

Statement of Basis

**Permit to Construct No. P-2014.0030
Project ID 61399**

**Northwest Pipeline LLC
Bruneau, Idaho**

Facility ID 073-00002

Final

January 14, 2014
Shawnee Chen, P.E. *SJC*
Senior Air Quality Engineer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE	3
FACILITY INFORMATION	5
Description	5
Permitting History	5
Application Scope	5
Application Chronology	5
TECHNICAL ANALYSIS	5
Emissions Units and Control Equipment	5
Emissions Inventories	6
Ambient Air Quality Impact Analyses	6
The project is for a facility name change. Ambient air quality impact analyses are not required.....	6
REGULATORY ANALYSIS.....	6
Attainment Designation (40 CFR 81.313)	6
Facility Classification.....	6
Permit to Construct (IDAPA 58.01.01.201).....	6
Visible Emissions (IDAPA 58.01.01.625)	6
Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70).....	7
PSD Classification (40 CFR 52.21)	7
NSPS Applicability (40 CFR 60)	7
NESHAP Applicability (40 CFR 61)	7
NESHAP Applicability (40 CFR 63)	7
Permit Conditions Review	7
PUBLIC REVIEW.....	9
Public Comment Opportunity	9
APPENDIX A – FACILITY DRAFT COMMENTS.....	10

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS No.	Chemical Abstracts Service registry number
CBP	concrete batch plant
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
FEC	Facility Emissions Cap
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
HMA	hot mix asphalt
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
ISO	the International Organization for Standardization
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides

NSPS	New Source Performance Standards
O&M	operation and maintenance
O ₂	oxygen
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PERF	Portable Equipment Relocation Form
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
RAP	recycled asphalt pavement
RFO	reprocessed fuel oil
RICE	reciprocating internal combustion engines
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
TEQ	toxicity equivalent
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
TSP	total suspended particulate
VOC	volatile organic compounds
yd ³	cubic yards
µg/m ³	micrograms per cubic meter

FACILITY INFORMATION

Description

Northwest Pipeline, LLC, operates an existing natural gas pipeline compressor station which is located at 28000 Pipeline Road, Bruneau, Idaho. At this facility three natural gas-fired turbines are used to power natural gas compressors for a natural gas pipeline regulated by Federal Energy Regulatory Commission. The three gas turbines are a Solar Saturn T-1200 Turbine (Compressor No. 1), a Solar Saturn T-1300 Turbine (Compressor No. 2), and a Solar Saturn T-1300 Turbine (Compressor No. 3). The Compressor No. 1 and Compressor No. 2 are stationary. The Compressor No. 3 is mounted on skids making it portable. The purpose of the portable gas turbine is to deliver additional compressor power at the compressor station in times of high natural gas demand.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

April 7, 1994 Permit Number 118-00002, initial permit for the compressor station with three natural gas-fired turbines for natural gas transmission (A, but will become S upon issuance of this permit)

Application Scope

This PTC is a revision of an existing PTC for a facility name change.

Application Chronology

July 8, 2014 DEQ received an application.
 July 28, 2014 DEQ determined that the application was incomplete.
 September 25, 2014 DEQ received supplemental information from the applicant.
 October 16, 2014 DEQ determined that the application was complete.
 December 1, 2014 DEQ made available the draft permit and statement of basis for peer and regional office review.
 December 12, 2014 DEQ made available the draft permit and statement of basis for applicant review.
 January 14, 2015 DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION ¹

Sources	Control Equipment	Emission Point ID No.
Compressor No. 1 (Turbine unit No. 1) Manufacturer: Solar Model: Saturn T-1200 Turbine Burner type: natural gas turbine Fuel: natural gas Max rating: 1,199 hp @ISO conditions Rated heat input capacity: 11.78 MMBtu/hr Installed date ² : 1966	None	Exit height: 24 ft (7.3 m) (minimum) Exit diameter: 2.0 ft (0.62 m) Average volumetric flow rate: 24,807 acfm (minimum) Exit temperature: 830°F (minimum)

Sources	Control Equipment	Emission Point ID No.
<u>Compressor No. 2 (Turbine unit No. 2)</u> Manufacturer: Solar Model: Saturn T-1300 Turbine Burner type: natural gas turbine Fuel: natural gas Max rating: 1,339 hp @ISO conditions Rated heat input capacity: 13.26 MMBtu/hr Installed date ² : 1993	None	Exit height: 29 ft (8.8 m) (minimum) Exit diameter: 2.5 ft (0.76 m) Average volumetric flow rate: 26,813 acfm (minimum) Exit temperature: 885°F (minimum)
<u>Compressor No. 3 (Turbine unit No. 3)</u> Manufacturer: Solar Model: Saturn T-1300 Turbine Burner type: natural gas turbine Fuel: natural gas Max rating: 1,339 hp @ISO conditions. Skid mounted, portable unit Rated heat input capacity: 13.26 MMBtu/hr Installed date ² : 1994	None	Exit height: 17 ft (5.18 m) (minimum) Effective stack height: 26 ft (7.99 m) Total heat release: 685 kcal/sec (minimum) Average volumetric flow rate: 26,813 acfm (minimum) Exit temperature: 885°F (minimum)

¹ information taken from the existing PTC issued on 4/7/1994

² information provided by the facility on 1/7/2015

Emissions Inventories

The project is for a facility name change. Emissions inventories are not required.

Ambient Air Quality Impact Analyses

The project is for a facility name change. Ambient air quality impact analyses are not required.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Owyhee County, which is designated as attainment or unclassifiable for PM_{2.5}, PM₁₀, SO₂, NO₂, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The facility is a minor source because facility-wide emissions for regulated air pollutants without any limitations and controls are below the applicable major source thresholds.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the facility name change. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625..... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit
The facility is a minor source for Title V program; therefore, Tier I operating permit is not required.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality
The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1) and is not subject to PSD.

NSPS Applicability (40 CFR 60)

The existing turbine units No. 2 and No. 3 are subject to 40 CFR 60 Subpart GG because they commenced construction after October 3, 1977.

The existing turbine unit No. 1 was installed in 1966, according to the information provided by the facility on 1/7/2015, and is therefore not subject to 40 CFR 60 Subpart GG. However, if it is modified or reconstructed as defined in 40 CFR 60 after October 3, 1977, it will be subject to 40 CFR 60, Subpart GG.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

NESHAP Applicability (40 CFR 63)

The facility is not subject to any NESHAP standards in 40 CFR Part 63.

Permit Conditions Review

This section describes only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action. New text is the bold text; deleted text is the text with strike-out.

The new PTC template is used for this project; it changes permit condition numbers. The following table provides the cross reference for the two PTCs.

New Permit	Old Permit	New Permit	Old Permit	New Permit	Old Permit
1.1	NA	2.2	1.2	2.8	5.1
1.2	NA	2.3	2.1, 2.2, 2.3	2.9	5.2
1.3	NA	2.4	2.4	2.10	5.3
Table 1.1	1.3	2.5	3.1	Appendix A	Appendix A
NA	1.4	2.6	4.1	General Provisions	General Provisions
2.1	1.1	2.7	4.2		

Section 1 – Permit Scope

This section is new. This section describes the permit scope for the project.

Table 1.1

Table 1.1 includes the regulated sources in this PTC.

Section 2 – Natural Gas-Fired Turbines

Permit Condition 2.1

For clarification purpose, minor changes are made to Permit Condition 2.1. It reads as follows:

“2.1 Process Description

The facility consists of three natural gas-fired turbine compressors in Bruneau, near the C.J. Strike Reservoir. Refer to Table 1.1 for equipment descriptions. They are stationary gas turbine as defined in 40 CFR 60.331(a)”

Stationary gas turbine is defined in 40 CFR 60.331(a) as: any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability.

Permit Condition 2.3

To follow the new PTC template, “from each turbine” is added to Permit Condition 2.3 as follows.

- “2.3.1 Emissions of nitrogen oxides (NO_x) **from each turbine stack** shall not exceed 0.015 percent (%) by volume as required in 40 CFR 60.332(c) and the pound per hour (lb/hr) or tons per year (T/yr) values listed in Appendix A, based on 8,760 hours of operation per year.
- 2.3.2 Emissions of sulfur dioxide (SO₂) **from each turbine stack** shall not exceed 0.015 percent (%) by volume as required in 40 CFR 60.333(a) and the pound per hour (lb/hr) or tons per year (T/yr) values listed in Appendix A, based on 8,760 hours of operation per year.
- 2.3.3 Emissions of total suspended particulate (TSP), carbon monoxide (CO), and volatile organic compounds (VOC) **from each turbine stack** shall not exceed the pound per hour (lb/hr) or tons per year (T/yr) values listed in Appendix A, based on 8,760 hours of operation per year.”

Permit Condition 2.4

The permit condition on opacity from the new PTC template replaces the old opacity permit condition. It reads as follows:

“Emissions from each turbine stack, or any other stack, vent, or functionally equivalent opening associated with the each turbine stack, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625. Visible emissions shall not exceed twenty percent (20%) opacity over a period or periods aggregating more than three (3) minutes in any sixty (60) minute period as delineated in IDAPA 16.01.01.201 and the Department's "Evaluation of Visible Emissions Manual."”

Permit Condition 2.5

For clarification purpose, minor changes are made to Permit Condition 2.5. It reads as follows:

2.5 Fuel Sulfur Limit

The permittee shall burn, in **each** the stationary gas turbine, fuel which contains 0.8 weight percent (wt%), or less, sulfur, in accordance with 40 CFR 60.333(b).

Permit Conditions 2.6, 2.7, 2.10

The existing turbine unit No. 2 and unit No. 3 are subject to 40 CFR 60, Subpart GG and therefore, are subject to the requirements of fuel monitoring and NO_x and SO₂ performance test. “No. 1” in these permit conditions appears a typo and should be “No. 2”. Also by looking at Permit Conditions 2.9 and 2.10, 40 CFR 60.334(b) in the old permit probably should be 40 CFR 60.334(c). According to the facility’s 1/7/2015 submittal, the testing requirements in PC 2.7 have been fulfilled. Minor changes are made to PCs 2.6, 2.7, & 2.10. They read as follows:

“2.6 Fuel Monitoring

The permittee shall monitor nitrogen content and sulfur content of the fuel being fired in the No. 2 + and No. 3 turbines in accordance with 40 CFR 60.334 (cb), or an alternative method, approved by the Environmental Protection Agency (EPA). A copy of the EPA-approved alternative method shall be presented to the Department prior to implementation.

2.7 NO_x and SO₂ Performance Test

Within sixty (60) days after achieving maximum production rate, but not later than one hundred eighty (180) days after initial start-up, the permittee shall conduct a performance test to measure the oxides of nitrogen and sulfur

dioxide emissions from the No. 2 + and No. 3 turbines as required by 40 CFR 60.8 and in accordance with the test methods and procedures in 40 CFR 60.335. **The testing requirements were fulfilled in 1993 and 1995 for turbine unit No. 2 and unit No. 3, respectively.**

2.10 Reporting Requirement

The permittee shall provide a written report to the Department of any period during which the sulfur content of the fuel being fired in the No. 2 + and No. 3 gas turbines exceeds 0.8 percent by weight (wt.%) in accordance with 40 CFR 60.334(c), within 10 days of discovering the exceedence.”

Section 3 - General Provisions

The General Provisions from the 1994 PTC are replaced with the General Provisions from the new PTC template.

PUBLIC REVIEW

Public Comment Opportunity

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04.

APPENDIX A – FACILITY DRAFT COMMENTS

The following comments were received from the facility on January 7, 2015:

The facility responded DEQ's comments/questions in the draft permit and SOB.

FROM THE DRAFT PERMIT

DEQ Comment A1: When was the turbine constructed, modified, or reconstructed for compressor Unit No. 1?

Facility Comment A1 Response

The turbine was installed in 1966.

DEQ Comment A2 #1: For compressor Unit No. 2, the model in the 1994 permit was Saturn T-1300. However, the model in the facility's 9/25/2014 submittal is Solar Saturn 10-1,300 Turbine. Would you let me know which one is correct?

Comment A2 #1 Response

Saturn T-1300 is correct. 1,300 is the horsepower rating. I've seen these Saturns sometimes listed at T-1302 but I've always referred to them as Saturn T-1300.

DEQ Comment A2 #2: For compressor Unit No. 2, when was the turbine constructed, modified, or reconstructed?

Comment A2 #2 Response

The turbine was constructed in 1993.

DEQ Comment A3 #1: For compressor Unit No. 3, the model in the 1994 permit is Saturn T-1300. However, the model in the facility's 9/25/2014 submittal is Solar Saturn 10-1,300 Turbine. Would you let me know which one is correct?

Comment A3 #1 Response

Saturn T-1300 is correct.

DEQ Comment A3 #2: For compressor Unit No. 3, when was the turbine constructed, modified, or reconstructed?

Comment A3 #2 Response

The turbine was constructed in 1994. This is a portable unit that is not onsite.

DEQ Comment A4 #1 for PC 2.6: Does each turbine use water or steam injection to control NOx?

Comment A4 #1 Response

Each turbine does not use water or steam injection to control NOx.

DEQ Comment A4 #2 for PC 2.6: what is the monitoring method(s) that the facility is currently using for each turbine?

Comment A4 #2 Response

There was an initial NOx performance test when the turbines were installed. Additionally, when the turbine engine core is changed out, the NOx emissions are checked by a third party contractor. The engines are also monitored during operation 24 hours per day to ensure they are running properly. The gas control department in Salt Lake is constantly monitoring the entire pipeline system for proper operation. The fuel consumption and operation hours are also tracked and stored in the company's SCADA system. For SO₂, Williams maintains a gas tariff that specifies the maximum sulfur content of natural gas to be 20 grains sulfur per 100scf or less.

DEQ Comment A4 #3 under PC 2.6: are there any State or EPA approved monitoring procedures?

Comment A4 #3 Response

Below is language from the Williams Northwest Pipeline Boise compressor station. These have been State and EPA approved for turbines.

Monitoring and Recordkeeping Requirements

- 3.11 The permittee shall monitor and record the monthly fuel consumption (in scf) and/or monthly operating hours for each turbine to demonstrate compliance with the annual NO_x emissions limit in Permit Condition 3.3. Records shall be maintained in accordance with the facility-wide Monitoring and Recordkeeping Permit Condition 2.11.

If fuel consumption is monitored:

- The fuel flow meter shall be calibrated once each year. The date and time of each calibration and any maintenance performed on the fuel meters shall also be recorded. Each calendar month, record the

fuel consumption for the most recent 12-month period. The annual NO_x emissions shall be calculated monthly for the most recent 12-month period, based on the latest emission test results.

If monthly hours of operation are monitored:

- Each calendar month record the hours of operation for the most recent 12-month period. The annual NO_x emissions shall be calculated monthly for the most recent 12-month period, based on the latest emission test results.

[IDAPA 58.01.01.322.06, 07, 5/1/94]

- 3.12 Within the third year of the permit term, the permittee shall conduct performance tests to measure NO_x emissions from each of the turbine stacks to demonstrate compliance with Permit Condition 3.2 and the pound-per-hour NO_x emissions limit in Permit Condition 3.3. The performance tests shall be conducted in accordance with the test methods and procedures in IDAPA 58.01.01.157, Permit Condition 2.10, and 40 CFR 60.335.

[IDAPA 58.01.01.322.06, 09, 5/1/94]

- 3.13 The permittee shall determine compliance with fuel sulfur content standards established in the NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines, according to 40 CFR 60.334(h)(3)(i):

- The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less. This information shall be available to DEQ representatives upon request.

[40 CFR 60 Subpart GG]

DEQ Comment A4 #4 for PC 2.6: would you review 40 CFR 60.334(a), (b), (c) and (h) to identify any requirements applicable to each turbine?

Comment A4 #4 Response

Williams maintains a gas tariff that specifies the maximum sulfur content of natural gas to be 20 grains sulfur per 100scf or less.

DEQ Comment A5 for PC 2.7: When was the source test performed? Please provide source test results and summary test report.

Comment A5 Response

The source test for Unit 2 was performed in 1993.

The source test for Unit 3 was performed in 1995.

FROM THE STATEMENT OF BASIS

DEQ Comment A1: Are the three units stationary gas turbines as defined in 40 CFR 60.331(a)?

Comment A1 Response

The three turbines in the Little Valley permit are natural gas-fired stationary gas turbines used to compress natural gas and send the pipeline natural gas further down the pipeline. One turbine (Unit 3) is a portable unit. This unit has been permitted at many different Williams Northwest Pipeline facilities. The turbine will be placed at a compressor station based on operational need. Currently, Unit 3 is not onsite. The piping for Unit 3 is in place should Williams ever decide to put the unit back onsite.