



March 26, 2014

Ms. Diana Williams
Pacific Gas & Electric Company
PO Box 7640
San Francisco, CA 94120

**Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)
District Facility # N-608
Project # N-1133496**

Dear Ms. Williams:

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. The modifications are to change the NO_x, CO and VOC emission limits from the terms of g/bhp-hr to ppmvd @ 15% O₂ for Rule 4702 compliance.

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

If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

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

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

Authority to Construct Application Review

Facility Name: Pacific Gas and Electric Company
Mailing Address: Attn: Air Permits
PO Box 7640
San Francisco, CA 94120

Date: March 18, 2014

Contact Person: Diana Williams (Facility Contact)
Telephone: (925) 270-8209

Contact Person: Randy Frazier (Authorized Agent)
Telephone: (925) 605-8471

Engineer: Mark Schonhoff
Application #: N-608-18-4
N-608-19-4
N-608-20-4
N-608-21-4

Project #: N-1133496
Deemed Complete: February 11, 2014

I. Proposal

The applicant has proposed to receive Authorities to Construct to change the emission limits of Permits to Operate N-608-18, N-608-19, N-608-20 and N-608-21 from the terms of g/bhp-hr to the terms of ppmvd @ 15% O₂. The purpose of these modifications is to simplify the compliance determination for Rule 4702. As explained in Section VIII (Rule 2201 Compliance), this permitting action is not subject to District Rule 2201.

The applicant also proposed changes to the Rule 4702 periodic emission monitoring conditions. That portion of the application has since been cancelled.

II. Applicable Rules

2201 New and Modified Stationary Source Review Rule (4/21/11)
2410 Prevention of Significant Deterioration (6/16/11)
2520 Federally Mandated Operating Permits (6/21/01)
4001 New Source Performance Standards (4/14/99)
4002 National Emission Standards for Hazardous Air Pollutants (5/20/2004)
4101 Visible Emissions (2/17/05)
4102 Nuisance (12/17/92)
4201 Particulate Matter Concentration (12/17/92)
4701 Internal Combustion Engines – Phase I (August 21, 2003)
4702 Internal Combustion Engines (November 14, 2013)
4801 Sulfur Compounds (12/17/92)

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
CH&SC 41700
CH&SC 42301.6

III. Project Location

McDonald Island Compressor Station
Highway 4
Holt, CA

The equipment is not located within 1,000 feet of a K-12 school.

IV. Process Description

The facility receives natural gas from a pipeline and stores it in an underground geologic formation. During times of demand, the gas is removed from storage and placed back into the pipeline. The engines power natural gas compressors that maintain the line pressure as necessary.

V. Equipment Listing

Premodification:

N-608-18:

1,500 BHP WAUKESHA MODEL 9390 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-3).

N-608-19:

1,500 BHP WAUKESHA MODEL 9390 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-4).

N-608-20:

1,150 BHP WAUKESHA MODEL 7042 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-5).

N-608-21:

1,150 BHP WAUKESHA MODEL 7042 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-6).

Postmodification:

No Change.

VI. Emission Control Technology Evaluation

The engines utilize lean burn technology to reduce NOx emissions. Lean burn technology allows combustion to occur at a relatively low temperature, which reduces the amount of thermal NOx produced.

VII. General Calculations

A. Assumptions

Assumptions will be stated as they are made.

B. Emission Factors

Premodification Emission Factors:

The NOx, CO and VOC emissions are currently limited in the terms of g/bhp-hr and the applicant is now proposing to modify the permits to change these limits to the terms of ppmvd @ 15% O₂. Therefore, the equivalent ppm emission limits for NOx, CO and VOC were determined to ease comparison of the pre and post modification emission factors for these pollutants. The conversions from g/bhp-hr to ppmvd @ 15% O₂ are in Appendix C of this document. The factors are the same for each unit.

NOx: 0.9 g/bhp-hr (equivalent to 65 ppmvd @ 15% O₂) – current PTO
CO: 3.0 g/bhp-hr (equivalent to 353 ppmvd @ 15% O₂) – current PTO
VOC: 0.9 g/bhp-hr (equivalent to 186 ppmvd @ 15% O₂) – current PTO
SOx: 0.002 g/bhp-hr – current PTO
PM10: 0.1 g/bhp-hr – current PTO

Postmodification Emission Factors:

NOx: 65 ppmvd @ 15% O₂ - Applicant
CO: 353 ppmvd @ 15% O₂ – Applicant
VOC: 186 ppmvd @ 15% O₂ – Applicant
SOx: 0.002 g/bhp-hr – no change
PM10: 0.1 g/bhp-hr – no change

C. Potential to Emit (PE)

1. Potential to Emit

Premodification and Postmodification Potentials to Emit:

Since the proposed NO_x, CO and VOC emission factors are equivalent to the premodification emission factors, the pre and post modification potentials to emit are the same.

NO_x, CO and VOC emissions will be calculated utilizing the following equation:

$$PE = (\text{ppm})(\text{MW})(2.63 \times 10^{-9})(\text{ff})(\text{C})(20.95/(20.95 - \%O_2)) \text{ lb/hr}$$

Where: ppm is the emission concentration

NO_x = 65 ppmvd @ 15% O₂

CO = 353 ppmvd @ 15% O₂

VOC = 186 ppmvd @ 15% O₂ as CH₄

MW is the molecular wt. of the pollutant

NO_x = 46

CO = 28

VOC = 16

2.63×10^{-9} is a constant (at 60 degrees F)

ff is the f-factor of natural gas and LPG – 8,710 dscf/MMBtu – EPA Method 19 (8,578 dscf/MMBtu at 60 degrees F)

C is the capacity of the equipment (in MMBtu/hr)

During the processing of the applications for project N-970763, the applicant reported that the 1,500 bhp and the 1,150 bhp units have natural gas consumption capacities of 9,998 scf/hr and 7,774 scf/hr respectively. The MMBtu capacities below were calculated assuming a natural gas heat content of 1,000 scf/MMBtu.

N-608-18-4 (1,500 bhp): 9.998 MMBtu/hr

N-608-19-4 (1,500 bhp): 9.998 MMBtu/hr

N-608-20-4 (1,150 bhp): 7.774 MMBtu/hr

N-608-21-4 (1,150 bhp): 7,774 MMBtu/hr

% O₂ is the oxygen content to which the stack exhaust is corrected (15%)

Op. Schedule: 24 hr/day and 6,600 hr/yr (current PTO's)

Units N-608-18-4 and N-608-19-4 (same for each):

$$PE_{\text{NO}_x} = [(65)(46)(2.63 \times 10^{-9})(8,578)(9.998)(20.95/(20.95-15))\text{lb/hr} \\ \times (24 \text{ hr/day})] = 57.0 \text{ lb/day}$$

$$PE_{\text{NO}_x} = [(65)(46)(2.63 \times 10^{-9})(8,578)(9.998)(20.95/(20.95-15))\text{lb/hr} \\ \times (6,600 \text{ hr/yr})] = 15,672 \text{ lb/yr}$$

$$PE_{CO} = [(353)(28)(2.63 \times 10^{-9})(8,578)(9.998)(20.95/(20.95-15))\text{lb/hr} \\ \times (24 \text{ hr/day})] = 188.4 \text{ lb/day}$$

$$PE_{CO} = [(353)(28)(2.63 \times 10^{-9})(8,578)(9.998)(20.95/(20.95-15))\text{lb/hr} \\ \times (6,600 \text{ hr/yr})] = 51,808 \text{ lb/yr}$$

$$PE_{VOC} = [(186)(16)(2.63 \times 10^{-9})(8,578)(9.998)(20.95/(20.95-15))\text{lb/hr} \\ \times (24 \text{ hr/day})] = 56.7 \text{ lb/day}$$

$$PE_{VOC} = [(186)(16)(2.63 \times 10^{-9})(8,578)(9.998)(20.95/(20.95-15))\text{lb/hr} \\ \times (6,600 \text{ hr/yr})] = 15,599 \text{ lb/yr}$$

$$SO_x = (1,500 \text{ bhp})(0.002 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 0.2 \text{ lb/day}$$

$$SO_x = (1,500 \text{ bhp})(0.002 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(6,600 \text{ hr/yr}) = 44 \text{ lb/yr}$$

$$PM_{10} = (1,500 \text{ bhp})(0.1 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 7.9 \text{ lb/day}$$

$$PM_{10} = (1,500 \text{ bhp})(0.1 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(6,600 \text{ hr/yr}) = 2,183 \text{ lb/yr}$$

Units N-608-20-4 and N-608-21-4 (same for each):

$$PE_{NO_x} = [(65)(46)(2.63 \times 10^{-9})(8,578)(7.774)(20.95/(20.95-15))\text{lb/hr} \\ \times (24 \text{ hr/day})] = 44.3 \text{ lb/day}$$

$$PE_{NO_x} = [(65)(46)(2.63 \times 10^{-9})(8,578)(7.774)(20.95/(20.95-15))\text{lb/hr} \\ \times (6,600 \text{ hr/yr})] = 12,186 \text{ lb/yr}$$

$$PE_{CO} = [(353)(28)(2.63 \times 10^{-9})(8,578)(7.774)(20.95/(20.95-15))\text{lb/hr} \\ \times (24 \text{ hr/day})] = 146.5 \text{ lb/day}$$

$$PE_{CO} = [(353)(28)(2.63 \times 10^{-9})(8,578)(7.774)(20.95/(20.95-15))\text{lb/hr} \\ \times (6,600 \text{ hr/yr})] = 40,284 \text{ lb/yr}$$

$$PE_{VOC} = [(186)(16)(2.63 \times 10^{-9})(8,578)(7.774)(20.95/(20.95-15))\text{lb/hr} \\ \times (24 \text{ hr/day})] = 44.1 \text{ lb/day}$$

$$PE_{VOC} = [(186)(16)(2.63 \times 10^{-9})(8,578)(7.774)(20.95/(20.95-15))\text{lb/hr} \\ \times (6,600 \text{ hr/yr})] = 12,129 \text{ lb/yr}$$

$$SO_x = (1,150 \text{ bhp})(0.002 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 0.1 \text{ lb/day}$$

$$SO_x = (1,150 \text{ bhp})(0.002 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(6,600 \text{ hr/yr}) = 33 \text{ lb/yr}$$

$$PM_{10} = (1,150 \text{ bhp})(0.1 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 6.1 \text{ lb/day}$$

$$PM_{10} = (1,150 \text{ bhp})(0.1 \text{ g/bhp-hr})(\text{lb}/453.6 \text{ g})(6,600 \text{ hr/yr}) = 1,673 \text{ lb/yr}$$

D. Increase in Permitted Emissions (IPE)

1. Quarterly IPE

N-608-18 and N-608-19:

As shown in section VII.C.1 of this document, there will not be an increase in emissions associated with this permitting action.

The emission profile for these ATC's will be the same and will include the following:

	NOx (lb)	SOx (lb)	PM10 (lb)	CO (lb)	VOC (lb)
Annual PE	15,672	44	2,183	51,808	15,599
Daily PE	57.0	0.2	7.9	188.4	56.7
Δ PE (Qtr 1)	0	0	0	0	0
Δ PE (Qtr 2)	0	0	0	0	0
Δ PE (Qtr 3)	0	0	0	0	0
Δ PE (Qtr 4)	0	0	0	0	0

N-608-20 and N-608-21:

As shown in section VII.C.1 of this document, there will not be an increase in emissions associated with this permitting action.

The emission profile for these ATC's will be the same and will include the following:

	NOx (lb)	SOx (lb)	PM10 (lb)	CO (lb)	VOC (lb)
Annual PE	12,186	33	1,673	40,284	12,129
Daily PE	44.3	0.1	6.1	146.5	44.1
Δ PE (Qtr 1)	0	0	0	0	0
Δ PE (Qtr 2)	0	0	0	0	0
Δ PE (Qtr 3)	0	0	0	0	0
Δ PE (Qtr 4)	0	0	0	0	0

F. Major Source Determination

Rule 2201 Major Source Determination:

Since this permitting action is not subject to Rule 2201, it is not necessary to determine whether or not the facility is a Rule 2201 Major Source.

Rule 2410 Major Source Determination:

The contributions for units N-608-18-3, N-608-19-3, N-608-20-3 and N-608-21-3 are from section VII.C.1 if this document and the others are from the application review document for Project N-1120252.

NO_x, CO, VOC, SO_x and PM₁₀:

Permit Number	Pollutants (lb/yr)				
	NO _x	SO _x	PM ₁₀	CO	VOC
N-608-1-5	2,315	1	9	95	147
N-608-2-5	2,315	1	9	95	147
N-608-3-5	2,315	1	9	95	147
N-608-4-5	2,315	1	9	95	147
N-608-7-4	5,913	169	449	4,967	17,082
N-608-24-3					
N-608-8-3	0	0	0	0	479
N-608-13-5	830	0	59	178	67
N-608-14-5	830	0	59	178	67
N-608-15-2	297	0	3	489	4
N-608-16-3	0	0	0	0	1
N-608-17-3	0	0	0	0	1
N-608-18-3	15,672	44	2,183	51,808	15,599
N-608-19-3	15,672	44	2,183	51,808	15,599
N-608-20-3	12,186	33	1,673	40,284	12,129
N-608-21-3	12,186	33	1,673	40,284	12,129
N-608-25-5	10,021	286	762	8,418	17,082
N-608-26-5					
N-608-27-1	1,711	269	489	11,611	2,958
N-608-28-1	1,711	269	489	11,611	2,958
N-608-29-1	1,711	269	489	11,611	2,958
N-608-30-1	0	0	0	0	160
N-608-31-1	0	0	0	0	160
Total	88,000 (44 TPY)	1,420 (0.71 TPY)	10,547 (5.3 TPY)	233,627 (116.8 TPY)	100,021 (50.0 TPY)

Greenhouse Gas Emissions:

N-608-1-5, N-608-2-5, N-608-3-5, N-608-4-5, N-608-15-2, N-608-18-3, N-608-19-3, N-608-20-3, N-608-21-3, N-608-27-1, N-608-28-1 and N-608-29-1 (Natural Gas Fired Engines):

The sources of the fuel usages are:

N-608-1-5 through N-608-4-5: Calculated below
 N-608-15-2: Application for project N-960648
 N-608-18-3 through N-608-21-3: Application for project N-970763
 N-608-27-1 through N-608-29-1: Application for project N-1060086

Permit Unit	Fuel Use (scf/hr)	Hour Limit	Annual Fuel Usage (MMScf)
N-608-1-5	See Below		0.454
N-608-2-5			0.454
N-608-3-5			0.454
N-608-4-5			0.454
N-608-15-2	1,833	82	0.150
N-608-18-3	9,998	6,600	66.0
N-608-19-3	9,998	6,600	66.0
N-608-20-3	7,774	6,600	51.3
N-608-21-3	7,774	6,600	51.3
N-608-27-1	14,488	6,600	95.6
N-608-28-1	14,488	6,600	95.6
N-608-29-1	14,488	6,600	95.6
Total			523.4

The fuel use ratings of these units are not known, therefore, they will be calculated.

Rating: 625 bhp
 BHP to Btu/hr conversion: 2,542.5 Btu/bhp-hr (GEAR 11NG)
 Thermal Efficiency of Engines: 35% (GEAR 11NG)
 Hour Limit: 100 hr (same for each) – Current Permits to Operate
 Natural gas heat content: 1,000 Btu/scf
 EF_{GHG}: 52.91 kg/MMBtu (CARB greenhouse gas emission factor)

$$\text{Fuel Use} = (625 \text{ bhp})(2,542.5 \text{ Btu/bhp-hr})(100 \text{ hr/yr})(\text{scf}/1,000 \text{ Btu})/(0.35) = 0.454 \text{ MMScf/yr}$$

$$\text{PE}_{\text{GHG}} = (523.4 \times 10^6 \text{ scf/yr})(1,000 \text{ Btu/scf})(52.91 \text{ kg}/10^6 \text{ Btu})(\text{lb}/0.4536 \text{ kg}) \times (\text{ton}/2000 \text{ lb}) = 30,525.9 \text{ tons/yr}$$

N-608-7-4 and N-608-24-3 (Natural Gas Fired Dehydration Units):

Combined Rating: 6.75 MMBtu/hr
Natural Gas Heat Content: 1,000 Btu/scf
Operating Limit: None – assume 8,760 hr/yr
EF_{GHG}: 52.91 kg/MMBtu (CARB greenhouse gas emission factor)

$$\text{Combined Fuel Use} = (6.75 \text{ MMBtu/hr})(8,760 \text{ hr/yr})(\text{scf}/1,000 \text{ Btu}) = 59.1 \text{ MMScf/yr}$$

$$\text{PE}_{\text{GHG}} = (59.1 \times 10^6 \text{ scf/yr})(1,000 \text{ Btu/scf})(52.91 \text{ kg}/10^6 \text{ Btu})(\text{lb}/0.4536 \text{ kg}) \\ \times (\text{ton}/2000 \text{ lb}) = 3,446.8 \text{ tons/yr}$$

N-608-25-5 and N-608-26-5 (Natural Gas Fired Dehydration Units):

Combined Rating: 11.44 MMBtu/hr
Natural Gas Heat Content: 1,000 Btu/scf
Operating Limit: None – assume 8,760 hr/yr

$$\text{Combined Fuel Use} = (11.44 \text{ MMBtu/hr})(8,760 \text{ hr/yr})(\text{scf}/1,000 \text{ Btu}) \\ = 100.2 \text{ MMScf/yr}$$

$$\text{PE}_{\text{GHG}} = (100.2 \times 10^6 \text{ scf/yr})(1,000 \text{ Btu/scf})(52.91 \text{ kg}/10^6 \text{ Btu})(\text{lb}/0.4536 \text{ kg}) \\ \times (\text{ton}/2000 \text{ lb}) = 5,843.9 \text{ tons/yr}$$

N-608-13-5 and N-608-14-5 (Diesel Fired Emergency Engines):

Rating: 267 bhp (each)
Operating Limit: 100 hr/yr (each)
EF_{GHG}: 0.000187 metric tons/bhp-hr (CARB greenhouse gas emission factor)

$$\text{PE}_{\text{GHG}} = (2)[(0.000187 \text{ MT/bhp-hr})(267 \text{ bhp})(100 \text{ hr/yr})(2,205 \text{ lb}/\text{MT})(\text{ton}/2000 \text{ lb})] \\ = 11.0 \text{ tons/yr}$$

N-608-8-3 (Gasoline Dispensing Operation):

This unit will not have GHG emissions.

N-6-0-16-2 and N-608-17-3 (Methanol Tanks):

These units will not have GHG emissions.

Total GHG Emissions:

$$\text{PE}_{\text{GHG}} = 30,525.9 \text{ tons/yr} + 3,446.8 \text{ tons/yr} + 5,843.9 \text{ tons/yr} + 11.0 \text{ tons/yr} \\ = 39,827.6 \text{ tons/yr}$$

The equipment currently under consideration is not a source category listed in 40 CFR Part 52.21(b)(1)(i), therefore, the applicable thresholds are those shown on the table below.

Pollutant	Threshold (tons/yr)	Facility PE (tons/yr)	Major Source
NOx	250	44	No
CO	250	116.8	No
VOC	250	50.0	No
SOx	250	0.71	No
PM	250	5.3	No
PM10	250	5.3	No
CO ₂ e	100,000	39,827.6	No

As shown above, the facility is not currently a PSD Major Source for any pollutant

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

The NO_x, CO and VOC emissions are currently limited in the terms of g/bhp-hr. To simplify the compliance determination for the Rule 4702 NO_x, CO and VOC emission limits (which are in the terms of ppmvd @ 15% O₂), the applicant has proposed to change the current g/bhp-hr NO_x, CO and VOC emission limits to the ppmvd @ 3% O₂ equivalents. As shown by source testing, these limits are currently being met. Per District guidance document FYI-111 (Case 5), such modifications are not subject to Rule 2201. The information necessary to show that the changes do not result in a change to the emission limits is in Appendix C of this document. Source test summaries that show the units currently comply with the proposed emission limits are in Appendix D.

Rule 2410 Prevention of Significant Deterioration

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Greenhouse gases (GHG): CO₂, N₂O, CH₄, HFCs, PFCs, and SF₆

The first step of this PSD applicability evaluation consists of determining whether the facility is an existing PSD Major Source. This facility is not an existing PSD Major source (See Section VII.F of this document).

Potential to Emit for All Emission Units at the Facility vs PSD Major Source Thresholds:

As a screening tool, the potential to emit from all new and modified units at the facility is compared to the PSD major source threshold and if the total potential to emit from all new and modified units at the facility is below this threshold, no further analysis will be needed.

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). Therefore the following PSD Major Source thresholds are applicable.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	27.9	0.08	92.1	3.86	3.86	13,682 (shown below)
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	No	No	No	No	No	No

EF_{GHG}: 52.91 kg/MMBtu (CARB greenhouse gas emission factor)

Fuel Use:

N-608-18-4 (1,500 bhp): 9.998 MMBtu/hr
 N-608-19-4 (1,500 bhp): 9.998 MMBtu/hr
 N-608-20-4 (1,150 bhp): 7.774 MMBtu/hr
 N-608-21-4 (1,150 bhp): 7.774 MMBtu/hr
 Total 35.544 MMBtu/hr

Schedule: 6,600 hr/yr (each)

$$PE_{GHG} = (52.91 \text{ kg/MMBtu})(35.544 \text{ MMBtu/hr})(6,600 \text{ hr/yr})(\text{lb}/0.4536 \text{ kg}) \times (\text{ton}/2,000 \text{ lb}) = 13,682 \text{ tons/yr}$$

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

Rule 2520 Federally Mandated Operating Permits

The facility is currently operating under a Title V permit and has proposed to receive the Authorities-to-Construct with Certificates of Conformity in accordance with the requirements of 40 CFR 70.6(c), 70.7 and 70.8. Therefore, the 45-day EPA comment period will be satisfied prior to the issuance of the ATC. The following two federally enforceable conditions will be placed on the Authorities-to-Construct:

- 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] Y
- Prior to operating with the modifications authorized by this Authority to Construct, the facility shall submit an application for an administrative amendment to its Title V permit, in accordance with District Rule 2520, Section 11.4.2. [District Rule 2520] Y

Rule 4001 New Source Performance Standards

40 CFR Part 60 Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The engines currently consideration are not subject units because construction, modification or reconstruction did not commence after June 12, 2006 [Sections 60.4230(a)(4) and 60.4230(a)(5)].

Rule 4002 National Emission Standards for Hazardous Air Pollutants

40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Compliance with the requirements of this subpart was addressed during the recent Title V permit renewal (Project N-1092120). The applicant has not proposed any changes that would affect that determination, therefore, continued compliance is expected.

Rule 4101 Visible Emissions

As long as the equipment is properly maintained and operated, the visible emissions are not expected to exceed 20% opacity for a period or periods aggregating more than 3 minutes in any one hour. Compliance with the provisions of this rule is expected.

Rule 4102 Nuisance

A. California Health & Safety Code 41700 (Health Risk Analysis)

There will be no increase in emissions or fuel usage, therefore, no increase in the emissions of hazardous air pollutants will occur. A health risk assessment is therefore not required.

B. Toxics BACT (T-BACT)

As explained above, there will not be an increase in the emissions of hazardous air pollutants. Therefore, T-BACT is not required.

- Rule 4201 Particulate Matter Concentration**
- Rule 4701 Internal Combustion Engines – Phase I**
- Rule 4702 Internal Combustion Engines**
- Rule 4801 Sulfur Compounds**

Compliance with the requirements of these rules was addressed during the recent Title V permit renewal (Project N-1092120). The applicant has not proposed any changes that would affect that determination, therefore, continued compliance is expected.

California Environmental Quality Act (CEQA)

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that none of the project specific emission unit(s) trigger Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant 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.

California Health & Safety Code 42301.6 (School Notice)

The equipment is not located within 1,000 feet of a K-12 school, therefore, a school notice is not required.

IX. Recommendation

Issue Authorities-to-Construct with the conditions on the attached Draft Authorities-to-Construct after completion of the required 45-day EPA notice.

X. Billing Information

Premodification:

Permit #	Description	Fee Schedule
N-608-18-3	1,500 bhp	3020-10-F
N-608-19-3	1,500 bhp	3020-10-F
N-608-20-3	1,150 bhp	3020-10-F
N-608-21-3	1,150 bhp	3020-10-F

Post modification:

No Changes

Appendices

- Appendix A: Draft ATC's
- Appendix B: Current PTO's
- Appendix C: Emission Factor Comparison
- Appendix D: Source Test Summaries
- Appendix E: Title V Modification - Compliance Certification Form

Appendix A Draft ATC's

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-608-18-4

LEGAL OWNER OR OPERATOR: PACIFIC GAS & ELECTRIC CO.
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: MCDONALD ISLAND COMPRESSOR STATION
HOLT, CA 95234

EQUIPMENT DESCRIPTION:

1,500 BHP WAUKESHA MODEL 9390 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-3). MODIFICATION TO CHANGE THE G/BHP NOX, CO AND VOC EMISSION LIMITS TO THE TERMS OF PPMVD @ 15% O2 FOR RULE 4702 COMPLIANCE.

CONDITIONS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-608-18-4 Mar 18 2014 9:56AM - SCHONHOM Joint Inspection NOT Required

6. The NO_x emissions shall not exceed 65 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 353 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions shall not exceed 186 ppmvd @ 15% O₂, as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SO_x emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM₁₀ emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NO_x, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit
27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least 5 readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-608-19-4

LEGAL OWNER OR OPERATOR: PACIFIC GAS & ELECTRIC CO.

MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: MCDONALD ISLAND COMPRESSOR STATION
HOLT, CA 95234

EQUIPMENT DESCRIPTION:

1,500 BHP WAUKESHA MODEL 9390 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-4). MODIFICATION TO CHANGE THE G/BHP NOX, CO AND VOC EMISSION LIMITS TO THE TERMS OF PPMVD @ 15% O2 FOR RULE 4702 COMPLIANCE.

CONDITIONS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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

DAVID WARNER, Director of Permit Services
N-608-19-4 Mar 18 2014 9:56AM - SCHONHDM Joint Inspection NOT Required

6. The NO_x emissions shall not exceed 65 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 353 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions shall not exceed 186 ppmvd @ 15% O₂, as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SO_x emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM₁₀ emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NO_x, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit
27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-608-20-4

LEGAL OWNER OR OPERATOR: PACIFIC GAS & ELECTRIC CO.
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: MCDONALD ISLAND COMPRESSOR STATION
HOLT, CA 95234

EQUIPMENT DESCRIPTION:

1,150 BHP WAUKESHA MODEL 7042 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-5). MODIFICATION TO CHANGE THE G/BHP NOX, CO AND VOC EMISSION LIMITS TO THE TERMS OF PPMVD @ 15% O2 FOR RULE 4702 COMPLIANCE.

CONDITIONS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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

DAVID WARNER, Director of Permit Services

N-808-20-4 Mar 18 2014 9:56AM - SCHONHOM Joint Inspection NOT Required

6. The NO_x emissions shall not exceed 65 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 353 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions shall not exceed 186 ppmvd @ 15% O₂, as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SO_x emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM₁₀ emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NO_x, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit
27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least 5 readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-608-21-4

LEGAL OWNER OR OPERATOR: PACIFIC GAS & ELECTRIC CO.
MAILING ADDRESS: ATTN: AIR QUALITY PERMITS
P O BOX 7640
SAN FRANCISCO, CA 94120

LOCATION: MCDONALD ISLAND COMPRESSOR STATION
HOLT, CA 95234

EQUIPMENT DESCRIPTION:

1,150 BHP WAUKESHA MODEL 7042 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-6). MODIFICATION TO CHANGE THE G/BHP NOX, CO AND VOC EMISSION LIMITS TO THE TERMS OF PPMVD @ 15% O2 FOR RULE 4702 COMPLIANCE.

CONDITIONS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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

DAVID WARNER, Director of Permit Services

N-608-21-4 Mar 18 2014 9:58AM - SCHONHOM Joint Inspection NOT Required

6. The NO_x emissions shall not exceed 65 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 353 ppmvd @ 15% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions shall not exceed 186 ppmvd @ 15% O₂, as methane. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SO_x emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM₁₀ emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NO_x, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit
27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least 5 readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

DRAFT

Appendix B Current PTO's

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-608-18-3

EXPIRATION DATE: 10/31/2015

EQUIPMENT DESCRIPTION:

1,500 BHP WAUKESHA MODEL 9390 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-3).

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
6. The NO_x emissions shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 3.0 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions, as methane, shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SO_x emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM₁₀ emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NO_x, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit
23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least 5 readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit
34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-608-19-3

EXPIRATION DATE: 10/31/2015

EQUIPMENT DESCRIPTION:

1,500 BHP WAUKESHA MODEL 9390 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-4).

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
6. The NOx emissions shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 3.0 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions, as methane, shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SOx emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM10 emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

Facility Name: PACIFIC GAS & ELECTRIC CO.

Location: MCDONALD ISLAND COMPRESSOR STATION, HOLT, CA 95234

N-608-19-3 Mar 18 2014 10:01AM - SCHONHOM

14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NO_x, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit
23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit
34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-608-20-3

EXPIRATION DATE: 10/31/2015

EQUIPMENT DESCRIPTION:

1,150 BHP WAUKESHA MODEL 7042 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-5).

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
6. The NO_x emissions shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 3.0 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions, as methane, shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SO_x emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM₁₀ emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NOx, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit
23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least 5 readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit
34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-608-21-3

EXPIRATION DATE: 10/31/2015

EQUIPMENT DESCRIPTION:

1,150 BHP WAUKESHA MODEL 7042 GL LEAN BURN NATURAL GAS FIRED IC ENGINE POWERING A NATURAL GAS COMPRESSOR (PG&E DESIGNATION K-6).

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.0] Federally Enforceable Through Title V Permit
2. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District NSR Rule and District Rule 4702, 5.6.6] Federally Enforceable Through Title V Permit
3. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
4. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702, 6.5.1] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [Stanislaus County Rule 407] Federally Enforceable Through Title V Permit
6. The NO_x emissions shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The CO emissions shall not exceed 3.0 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The VOC emissions, as methane, shall not exceed 0.9 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The SO_x emissions shall not exceed 0.002 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The PM₁₀ emissions shall not exceed 0.1 g/bhp-hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The engine shall not operate more than 6,600 hours during any one calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The engine shall not operate for more than 1,104 hours during the first calendar quarter, nor more than 1,104 hours during the fourth calendar quarter. Either limit may be increased by one hour for each entire hour that the engine does not operate during the second or third calendar quarters. [District NSR Rule] Federally Enforceable Through Title V Permit
13. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

14. If the engine is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the IC engine shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. If the engine is fired on natural gas but not PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until 8 consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. Source testing to measure the NO_x, CO, and VOC emissions from this unit shall be conducted not less than once every 24 months. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
17. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
18. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702, 6.3] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100. [District Rules 1081, 5.0 and 4702, 6.4] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.3] Federally Enforceable Through Title V Permit
22. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081, 3.0] Federally Enforceable Through Title V Permit
23. The ignition timing shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every 720 operating hours. [District Rule 4702, 6.5.2] Federally Enforceable Through Title V Permit
24. The valve clearances shall be checked, and if necessary, adjusted to within the manufacturer's specification at least once every three calendar months. [District Rule 4702, 6.5.5] Federally Enforceable Through Title V Permit
25. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
26. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702, 6.5.4] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least 5 readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702, 5.6.9] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO 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 Rule 4702, 6.5.7] Federally Enforceable Through Title V Permit
29. Records of the the cumulative hours of operation on a calendar year basis and on a calendar quarter basis shall be kept. The records shall be updated at least weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the dates the ignition timing and valve clearances were checked. The permittee shall also maintain records of the manufacturer's recommended ignition timing and valve clearances. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
31. If records indicate that the ignition timing or valve clearances have not been checked within the time frames listed, the District may require the permittee to conduct a source test using EPA approved methods to verify compliance with emission limits. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
32. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702, 6.2] Federally Enforceable Through Title V Permit
33. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702, 6.5.8] Federally Enforceable Through Title V Permit
34. All records shall be maintained and retained on-site for a minimum of 5 years, and shall be made available for District inspection upon request. [District Rules 4701, 6.2.3 and 4702, 6.2.2] Federally Enforceable Through Title V Permit

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

Appendix C

Emission Factor Comparison

The following table shows that this permitting action does not result in an increase in the emission factor and that the engines are already meeting the proposed limits. The conversions are shown on the following pages. Source test information is in Appendix D.

Pollutant	Permit Unit	Current Emission Limit (g/bhp-hr)	Ppmvd @ 15% O ₂ Equivalent of the g/bhp-hr limit	Proposed Emission Limit (ppmvd @ 3% O ₂)	Previous source test result (ppmvd @ 3% O ₂)
NOx	N-608-18	0.9	65	65	40.2
	N-608-19				36.0
	N-608-20				56.2
	N-608-21				49.4
CO	N-608-18	3.0	353	353	311.3
	N-608-19				316.5
	N-608-20				261.7
	N-608-21				263.5
VOC	N-608-18	0.9	186	186	32.4
	N-608-19				25.8
	N-608-20				50.5
	N-608-21				26.1

Grams/Brake Horsepower - Hour ----> Parts Per Million Volume

g/Bhp-hr ----> ppmv

Variables:			Given:
Engine Size:	1500 hp	Conversion #1	379.5 dscf/lb-mole
NOx:	0.9 g/bhp-hr	Conversion #2	393.236 bhp-hr/MMBtu
CO:	3 g/bhp-hr	Conversion #3	453.59 g/lb
VOC:	0.9 g/bhp-hr	WV(NOx):	46 as NO ₂
O ₂ level:	15 %	WV(CO):	28
Engine Efficiency:	30 % (Assumed)	WV(VOC):	16 as CH ₄
F-factor:	8578 dscf/MMBtu	O ₂ Correction:	3.542
Fuel Type	1	Pressure (p)	1 atm
OIL (CRUDE, RESIDUAL, OR DISTILLATE)	0	Temp (oF)	60 oF
GAS (NATURAL)	1		
GAS (PROPANE)	2		
GAS (BUTANE)	3		

Formula:

g	I	I	(20.9 - O ₂ %)	Conversion #1	Conversion #2	Conversion #3	Engine Eff.
bhp-hr	F-factor	MW _{pollutant}	20.9	1	1	1	1

for NOx:

$$\begin{aligned}
 & \frac{0.90 \text{ g}}{\text{bhp-hr}} \times \frac{\text{MMBtu}}{8578 \text{ dscf}} \times \frac{1 \text{ lb-mol}}{46 \text{ lb}} \times \frac{20.9 - 15}{20.9} \times \frac{379.5 \text{ dscf}}{1 \text{ lb-mol}} \times \frac{393.24 \text{ bhp-hr}}{\text{MMBtu}} \times \frac{\text{lb}}{453.59 \text{ g}} \times \frac{1}{1} = 30\% \\
 & \qquad \qquad \qquad = \mathbf{64.524 \text{ PPM}}
 \end{aligned}$$

for CO:

$$\begin{aligned}
 & \frac{3.00 \text{ g}}{\text{bhp-hr}} \times \frac{\text{MMBtu}}{8578 \text{ dscf}} \times \frac{1 \text{ lb-mol}}{28 \text{ lb}} \times \frac{20.9 - 15}{20.9} \times \frac{379.5 \text{ dscf}}{1 \text{ lb-mol}} \times \frac{393.24 \text{ bhp-hr}}{\text{MMBtu}} \times \frac{\text{lb}}{453.59 \text{ g}} \times \frac{1}{1} = 30\% \\
 & \qquad \qquad \qquad = \mathbf{353.344 \text{ PPM}}
 \end{aligned}$$

for VOC:

$$\begin{aligned}
 & \frac{0.90 \text{ g}}{\text{bhp-hr}} \times \frac{\text{MMBtu}}{8578 \text{ dscf}} \times \frac{1 \text{ lb-mol}}{16 \text{ lb}} \times \frac{20.9 - 15}{20.9} \times \frac{379.5 \text{ dscf}}{1 \text{ lb-mol}} \times \frac{393.24 \text{ bhp-hr}}{\text{MMBtu}} \times \frac{\text{lb}}{453.59 \text{ g}} \times \frac{1}{1} = 30\% \\
 & \qquad \qquad \qquad = \mathbf{353.344 \text{ PPM}}
 \end{aligned}$$

185.506 PPM

Grams/Brake Horsepower - Hour ----> Parts Per Million Volume

g/Bhp-hr ----> ppmv

Variables:

Engine Size:	1150 hp
NOx:	0.9 g/bhp-hr
CO:	3 g/bhp-hr
VOC:	0.9 g/bhp-hr
O ₂ level:	15 %
Engine Efficiency:	30 % (Assumed)
F-factor:	8578 dscf/MMBtu
Fuel Type	1
OIL (CRUDE, RESIDUAL, OR DISTILLATE)	0
GAS (NATURAL)	1
GAS (PROPANE)	2
GAS (BUTANE)	3

Given:

Conversion #1	379.5	dscf/lb-mole
Conversion #2	393.236	bhp-hr/MMBtu
Conversion #3	453.59	g/lb
WVW(NOx):	46	as NO ₂
WVW(CO):	28	
WVW(VOC):	16	as CH ₄
O ₂ Correction:	3.542	
Pressure (p)	1	atm
Temp (oF)	60	oF

Formula:

g	1	(20.9 - O ₂ %)	Conversion #1	Conversion #2	Conversion #3	Engine Eff.
bhp-hr	F-factor	MW _{pollutant}	1	1	1	1

for NOx:

$$\begin{array}{l}
 \uparrow \\
 \frac{0.90 \text{ g}}{\text{bhp-hr}} \times \frac{8578 \text{ dscf}}{\text{MMBtu}} \times \frac{1 \text{ lb-mol}}{46 \text{ lb}} \times \frac{20.9 - 15}{20.9} \times \frac{379.5 \text{ dscf}}{1 \text{ lb-mol}} \times \frac{1 \text{ lb}}{\text{MMBtu}} \times \frac{393.24 \text{ bhp-hr}}{\text{MMBtu}} \times \frac{453.59 \text{ g}}{1} \times \frac{1}{30\%} \\
 = \mathbf{64.524 \text{ PPM}}
 \end{array}$$

for CO:

$$\begin{array}{l}
 \uparrow \\
 \frac{3.00 \text{ g}}{\text{bhp-hr}} \times \frac{8578 \text{ dscf}}{\text{MMBtu}} \times \frac{1 \text{ lb-mol}}{28 \text{ lb}} \times \frac{20.9 - 15}{20.9} \times \frac{379.5 \text{ dscf}}{1 \text{ lb-mol}} \times \frac{1 \text{ lb}}{\text{MMBtu}} \times \frac{393.24 \text{ bhp-hr}}{\text{MMBtu}} \times \frac{453.59 \text{ g}}{1} \times \frac{1}{30\%} \\
 = \mathbf{353.344 \text{ PPM}}
 \end{array}$$

for VOC:

$$\begin{array}{l}
 \uparrow \\
 \frac{0.90 \text{ g}}{\text{bhp-hr}} \times \frac{8578 \text{ dscf}}{\text{MMBtu}} \times \frac{1 \text{ lb-mol}}{16 \text{ lb}} \times \frac{20.9 - 15}{20.9} \times \frac{379.5 \text{ dscf}}{1 \text{ lb-mol}} \times \frac{1 \text{ lb}}{\text{MMBtu}} \times \frac{393.24 \text{ bhp-hr}}{\text{MMBtu}} \times \frac{453.59 \text{ g}}{1} \times \frac{1}{30\%} \\
 = \mathbf{353.344 \text{ PPM}}
 \end{array}$$

= 185.506 PPM

Appendix D

Source Test Summaries

The source test summary, which shows the uncorrected NO_x, CO and VOC emissions, in ppmvd is on the following page. The calculations below show the conversion from uncorrected to 15% O₂.

N-608-18-3:

Uncorrected NO_x: 68.6 ppmvd @ 10.8% O₂
Uncorrected CO: 531.0 ppmvd @ 10.8% O₂
Uncorrected VOC: 55.3 ppmvd as CH₄ @ 10.8% O₂

NO_x = (68.6 ppmvd)[(20.95-15) / (20.95-10.8)] = 40.2 ppmvd @ 15% O₂
CO = (531.0 ppmvd)[(20.95-15) / (20.95-10.8)] = 311.3 ppmvd @ 15% O₂
VOC = (55.3 ppmvd)[(20.95-15) / (20.95-10.8)] = 32.4 ppmvd @ 15% O₂ as CH₄

N-608-19-3:

Uncorrected NO_x: 60.8 ppmvd @ 10.9% O₂
Uncorrected CO: 534.6 ppmvd @ 10.9% O₂
Uncorrected VOC: 43.6 ppmvd as CH₄ @ 10.9% O₂

NO_x = (60.8 ppmvd)[(20.95-15) / (20.95-10.9)] = 36.0 ppmvd @ 15% O₂
CO = (534.6 ppmvd)[(20.95-15) / (20.95-10.9)] = 316.5 ppmvd @ 15% O₂
VOC = (43.6 ppmvd)[(20.95-15) / (20.95-10.9)] = 25.8 ppmvd @ 15% O₂ as CH₄

N-608-20-3:

Uncorrected NO_x: 94.0 ppmvd @ 11.0% O₂
Uncorrected CO: 437.6 ppmvd @ 11.0% O₂
Uncorrected VOC: 84.4 ppmvd as CH₄ @ 11.0% O₂

NO_x = (94.0 ppmvd)[(20.95-15) / (20.95-11.0)] = 56.2 ppmvd @ 15% O₂
CO = (437.6 ppmvd)[(20.95-15) / (20.95-11.0)] = 261.7 ppmvd @ 15% O₂
VOC = (84.4 ppmvd)[(20.95-15) / (20.95-11.0)] = 50.5 ppmvd @ 15% O₂ as CH₄

N-608-21-3:

Uncorrected NO_x: 88.5 ppmvd @ 10.3% O₂
Uncorrected CO: 471.6 ppmvd @ 10.3% O₂
Uncorrected VOC: 46.8 ppmvd as CH₄ @ 10.3% O₂

NO_x = (88.5 ppmvd)[(20.95-15) / (20.95-10.3)] = 49.4 ppmvd @ 15% O₂
CO = (471.6 ppmvd)[(20.95-15) / (20.95-10.3)] = 263.5 ppmvd @ 15% O₂
VOC = (46.8 ppmvd)[(20.95-15) / (20.95-10.3)] = 26.1 ppmvd @ 15% O₂ as CH₄

**TABLE 1-1
SUMMARY OF AVERAGE RESULTS
PG&E MCDONALD ISLAND COMPRESSOR STATION
OCTOBER 9-11, 2012**

Parameter	K-3 <i>N-608-18</i>	K-4 <i>N-608-19</i>	K-5 <i>N-608-20</i>	K-6 <i>N-608-21</i>	Permit Limits
Date:	10/09/12	10/11/12	10/11/12	10/10/12	
Process Conditions:					
Brake Horsepower	1,240	1,198	1,230	1,138	--
Unit fuel flow rate, scfh	11,000	9,667	5,333	8,667	--
Fuel F _d factor, dscf/MMBtu	8,578	8,578	8,578	8,578	--
Fuel HHV, Btu/scf	1,030	1,030	1,030	1,030	--
Stack Gas:					
O ₂ , % volume dry	10.8	10.9	11.0	10.3	--
CO ₂ , % volume dry	5.6	5.6	5.5	5.9	--
Volumetric flow rate, dscfm	3,328	2,957	1,642	2,500	--
CO Emissions:					
ppm volume dry	531.0	534.6	437.6	471.6	--
lb/hr	7.83	7.01	3.18	5.22	--
g/bhp·hr	2.9	2.7	1.2	2.1	3.0
NO_x Emissions:					
ppm volume dry	68.6	60.8	94.0	88.5	--
lb/hr	1.66	1.30	1.12	1.61	--
g/bhp·hr	0.6	0.5	0.4	0.6	0.9
VOC Emissions:					
ppm volume dry	55.3	43.6	84.4	46.8	--
lb/hr	0.47	0.33	0.35	0.30	--
g/bhp·hr	0.2	0.1	0.1	0.1	0.9

Notes: Emission rates were calculated stoichiometrically as described in EPA Method 19. The standard EPA fuel factor of 8,578 dscf/MMBtu @ 60°F for natural gas and a conservatively high higher heating value of 1,030 btu/scf @ 60°F were used in the calculations.

The results have been reported as required by the SJVAPCD Source Test Guidelines (March 8, 2007) Appendix E Rounding for Significant Figures Procedure.



Appendix E
Title V Modification - Compliance Certification Form

