days of initial startup and at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in the tank. The records of TVP testing shall be submitted within 45 days after the date of testing. The records shall include the tank identification number, permit number, type of stored organic liquid, TVP of the stored organic liquid, test methods used, and a copy of the test results. [District Rule 2201] Federally Enforceable Through Title V Permit

10. TVP shall be determined at actual storage temperature of the organic liquid in the tank. [District Rule 2201] Federally Enforceable Through Title V Permit

11. TVP of the organic liquid shall be determined by measuring the RVP using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance with the procedures in Appendix B. Appendix B is an excerpt from the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989. Should the permittee want to use different methodology, then that methodology should be first approved by the District and or the EPA. [District Rule 2201] Federally Enforceable Through Title V Permit

12. The owner or operator shall keep records of the date, name of the organic liquid stored, organic liquid RVP, TVP and its storage temperature. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit

13. The owner or operator shall keep records of: a.) date, b.) amount of organic liquid transferred into the tank (gallons/day and gallons/month), and c.) cumulative total amount of organic liquid transferred into the tank in a consecutive 12-month rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit

14. VOC emissions from tanker truck loading operation shall not exceed 0.73 lb/1,000 gallons of pipeline condensate liquid loaded. [District Rule 2201] Federally Enforceable Through Title V Permit

15. The organic liquid loading into tanker truck(s) shall not exceed either of the following limits: 1,000 gallons/day or 12,000 gallons/yr (based on a 12-month rolling basis). [District Rules 2201 and 4624] Federally Enforceable Through Title V Permit

16. The owner or operator shall keep records of: a.) date, b.) amount of organic liquid loaded into a tanker truck (gallons/day and gallons/month), and c.) cumulative total amount of organic liquid loaded into a tanker truck in a consecutive 12-month rolling period. [District Rules 2201 and 4624] Federally Enforceable Through Title V Permit

17. The organic liquid drainage from disconnections associated with the tanker truck loadout equipment shall not exceed 10 mL per disconnect. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The total number of disconnects shall not exceed either of the following limits: 2 disconnects/day or 10 disconnects/year (based on a 12-month rolling basis). [District Rule 2201] Federally Enforceable Through Title V Permit

19. The operator shall determine an average organic liquid drainage for three consecutive disconnects to demonstrate compliance with the permitted organic liquid drainage limit of 10 mL per disconnect. The drainage shall be determined within 60 days of initial startup of the tanker truck transfer operation and the associated records shall be submitted within 45 days after the testing. [District Rule 2201] Federally Enforceable Through Title V Permit

20. The owner or operator shall keep records of: a.) date, b.) number of disconnects (disconnects/day), c.) cumulative total number of disconnects in a consecutive 12-month rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Fugitive VOC emissions from components (i.e., valves and connectors located within 60 feet of piping to the D-322 tank) used to route the organic liquid into the tank shall not exceed either of the following limits: 8.5 lb/day or 3,121lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

22. Fugitive VOC emissions shall be calculated using the EPA "Protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017 (November 1995), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit

23. For the components covered under this permit, the owner or operator shall keep records of the type of component, number of components, emission factors, total daily (lb/day) and annual VOC emissions (lb/year). [District Rule 2201] Federally Enforceable Through Title V Permit

24. Except as otherwise provided in this permit, all piping, valves, and fittings under this permit shall be constructed and maintained in a leak-free condition. Leak free condition is defined as a condition without a gas leak or a liquid leak. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Gas leak is a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with the test method in Section 6.4.8 of Rule 4623. [District Rule 2201] Federally Enforceable Through Title V Permit

26. Liquid Leak is dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Upon detection of a leaking component covered under this permit, the operator shall affix to that component a weatherproof readily visible tag with the date and time of leak detection, the date and time of leak measurement, and for gas leaks, the leak concentration in ppmv. The tag shall remain affixed to the component until the component is repaired or replaced. [District Rule 2201] Federally Enforceable Through Title V Permit

28. All equipment that are found leaking shall be repaired or replaced within 72 hours of detection. The repaired or replaced equipment must be re-inspected. [District Rule 2201] Federally Enforceable Through Title V Permit

29. The owner or operator shall inspect the components (i.e., valves and connectors) under this permit unit within 60 days of initial startup and at least once every 12 months thereafter. The leak inspections shall be performed using a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Method 21. The instrument shall be calibrated with methane in accordance with the procedures specified in EPA Method 21 or the manufacturer's instructions, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. [District Rule 2201] Federally Enforceable Through Title V Permit

30. For each component inspected, the owner or operator shall keep records of the date, name of component, its location, measured ppmv value, the name of the operator and the company conducting the leak inspection. [District Rule 2201] Federally Enforceable Through Title V Permit

31. All records shall be retained for a minimum of five years and shall be made available to the District, ARB, or EPA during normal business hours and submitted upon request. [District Rules 2201 and 4624] Federally Enforceable Through Title V Permit

APPENDIX B
Current ATCs and PTOs

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-904-27-6 **EXPIRATION DATE:** 11/30/2016

EQUIPMENT DESCRIPTION:
58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to the unit's emission control systems to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit
4. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
5. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
6. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Total duration of startup and shutdown shall not exceed two hours per day. During startup, the emissions control system shall be in operations and emissions shall be minimized insofar as technologically feasible. [District Rules 2201, and 4703] Federally Enforceable Through Title V Permit
8. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit
9. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
11. Source testing shall be by District witnessed, or authorized, sample collection by a CARB certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit
13. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit
14. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit
15. NOx emissions (ppmv) shall be determined by EPA Methods 7E or 20, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
16. CO emissions (ppmv) shall be determined by EPA Methods 10 or 10B, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
17. Oxygen content of exhaust gas shall be determined by EPA Methods 3, 3A or 20, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
18. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit
19. PM10 emissions shall be determined by EPA Methods 201A and 202 when PM10 is required by the District. Alternate test methods that are more suitable for the exhaust stack temperature may be used if such methods are approved by the District [District Rule 2201] Federally Enforceable Through Title V Permit
20. Demonstrated percent efficiency shall be determined using the procedures contained in District Rule 4703, Section 6.4.6. [District Rule 4703, Section 6.4.6] Federally Enforceable Through Title V Permit
21. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit
22. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201 and 40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
23. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
24. The facility shall maintain the following records on a daily basis: the start time, stop time, length and reason for reduced load periods, and total hours of operation. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
25. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

26. The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, ammonia (NH3), and O2 weekly. If compliance with the NOx emissions is demonstrated for eight (8) consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until 8 consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. Ammonia monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall be performed within one (1) day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

27. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, the fuel consumption, and the exhaust gas NOx and O2 concentrations. [District Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

28. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). The calculations used to determine ammonia slip and the NOx mass emission rates shall be derived during the initial source test. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

29. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing; evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 1080, 2201, and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

30. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

31. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-904-28-6 **EXPIRATION DATE:** 11/30/2016

EQUIPMENT DESCRIPTION:
58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to the unit's emission control systems to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit
4. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
5. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
6. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Total duration of startup and shutdown shall not exceed two hours per day. During startup, the emissions control system shall be in operations and emissions shall be minimized insofar as technologically feasible. [District Rules 2201, and 4703] Federally Enforceable Through Title V Permit
8. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit
9. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
11. Source testing shall be by District witnessed, or authorized, sample collection by a CARB certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit
13. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit
14. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit
15. NOx emissions (ppmv) shall be determined by EPA Methods 7E or 20, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
16. CO emissions (ppmv) shall be determined by EPA Methods 10 or 10B, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
17. Oxygen content of exhaust gas shall be determined by EPA Methods 3, 3A or 20, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
18. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit
19. PM10 emissions shall be determined by EPA Methods 201A and 202 when PM10 is required by the District. Alternate test methods that are more suitable for the exhaust stack temperature may be used if such methods are approved by the District [District Rule 2201] Federally Enforceable Through Title V Permit
20. Demonstrated percent efficiency shall be determined using the procedures contained in District Rule 4703, Section 6.4.6. [District Rule 4703, Section 6.4.6] Federally Enforceable Through Title V Permit
21. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit
22. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201 and 40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
23. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
24. The facility shall maintain the following records on a daily basis: the start time, stop time, length and reason for reduced load periods, and total hours of operation. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
25. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

26. The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, ammonia (NH3), and O2 weekly. If compliance with the NOx emissions is demonstrated for eight (8) consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until 8 consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. Ammonia monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall be performed within one (1) day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

27. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, the fuel consumption, and the exhaust gas NOx and O2 concentrations. [District Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

28. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). The calculations used to determine ammonia slip and the NOx mass emission rates shall be derived during the initial source test. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

29. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing; evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 1080, 2201, and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

30. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

31. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-904-29-6 **EXPIRATION DATE:** 11/30/2016

EQUIPMENT DESCRIPTION:
58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to the unit's emission control systems to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit
4. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
5. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.0028 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
6. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Total duration of startup and shutdown shall not exceed two hours per day. During startup, the emissions control system shall be in operations and emissions shall be minimized insofar as technologically feasible. [District Rules 2201, and 4703] Federally Enforceable Through Title V Permit
8. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit
9. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
11. Source testing shall be by District witnessed, or authorized, sample collection by a CARB certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit
13. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit
14. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit
15. NOx emissions (ppmv) shall be determined by EPA Methods 7E or 20, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
16. CO emissions (ppmv) shall be determined by EPA Methods 10 or 10B, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
17. Oxygen content of exhaust gas shall be determined by EPA Methods 3, 3A or 20, or CARB Method 100. [District Rule 4703 and 40 CFR 60.335(b)] Federally Enforceable Through Title V Permit
18. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit
19. PM10 emissions shall be determined by EPA Methods 201A and 202 when PM10 is required by the District. Alternate test methods that are more suitable for the exhaust stack temperature may be used if such methods are approved by the District [District Rule 2201] Federally Enforceable Through Title V Permit
20. Demonstrated percent efficiency shall be determined using the procedures contained in District Rule 4703, Section 6.4.6. [District Rule 4703, Section 6.4.6] Federally Enforceable Through Title V Permit
21. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit
22. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201 and 40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
23. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
24. The facility shall maintain the following records on a daily basis: the start time, stop time, length and reason for reduced load periods, and total hours of operation. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
25. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

26. The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, ammonia (NH3), and O2 weekly. If compliance with the NOx emissions is demonstrated for eight (8) consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until 8 consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. Ammonia monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall be performed within one (1) day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

27. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, the fuel consumption, and the exhaust gas NOx and O2 concentrations. [District Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

28. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). The calculations used to determine ammonia slip and the NOx mass emission rates shall be derived during the initial source test. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

29. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing; evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 1080, 2201, and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

30. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

31. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: C-904-27-7 **ISSUANCE DATE:** 11/03/2014

LEGAL OWNER OR OPERATOR: PG & E CO -KETTLEMAN COMPRESSOR STATION
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: 34453 PLYMOUTH AVE
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND NOX AND O2 ANALYZERS, ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR: MODIFY NOX ALTERNATE MONITORING REQUIREMENTS FROM MONTHLY PORTABLE ANALYZER READINGS TO DAILY READINGS USING THE EXISTING IN-STACK MONITORING SYSTEM AND MODIFY AMMONIA SLIP MONITORING REQUIREMENTS FROM MONTHLY DRAEGER TUBE MEASUREMENTS TO DETERMINING VALUES AT LEAST ONCE PER DAY USING APPROVED CALCULATION METHODOLOGY

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit
5. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

for Arnaud Marjollet, Director of Permit Services

C-904-27-7 : Nov 3 2014 12:48PM – BROWND : Joint Inspection NOT Required

6. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

7. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

8. The total duration of startup and shutdown shall not exceed two hours per day. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

9. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703]

10. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703]

11. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

12. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. To ensure accuracy of the ammonia slip calculation specified within this permit, the NOx emission concentration at the SCR inlet shall be determined at the facility's typical operating load during annual compliance testing by measuring NOx emissions for a minimum of 10 minutes or until NOx concentration has stabilized. [District Rules 2201, 4102, and 4703, and 40 CFR 60.335(b)]

14. Source testing shall be District witnessed, or authorized, and samples shall be collected by a California Air Resources Board certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

15. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit

16. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit

17. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20, or CARB Method 100. Alternative test methods may also be used to satisfy the source testing requirements of this permit if approved by the District and EPA. [District Rules 1081 and 4703 and 40 CFR 60.335]

18. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

19. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201 and 40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

20. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

21. The permittee shall monitor and record the stack concentration of NOx and O2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64]

CONDITIONS CONTINUE ON NEXT PAGE

22. The permittee shall perform NOx and O2 accuracy drift checks of the in-stack monitoring system at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64]

23. During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NOx and O2 concentration readings. The permittee shall maintain records of the portable analyzer readings and include the date(s) and reasons the in-stack monitoring system was not operational. [District Rules 4703 and 40 CFR Part 64]

24. The permittee shall monitor and record the stack concentration of CO and O2 at least once per week with a District approved portable analyzer. If compliance with the CO emissions concentration is demonstrated for eight (8) consecutive weeks, then the monitoring frequency may be reduced to monthly. If excess emissions are observed during monthly monitoring, monitoring shall revert to weekly until 8 consecutive weeks show no excess emissions. 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 five (5) days of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last week if on a weekly monitoring schedule. [District Rules 2201 and 4703]

25. If the monitored NOx concentrations, as measured by the in-stack monitoring system, or the monitored CO concentrations, as measured by the portable analyzer, exceed the permitted emission limits, the permittee shall return the NOx or CO concentrations to the permitted emission limits as soon as possible but no longer than one (1) operating hour after detection. If the permittee's analyzer readings continue to exceed the permitted emissions limits after one (1) operating hour, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64]

26. All in-stack monitoring system and portable analyzer 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 2201 and 4703 and 40 CFR Part 64]

27. Compliance with the ammonia slip emission limit shall be demonstrated at least once per day, concurrently with the in-stack analyzer NOx concentration readings, utilizing the following calculation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rules 2201 and 4102]

28. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, and fuel consumption. [District Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

29. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64.7]

30. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64.8]

31. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64.9]

CONDITIONS CONTINUE ON NEXT PAGE

32. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

33. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

34. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) a description of any corrective action taken to maintain the emissions within the acceptable range, and (6) the calculated ammonia slip values and each parameter used to perform the calculation. [District Rules 4703 and 40 CFR Part 64]

35. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

36. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: C-904-28-7 **ISSUANCE DATE:** 11/03/2014

LEGAL OWNER OR OPERATOR: PG & E CO -KETTLEMAN COMPRESSOR STATION
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: 34453 PLYMOUTH AVE
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND NOX AND O2 ANALYZERS; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR: MODIFY NOX ALTERNATE MONITORING REQUIREMENTS FROM MONTHLY PORTABLE ANALYZER READINGS TO DAILY READINGS USING THE EXISTING IN-STACK MONITORING SYSTEM AND MODIFY AMMONIA SLIP MONITORING REQUIREMENTS FROM MONTHLY DRAEGER TUBE MEASUREMENTS TO DETERMINING VALUES AT LEAST ONCE PER DAY USING APPROVED CALCULATION METHODOLOGY

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit
5. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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 Poilution 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

for Arnaud Marjollet, Director of Permit Services

C-904-28-7 : Nov 3 2014 12:49PM -- BROWND : Joint Inspection NOT Required

6. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

7. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

8. The total duration of startup and shutdown shall not exceed two hours per day. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

9. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703]

10. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703]

11. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

12. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. To ensure accuracy of the ammonia slip calculation specified within this permit, the NOx emission concentration at the SCR inlet shall be determined at the facility's typical operating load during annual compliance testing by measuring NOx emissions for a minimum of 10 minutes or until NOx concentration has stabilized. [District Rules 2201, 4102, and 4703, and 40 CFR 60.335(b)]

14. Source testing shall be District witnessed, or authorized, and samples shall be collected by a California Air Resources Board certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

15. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit

16. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit

17. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20, or CARB Method 100. Alternative test methods may also be used to satisfy the source testing requirements of this permit if approved by the District and EPA. [District Rules 1081 and 4703 and 40 CFR 60.335]

18. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

19. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201 and 40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

20. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

21. The permittee shall monitor and record the stack concentration of NOx and O2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64]

CONDITIONS CONTINUE ON NEXT PAGE

22. The permittee shall perform NOx and O2 accuracy drift checks of the in-stack monitoring system at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64]

23. During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NOx and O2 concentration readings. The permittee shall maintain records of the portable analyzer readings and include the date(s) and reasons the in-stack monitoring system was not operational. [District Rules 4703 and 40 CFR Part 64]

24. The permittee shall monitor and record the stack concentration of CO and O2 at least once per week with a District approved portable analyzer. If compliance with the CO emissions concentration is demonstrated for eight (8) consecutive weeks, then the monitoring frequency may be reduced to monthly. If excess emissions are observed during monthly monitoring, monitoring shall revert to weekly until 8 consecutive weeks show no excess emissions. 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 five (5) days of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last week if on a weekly monitoring schedule. [District Rules 2201 and 4703]

25. If the monitored NOx concentrations, as measured by the in-stack monitoring system, or the monitored CO concentrations, as measured by the portable analyzer, exceed the permitted emission limits, the permittee shall return the NOx or CO concentrations to the permitted emission limits as soon as possible but no longer than one (1) operating hour after detection. If the permittee's analyzer readings continue to exceed the permitted emissions limits after one (1) operating hour, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64]

26. All in-stack monitoring system and portable analyzer 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 2201 and 4703 and 40 CFR Part 64]

27. Compliance with the ammonia slip emission limit shall be demonstrated at least once per day, concurrently with the in-stack analyzer NOx concentration readings, utilizing the following calculation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rules 2201 and 4102]

28. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, and fuel consumption. [District Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

29. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64.7]

30. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64.8]

31. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64.9]

CONDITIONS CONTINUE ON NEXT PAGE

32. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

33. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

34. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) a description of any corrective action taken to maintain the emissions within the acceptable range, and (6) the calculated ammonia slip values and each parameter used to perform the calculation. [District Rules 4703 and 40 CFR Part 64]

35. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

36. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: C-904-29-7 **ISSUANCE DATE:** 11/03/2014

LEGAL OWNER OR OPERATOR: PG & E CO -KETTLEMAN COMPRESSOR STATION
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: 34453 PLYMOUTH AVE
AVENAL, CA 93204

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND NOX AND O2 ANALYZERS; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR: MODIFY NOX ALTERNATE MONITORING REQUIREMENTS FROM MONTHLY PORTABLE ANALYZER READINGS TO DAILY READINGS USING THE EXISTING IN-STACK MONITORING SYSTEM AND MODIFY AMMONIA SLIP MONITORING REQUIREMENTS FROM MONTHLY DRAEGER TUBE MEASUREMENTS TO DETERMINING VALUES AT LEAST ONCE PER DAY USING APPROVED CALCULATION METHODOLOGY

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Unit shall be fired exclusively on PUC-quality natural gas, with a maximum sulfur content of 1.0 gr/100 scf. [District Rules 2201, 4801 and 40 CFR 60.333] Federally Enforceable Through Title V Permit
5. Except during periods of startup, shutdown, reduced load, bypass transition, or primary re-ignition, emission rates shall not exceed any of the following emission limits: 8 ppmv NOx (as NO2) @ 15% O2, 0.00280 lb SOx/MMBtu, 0.3 lb PM10/hr, 50 ppmv CO @ 15% O2, 25 ppmv VOC @ 15% O2. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

for Arnaud Marjollet, Director of Permit Services

C-904-29-7 : Nov 3 2014 12:49PM – BROWND : Joint Inspection NOT Required

6. Maximum emissions from the gas turbine, including both steady state and non-steady state periods, shall not exceed any of the following limits: 109.9 lb-NOx/day, 3.9 lb-SOx/day, 7.3 lb-PM10/day, 156.4 lb-CO/day, or 44.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

7. During startup and shutdown, emissions from the gas turbine shall not exceed 171 ppmvd NOx @ 15% O2 or 0.6203 lb-NOx/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

8. The total duration of startup and shutdown shall not exceed two hours per day. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

9. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703]

10. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703]

11. Emissions shall not exceed either of the following NSPS Subpart GG limits (one hour standard): 171 ppmvd NOx (as NO2) @ 15% O2, or 150 ppmvd SOx (as SO2) @ 15% O2. [40 CFR 60.332 and 60.333] Federally Enforceable Through Title V Permit

12. The ammonia slip (NH3) emissions shall not exceed either of the following limits: 0.79 lb/hr or 10 ppmvd @15% O2. [District Rule 2201] Federally Enforceable Through Title V Permit

13. Source testing to determine compliance with the NOx, CO, and ammonia (NH3) steady state emission rates (in both lb/hr and ppmvd @ 15% O2) shall be conducted at least once every 12 months. To ensure accuracy of the ammonia slip calculation specified within this permit, the NOx emission concentration at the SCR inlet shall be determined at the facility's typical operating load during annual compliance testing by measuring NOx emissions for a minimum of 10 minutes or until NOx concentration has stabilized. [District Rules 2201, 4102, and 4703, and 40 CFR 60.335(b)]

14. Source testing shall be District witnessed, or authorized, and samples shall be collected by a California Air Resources Board certified testing laboratory. [District Rule 1081, Section 7.2] Federally Enforceable Through Title V Permit

15. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081, Sections 5.0, 6.0 and 7.1] Federally Enforceable Through Title V Permit

16. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, Section 7.3] Federally Enforceable Through Title V Permit

17. The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20, or CARB Method 100. Alternative test methods may also be used to satisfy the source testing requirements of this permit if approved by the District and EPA. [District Rules 1081 and 4703 and 40 CFR 60.335]

18. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703 and 40 CFR 60.332(a),(b)] Federally Enforceable Through Title V Permit

19. The sulfur content of each fuel source shall either be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days of the end of the source test and weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six-month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [District Rule 2201 and 40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit

20. Fuel sulfur content shall be determined using the following methods: ASTM D 1072, D 3031, D 4084, or D 3246. [40 CFR 60.335(d)] Federally Enforceable Through Title V Permit

21. The permittee shall monitor and record the stack concentration of NOx and O2 at least once per day with the in-stack monitoring system. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. [District Rules 2201 and 4703 and 40 CFR Part 64]

CONDITIONS CONTINUE ON NEXT PAGE

22. The permittee shall perform NOx and O2 accuracy drift checks of the in-stack monitoring system at least once per day in accordance with the requirements of 40 CFR Part 60, Appendices B and F. [District Rules 2201 and 4703 and 40 CFR Part 64]

23. During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NOx and O2 concentration readings. The permittee shall maintain records of the portable analyzer readings and include the date(s) and reasons the in-stack monitoring system was not operational. [District Rules 4703 and 40 CFR Part 64]

24. The permittee shall monitor and record the stack concentration of CO and O2 at least once per week with a District approved portable analyzer. If compliance with the CO emissions concentration is demonstrated for eight (8) consecutive weeks, then the monitoring frequency may be reduced to monthly. If excess emissions are observed during monthly monitoring, monitoring shall revert to weekly until 8 consecutive weeks show no excess emissions. 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 five (5) days of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last week if on a weekly monitoring schedule. [District Rules 2201 and 4703]

25. If the monitored NOx concentrations, as measured by the in-stack monitoring system, or the monitored CO concentrations, as measured by the portable analyzer, exceed the permitted emission limits, the permittee shall return the NOx or CO concentrations to the permitted emission limits as soon as possible but no longer than one (1) operating hour after detection. If the permittee's analyzer readings continue to exceed the permitted emissions limits after one (1) operating hour, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703 and 40 CFR Part 64]

26. All in-stack monitoring system and portable analyzer 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 2201 and 4703 and 40 CFR Part 64]

27. Compliance with the ammonia slip emission limit shall be demonstrated at least once per day, concurrently with the in-stack analyzer NOx concentration readings, utilizing the following calculation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. [District Rules 2201 and 4102]

28. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: emissions control system operating parameters, elapsed time of operation of the gas turbine, and fuel consumption. [District Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

29. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64.7]

30. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64.8]

31. The permittee shall comply with the record keeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64.9]

CONDITIONS CONTINUE ON NEXT PAGE

32. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

33. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitoring measurements, calculated ammonia slip (lb/hr or ppmvd @ 15% O2), and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

34. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) a description of any corrective action taken to maintain the emissions within the acceptable range, and (6) the calculated ammonia slip values and each parameter used to perform the calculation. [District Rules 4703 and 40 CFR Part 64]

35. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least (5) five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703] Federally Enforceable Through Title V Permit

36. Compliance with the conditions in the permit requirements for this unit shall be deemed compliance with District Rule 4201, Kings County Rule 404, District Rule 4801 and Kings County Rule 407. A permit shield is granted from these requirements. [District Rule 2520, Section 13.2] Federally Enforceable Through Title V Permit

APPENDIX C
HRA Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Dustin Brown – Permit Services
From:	Marissa Williams – Technical Services
Date:	July 27, 2016
Facility Name:	PG&E – Kettleman Compressor Station
Location:	34453 Plymouth Ave Avenal, CA 93204
Application #(s):	C-0904-27-9, 28-9, 29-9, 32-0
Project #:	C-1152842

A. RMR SUMMARY

RMR Summary				
Categories	**Turbine Mod[1] (Unit 27, 28, 29-9)**	**NG Storage Tank (Unit 32-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	N/A	0.16	0.16	>1.0
Acute Hazard Index	N/A	0.09	0.09	0.09
Chronic Hazard Index	N/A	0.002	0.002	0.002
Maximum Individual Cancer Risk	N/A	9.05E-08	9.05E-08	9.05E-08
T-BACT Required?	**No**	**No**		
Special Permit Requirements?	**No**	**No**		

[1] There is no hourly or annual emission increase for the modifications to Units 27-9, 28-9, and 29-9; therefore, no RMR analysis is required.

B. RMR REPORT

I. Project Description

Technical Services received a request on July 26, 2016 to perform a Risk Management Review (RMR) for the modification of three 58.14 MMBtu/hr gas turbines driving natural gas pipeline compressors to remove monthly CO portable analyzer monitoring requirements; and for the installation of a 1,000 gallon aboveground natural gas pipeline liquids storage tank. The collected liquid will be loaded into the tanker truck for processing at an offsite facility.

The proposed changes to the three existing turbines do not result in any changes to the emission rates from the turbines; therefore, no additional health risk assessment needs to be performed on the turbines within this project.

II. Analysis

Toxic emissions for the proposed Unit 32-0 were calculated using emission factors derived from a June 2001 MSDS for Unrefined Natural Gas provided by Pacific Gas and Electric Company along with VOC emission rates supplied by the processing engineer. Emissions

were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for the facility is greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used with the parameters outlined below and meteorological data for 2007-2011 from Kettleman to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 32-0 (Storage Tank)*			
Source Type	Point	**Location Type**	Rural
Stack Height (m)	3.05	**Closest Receptor (m)**	585
Stack Diameter. (m)	0.15	**Type of Receptor**	Residential
Stack Exit Velocity (m/s)	0.001	**Stack Exit Temp. (°K)**	Ambient
NG VOC Emissions (lb/hr)	0.075	**NG VOC Emissions (lb/yr)**	48.0

*Modeled using AERMOD's NON-Default Beta Option for "Capped & Horizontal Stack Releases."

Analysis Parameters Unit 32-0 (Truck Loadout)			
Source Type	Circle Area	**Release Height (m)**	3.8
Circle Radius (m)	1.0		
VOC Emissions (lb/hr)	0.99	**VOC Emissions (lb/yr)**	12.0

Analysis Parameters Unit 32-0 (Truck connect/disconnect)			
Source Type	Area	**Release Height (m)**	0.5
X-Length (m)	1.5	**Y-Length (m)**	1.0
NG VOC Emissions (lbs/hr)	0.04	**NG VOC Emissions (lbs/yr)**	1.0

Analysis Parameters Unit 32-0 (Fugitives - Components)			
Source Type	Area	**Release Height (m)**	0.5
X-Length (m)	1.5	**Y-Length (m)**	1.0
NG VOC Emissions (lbs/hr)	0.354	**NG VOC Emissions (lbs/yr)**	3,120

III. Conclusions

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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.

IV. Attachments

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Prioritization score w/ toxic emissions summary
D. Facility Summary

APPENDIX D
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

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

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year

$PE1_{quarterly}$= $PE1_{annual}$ ÷ 4 quarters/year

Quarterly NEC [QNEC] for C-904-27-9, -28-9, -29-9 (each)			
Pollutant	**PE2 (lb/qtr)**	**PE1 (lb/qtr)**	**QNEC (lb/qtr)**
NO_X	10,024.75	10,024.75	0
SO_X	356.50	356.50	0
PM_{10}	662.00	662.00	0
CO	14,273.25	14,273.25	0
VOC	4,074.50	4,074.50	0

Quarterly NEC [QNEC] for C-904-32-0			
Pollutant	**PE2 (lb/qtr)**	**PE1 (lb/qtr)**	**QNEC (lb/qtr)**
NO_X	0	0	0
SO_X	0	0	0
PM_{10}	0	0	0
CO	0	0	0
VOC	794.75	0	794.75

APPENDIX E
TANKS 4.0d Tanks Calculations

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	C-904-32-0 (Daily)
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	3.25
Diameter (ft):	7.23
Liquid Height (ft) :	3.25
Avg. Liquid Height (ft):	1.63
Volume (gallons):	1,000.00
Turnovers:	30.00
Net Throughput(gal/yr):	30,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Fresno, California (Avg Atmospheric Pressure = 14.56 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

C-904-32-0 (Daily) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (RVP 2.3)	Jul	83.59	67.91	99.26	65.52	1.6704	1.1869	2.3062	50.0000			207.00	Option 4: RVP=2.3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

C-904-32-0 (Daily) - Vertical Fixed Roof Tank

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):							5.2252					
Vapor Space Volume (cu ft):							66.5092					
Vapor Density (lb/cu ft):							0.0143					
Vapor Space Expansion Factor:							0.2023					
Vented Vapor Saturation Factor:							0.8746					
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):							66.5092					
Tank Diameter (ft):							7.2300					
Vapor Space Outage (ft):							1.6200					
Tank Shell Height (ft):							3.2500					
Average Liquid Height (ft):							1.6300					
Roof Outage (ft):							0.0000					
Roof Outage (Cone Roof)												
Roof Outage (ft):							0.0000					
Roof Height (ft):							0.0000					
Roof Slope (ft/ft):							0.0000					
Shell Radius (ft):							3.6150					
Vapor Density												
Vapor Density (lb/cu ft):							0.0143					
Vapor Molecular Weight (lb/lb-mole):							50.0000					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							1.6704					
Daily Avg. Liquid Surface Temp. (deg. R):							543.2570					
Daily Average Ambient Temp. (deg. F):							81.8500					
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):							10.731					
Liquid Bulk Temperature (deg. R):							525.1850					
Tank Paint Solar Absorptance (Shell):							0.5400					
Tank Paint Solar Absorptance (Roof):							0.5400					
Daily Total Solar Insulation Factor (Btu/sqft day):							2,551.4853					
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:							0.2023					
Daily Vapor Temperature Range (deg. R):							62.6985					
Daily Vapor Pressure Range (psia):							1.1193					
Breather Vent Press. Setting Range(psia):							0.0000					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							1.6704					
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):							1.1869					
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):							2.3062					
Daily Avg. Liquid Surface Temp. (deg R):							543.2570					
Daily Min. Liquid Surface Temp. (deg R):							527.5824					
Daily Max. Liquid Surface Temp. (deg R):							558.9317					
Daily Ambient Temp. Range (deg. R):							33.5000					
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:							0.8746					
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):							1.6704					
Vapor Space Outage (ft):							1.6200					
Working Losses (lb):							44.7433					

Vapor Molecular Weight (lb/lb-mole):	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.6704
Net Throughput (gal/mo.):	30,000.0000
Annual Turnovers:	30.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	1,000.0000
Maximum Liquid Height (ft):	3.2500
Tank Diameter (ft):	7.2300
Working Loss Product Factor:	0.7500
Total Losses (lb):	49.9685

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: July

C-904-32-0 (Daily) - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil (RVP 2.3)	44.74	5.23	49.97

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	C-904-32-0 (Annual)
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	3.25
Diameter (ft):	7.23
Liquid Height (ft) :	3.25
Avg. Liquid Height (ft):	1.63
Volume (gallons):	1,000.00
Turnovers:	12.00
Net Throughput(gal/yr):	12,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Fresno, California (Avg Atmospheric Pressure = 14.56 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

C-904-32-0 (Annual) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil (RVP 2.3)	Jan	59.67	54.14	65.20	65.52	0.9835	0.8640	1.1165	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Feb	63.53	55.85	71.21	65.52	1.0749	0.8997	1.2776	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Mar	67.24	57.44	77.04	65.52	1.1691	0.9337	1.4518	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Apr	72.12	59.58	84.65	65.52	1.3035	0.9815	1.7085	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	May	77.23	62.70	91.75	65.52	1.4576	1.0546	1.9806	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Jun	81.32	65.80	96.84	65.52	1.5918	1.1318	2.1966	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Jul	83.59	67.91	99.26	65.52	1.6704	1.1869	2.3062	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Aug	81.72	67.18	96.26	65.52	1.6056	1.1677	2.1712	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Sep	77.38	64.72	90.05	65.52	1.4626	1.1043	1.9124	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Oct	71.22	60.82	81.62	65.52	1.2778	1.0101	1.6020	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Nov	63.91	56.69	71.12	65.52	1.0841	0.9176	1.2750	50.0000			207.00	Option 4: RVP=2.3
Crude Oil (RVP 2.3)	Dec	59.19	53.96	64.42	65.52	0.9727	0.8605	1.0968	50.0000			207.00	Option 4: RVP=2.3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

C-904-32-0 (Annual) - Vertical Fixed Roof Tank

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	1.0268	1.4157	2.1911	3.0566	4.1475	4.7371	5.2252	4.6295	3.5104	2.5612	1.4378	0.9589
Vapor Space Volume (cu ft):	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092
Vapor Density (lb/cu ft):	0.0088	0.0096	0.0103	0.0114	0.0126	0.0137	0.0143	0.0138	0.0127	0.0112	0.0096	0.0087
Vapor Space Expansion Factor:	0.0612	0.0867	0.1131	0.1491	0.1789	0.1968	0.2023	0.1849	0.1561	0.1229	0.0816	0.0577
Vented Vapor Saturation Factor:	0.9221	0.9155	0.9088	0.8993	0.8888	0.8798	0.8746	0.8788	0.8884	0.9011	0.9148	0.9229
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092	66.5092
Tank Diameter (ft):	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300
Vapor Space Outage (ft):	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200
Tank Shell Height (ft):	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500
Average Liquid Height (ft):	1.6300	1.6300	1.6300	1.6300	1.6300	1.6300	1.6300	1.6300	1.6300	1.6300	1.6300	1.6300
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Shell Radius (ft):	3.6150	3.6150	3.6150	3.6150	3.6150	3.6150	3.6150	3.6150	3.6150	3.6150	3.6150	3.6150
Vapor Density												
Vapor Density (lb/cu ft):	0.0088	0.0096	0.0103	0.0114	0.0126	0.0137	0.0143	0.0138	0.0127	0.0112	0.0096	0.0087
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.9835	1.0749	1.1691	1.3035	1.4576	1.5918	1.6704	1.6056	1.4626	1.2778	1.0841	0.9727
Daily Avg. Liquid Surface Temp. (deg. R):	519.3388	523.2033	526.9089	531.7876	536.8962	540.9900	543.2570	541.3931	537.0545	530.8907	523.5751	518.8613
Daily Average Ambient Temp. (deg. F):	45.7500	51.1000	55.0000	61.2000	68.9500	76.5500	81.8500	80.2500	74.4500	65.2000	53.6000	45.4000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	525.1850	525.1850	525.1850	525.1850	525.1850	525.1850	525.1850	525.1850	525.1850	525.1850	525.1850	525.1850
Tank Paint Solar Absorptance (Shell):	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	668.1706	1,022.2439	1,488.6308	1,992.7729	2,390.9467	2,566.7143	2,551.4853	2,279.5850	1,860.7886	1,369.9719	851.5527	592.3431
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0612	0.0867	0.1131	0.1491	0.1789	0.1968	0.2023	0.1849	0.1561	0.1229	0.0816	0.0577
Daily Vapor Temperature Range (deg. R):	22.1267	30.7203	39.2121	50.1467	58.1111	62.0647	62.6985	58.1553	50.6711	41.5940	28.8595	20.9082
Daily Vapor Pressure Range (psia):	0.2524	0.3779	0.5181	0.7270	0.9260	1.0647	1.1193	1.0036	0.8081	0.5919	0.3574	0.2363
Breather Vent Press. Setting Range(psia):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.9835	1.0749	1.1691	1.3035	1.4576	1.5918	1.6704	1.6056	1.4626	1.2778	1.0841	0.9727
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.8640	0.8997	0.9337	0.9815	1.0546	1.1318	1.1869	1.1677	1.1043	1.0101	0.9176	0.8605
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	1.1165	1.2776	1.4518	1.7085	1.9806	2.1966	2.3062	2.1712	1.9124	1.6020	1.2750	1.0968
Daily Avg. Liquid Surface Temp. (deg R):	519.3388	523.2033	526.9089	531.7876	536.8962	540.9900	543.2570	541.3931	537.0545	530.8907	523.5751	518.8613
Daily Min. Liquid Surface Temp. (deg R):	513.8071	515.5232	517.1059	519.2509	522.3684	525.4738	527.5824	526.8543	524.3867	520.4922	516.3603	513.6343
Daily Max. Liquid Surface Temp. (deg R):	524.8705	530.8834	536.7119	544.3243	551.4240	556.5062	558.9317	555.9319	549.7223	541.2892	530.7900	524.0884
Daily Ambient Temp. Range (deg. R):	16.7000	21.2000	23.2000	27.8000	30.5000	32.3000	33.5000	32.9000	31.3000	29.0000	22.2000	16.6000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9221	0.9155	0.9088	0.8993	0.8888	0.8798	0.8746	0.8788	0.8884	0.9011	0.9148	0.9229
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.9835	1.0749	1.1691	1.3035	1.4576	1.5918	1.6704	1.6056	1.4626	1.2778	1.0841	0.9727
Vapor Space Outage (ft):	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200	1.6200
Working Losses (lb):	0.8781	0.9597	1.0438	1.1638	1.3015	1.4213	1.4914	1.4335	1.3059	1.1409	0.9679	0.8685

Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.9835	1.0749	1.1691	1.3035	1.4576	1.5918	1.6704	1.6056	1.4626	1.2778	1.0841	0.9727
Net Throughput (gal/mo.):	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000
Annual Turnovers:	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal):	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000
Maximum Liquid Height (ft):	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500	3.2500
Tank Diameter (ft):	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300	7.2300
Working Loss Product Factor:	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Total Losses (lb):	1.9049	2.3754	3.2349	4.2204	5.4489	6.1584	6.7167	6.0631	4.8164	3.7022	2.4057	1.8274

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

C-904-32-0 (Annual) - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil (RVP 2.3)	13.98	34.90	48.87

APPENDIX F
Compliance Certification

San Joaquin Valley
Unified Air Pollution Control District

HEALTHY AIR LIVING

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[X] SIGNIFICANT PERMIT MODIFICATION
[ ] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: Pacific Gas and Electric Company	FACILITY ID: C - 904
1. Type of Organization: [X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: Pacific Gas and Electric Company	
3. Agent to the Owner: Kou Thao	

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

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

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

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

(RIT) 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:

Rolando I. Trevino — 10/28/2015

Signature of Responsible Official — Date

Rolando I. Trevino

Name of Responsible Official (please print)

Vice President, Engineering & Design, Gas Operations

Title of Responsible Official (please print)