



EQT Production Company

**Class I Administrative Update
OXF 157 Natural Gas Production Site
Permitted under G70-A112**

West Union, West Virginia

Prepared By:



**ENVIRONMENTAL RESOURCES MANAGEMENT, Inc.
Hurricane, West Virginia**

June 2015



625 Liberty Ave, Suite
1700
Pittsburgh PA 15222
www.eqt.com

TEL: (412) 395-3699

R. Alex Bosiljevac
Environmental
Coordinator

June 11, 2015

Mr. William F. Durham, Director
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, West Virginia, 25304

**RE: Class I Administrative Update
EQT Production Company
OXF-157 Natural Gas Production Site**

Dear Director Durham:

Enclosed is a Class I Administrative Update for EQT Production Company's OXF-157 Natural Gas Production Site. In the G70-A Class II General Permit (G70-A112) currently filed with the WVDAQ, EQT filed for the authority to operate ten (10) line heaters each with a heat input rating of 1.0 MMBtu/hr. The proposed change would alter this configuration to two (2) line heaters with a heat input rating of 4.5 MMBtu/hr and one (1) line heater with a hear input of 1.00 MMBtu/hr. The potential to emit (PTE) will not be affected by these changes.

Should you have any questions, please contact me at (412) 395 – 3699.

Sincerely,

A handwritten signature in blue ink, appearing to read 'RAB', with a large, sweeping loop extending from the end of the signature.

Alex Bosiljevac
EQT Corporation

Enclosures



WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

**PERMIT DETERMINATION FORM
(PDF)**

FOR AGENCY USE ONLY: PLANT I.D. # _____

PDF # _____ PERMIT WRITER: _____

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):

EQT Production Company

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE):

OXF-157 Natural Gas Production Facility

3. NORTH AMERICAN INDUSTRY
CLASSIFICATION SYSTEM (NAICS)
CODE:

21111

4A. MAILING ADDRESS:

**625 Liberty Avenue, Suite 1700
Pittsburgh, PA 15222**

4B. PHYSICAL ADDRESS:

**2520 Maxwell Ridge Road
West Union, WV 26456**

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE MAP AS ATTACHMENT A):

While traveling Route 50 West at the town of West Union turn left onto WV State Route 18. Travel for about 2 miles and turn left onto Maxwell Ridge (Route 13). Continue for over 2.5 miles, and make a sharp left onto Oil Well Rd. Follow Oil Well Road for 0.6 miles and make a left at the fork. Then travel for 0.2 miles and make a sharp left (next left available). After a quarter of a mile make a left. Continue for 0.5 miles and the facility will appear on your right.

5B. NEAREST ROAD:

Oil Well Road

5C. NEAREST CITY OR TOWN:

West Union, WV

5D. COUNTY:

Doddridge

5E. UTM NORTHING (KM):

4,343.00

5F. UTM EASTING (KM):

520.16

5G. UTM ZONE:

17

6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED:

Alex Bosiljevac

6B. TITLE:

**Environmental
Coordinator**

6C. TELEPHONE:

(412)295-3699

6D. FAX:

6E. E-MAIL:

ABosiljevac@eqt.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):

017 - 00139

7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH THIS PROCESS (FOR AN EXISTING FACILITY ONLY):

G70-A112

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST: **NO**

8A. TYPE OF EMISSION SOURCE (CHECK ONE):

☐ NEW SOURCE

☒ ADMINISTRATIVE UPDATE

☐ MODIFICATION

☐ OTHER (PLEASE EXPLAIN IN 11B)

8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN?

☒ YES

☐ NO

9. IS DEMOLITION OR PHYSICAL RENOVATION AT AN EXISTING FACILITY INVOLVED?

☐ YES

☒ NO

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE:

07/15/2015

10B. DATE OF ANTICIPATED START-UP:

07/15/2015

11A. PLEASE PROVIDE A DETAILED PROCESS FLOW DIAGRAM SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS ATTACHMENT B.

11B. PLEASE PROVIDE A DETAILED PROCESS DESCRIPTION AS ATTACHMENT C.

12. PLEASE PROVIDE MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS ATTACHMENT D. FOR CHEMICAL PROCESSES, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.

13A. REGULATED AIR POLLUTANT EMISSIONS:

⇒ **FOR A NEW FACILITY**, PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ **FOR AN EXISTING FACILITY**, PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM	0.00	0.00
PM ₁₀	0.00	0.00
VOCs	0.00	0.00
CO	0.00	0.00
NO _x	0.00	0.00
SO ₂	0.00	0.00
Pb	0.00	0.00
HAPs (AGGREGATE AMOUNT)	0.00	0.00
TAPs (INDIVIDUALLY)*	0.00	0.00
OTHER (INDIVIDUALLY)*	0.00	0.00

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL SUPPORTING CALCULATIONS AS ATTACHMENT E.

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

14. CERTIFICATION OF DATA

I, KENNETH KIRK, (TYPE NAME) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A **RESPONSIBLE OFFICIAL** ** (PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: 

TITLE: EXECUTIVE VICE PRESIDENT

DATE: 06 / 11 / 15

** THE DEFINITION OF THE PHRASE 'RESPONSIBLE OFFICIAL' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS:

☒ ATTACHMENT A ☒ ATTACHMENT B ☒ ATTACHMENT C ☐ ATTACHMENT D ☒ ATTACHMENT E

RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

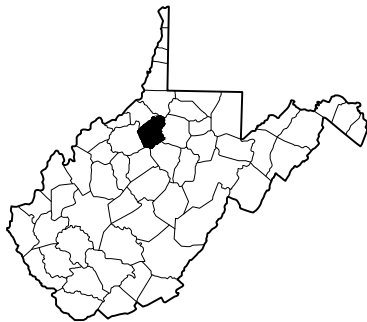
THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE:

www.dep.wv.gov/daq

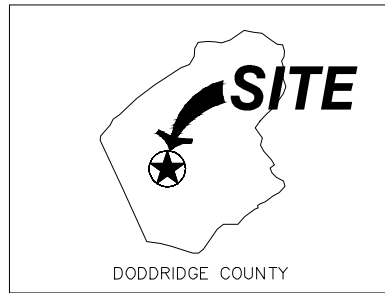
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ATTACHMENT A	AREA MAP
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ATTACHMENT C	PROCESS DESCRIPTION
ATTACHMENT D	SAFETY DATA SHEETS (SDS) – NOT INCLUDED
ATTACHMENT E	SUPPORTING CALCULATIONS

Attachment A



WEST VIRGINIA



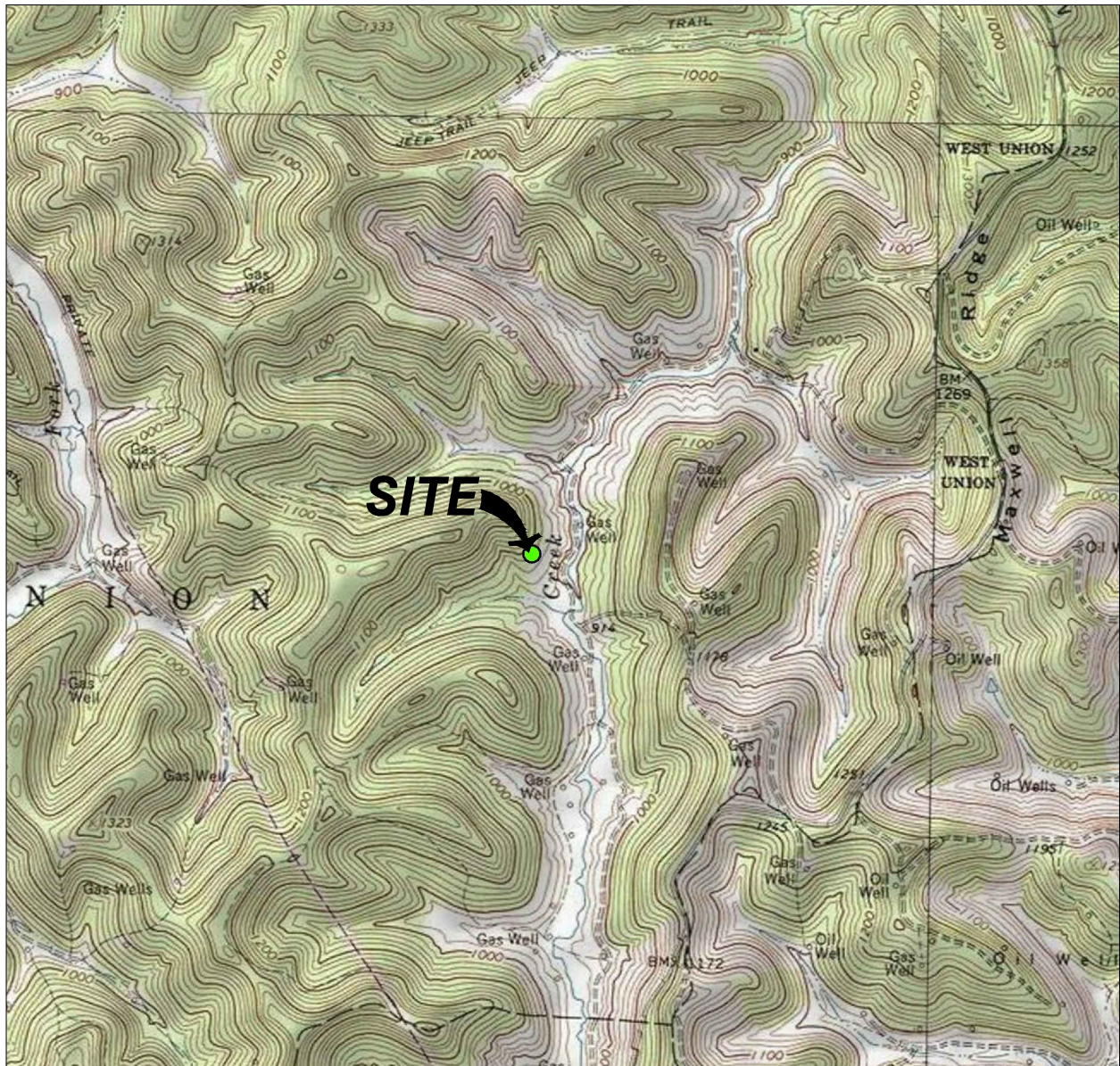
DODDRIDGE COUNTY



LAT. 39.2360 LON. -80.7663
CITY OF WEST UNION
DODDRIDGE COUNTY
WEST VIRGINIA



SCALE (IN FEET)



SITE LOCATION MAP

ADAPTED FROM USGS

REVISIONS ARE TO BE MADE ON THE CADD FILE ONLY



EQT PRODUCTION COMPANY

2520 MAXWELL ROAD
WEST UNION, WEST VIRGINIA

CADD Review

CHK'D GM

0250395

Drawn By
MLB/8-28-14

Environmental Resources Management

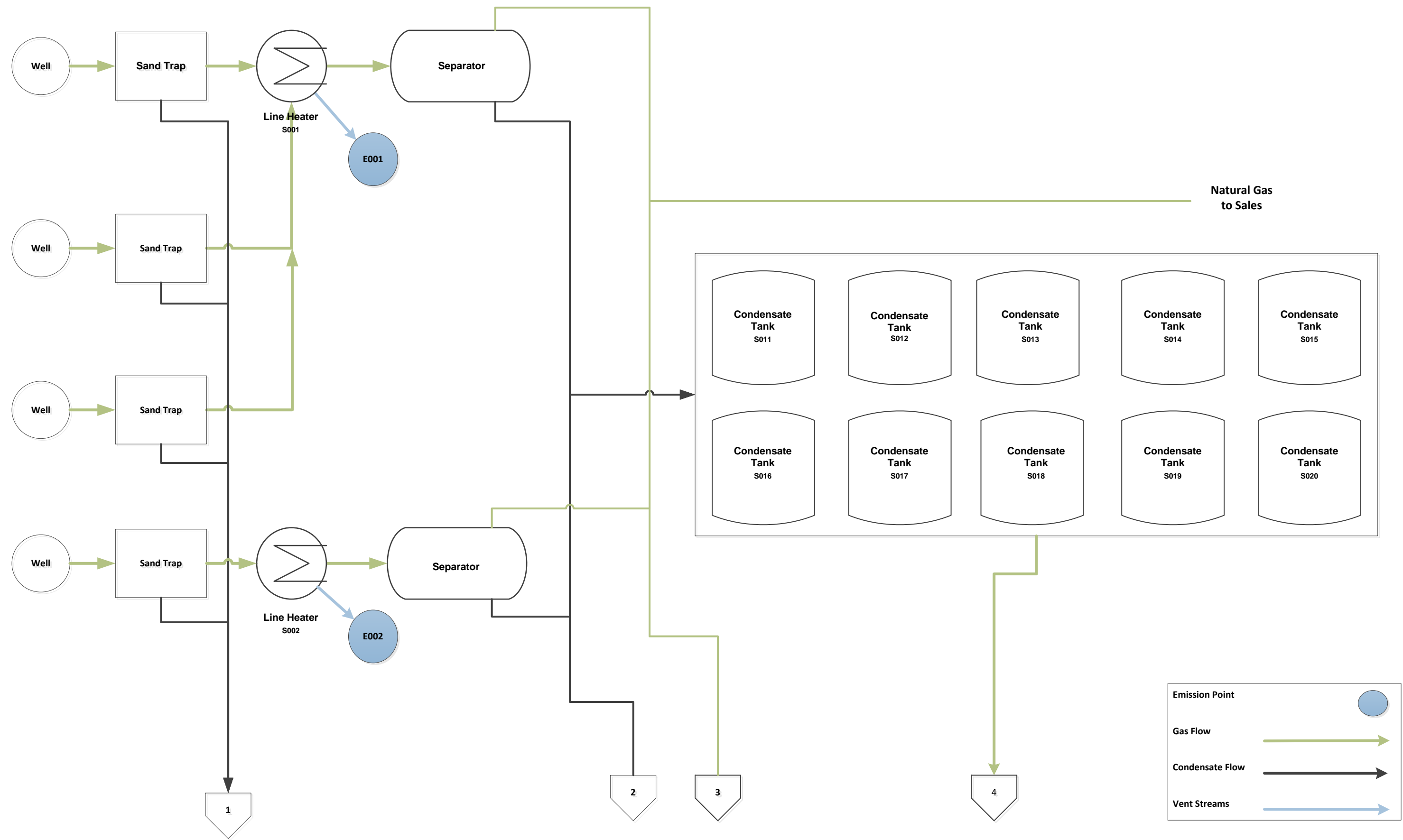
ATTACHMENT F

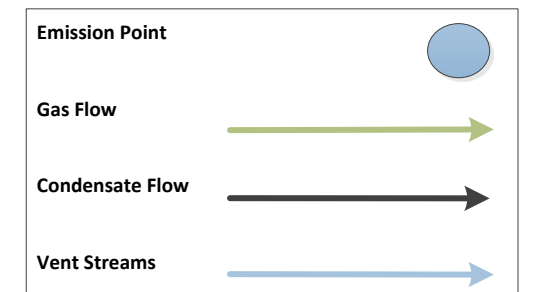
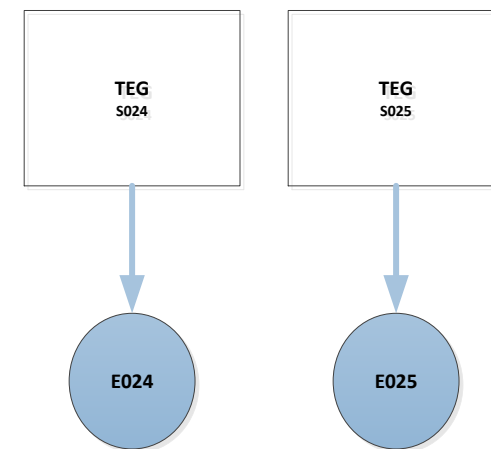
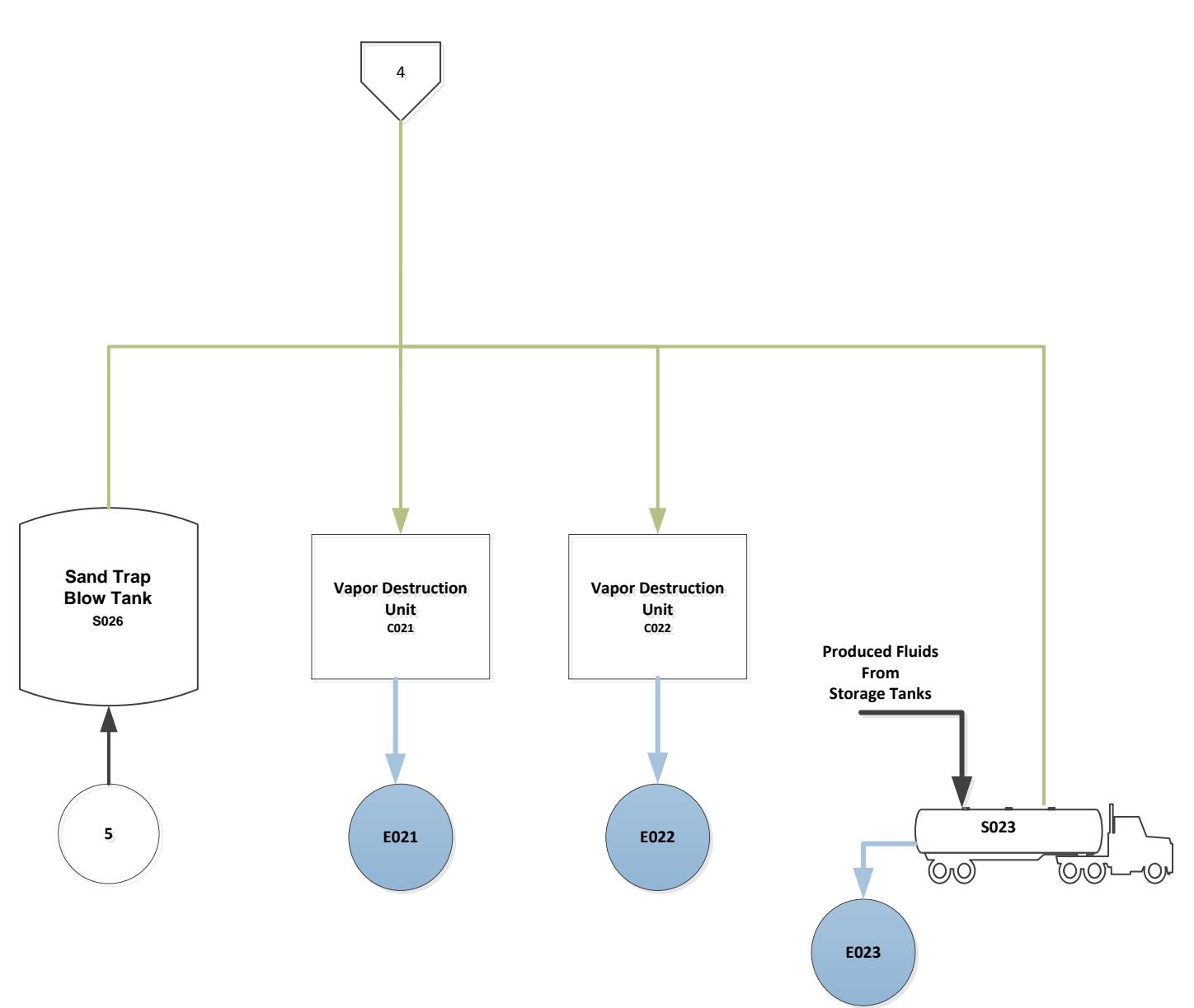
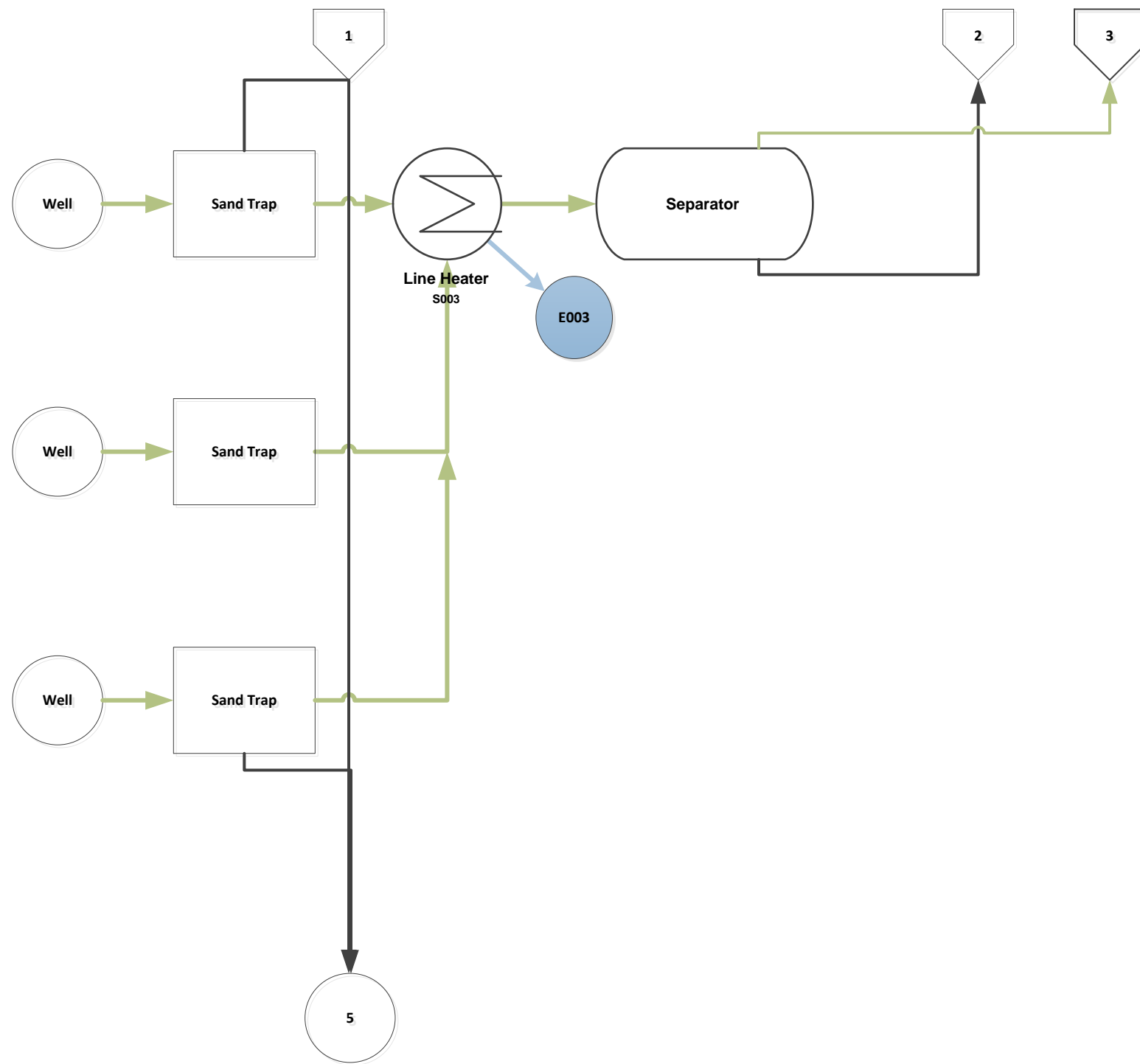
Attachment B

Attachment B

OXF 157 Natural Gas Production

Process Flow Diagram





Attachment C

Attachment C

Process Description

This Class I Administrative Update reflects a proposed change in the configuration of line heaters at the OXF-157 natural gas production site. In the Class II General Permit G70-A (G70-A112) permit currently filed with the WVDAQ, EQT Production Company filed for the authority to operate ten (10) line heaters each with a heat input rating of 1.0 MMBtu/hr. The proposed change would alter this configuration to two (2) line heaters each with a heat input rating of 4.5 MMBtu/hr and one (1) line heater with a heat input rating of 1.00 MMBtu/hr. The potential-to-emit will not be affected by these changes.

EQT will also reduce the number of natural gas wells from ten (10) to seven (7) at the OXF 157 Site.

There are no other proposed changes to the process as permitted in registration G70-A112.

Incoming raw natural gas from the seven (7) wells enters the site through a pipeline. The raw gas is first routed through the sand traps to remove any sediment. Fluids from these sand traps are manually blowdown to the sand trap blowdown tank (S026), as needed. From the sand traps, raw gas is routed through line heaters (S001-S010) to assist with the phase separation process in the downstream three-phase separators. In the separator, produced fluids are removed from the raw gas and transferred to the condensate storage tanks (S011-S020). Emissions from the condensate tanks and sand trap blowdown tank are directed to one of the two enclosed combustion units (C021, C022) and burnt. Produced fluids are pumped into a tank truck (S023) on an as-needed basis and are disposed of off-site. Vapors during truck loading will be controlled by either of the enclosed combustion units.

Two thermoelectric generation units (S024, S025) are operated with natural gas and provide power to the OXF-157 natural gas production site.

A process flow diagram is included as Attachment B.

Attachment E

Line Heaters S001 - S002

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Boiler Rating (MMBtu/hr)	Heat Value of Natural Gas (Btu/scf)	Annual Operating Hours	Max. Hourly Emissions. (lb/hr)	Max. Annual Emissions. (tpy)
NOx	100	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.44	1.93
CO	84	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.37	1.62
VOC's	5.5	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.024	0.11
PM ₁₀	7.6	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.034	0.15
SO ₂	0.6	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.00	0.012
Pb	0.0005	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	<0.001	<0.001
Benzene	0.0021	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	<0.001	<0.001
Formaldehyde	0.075	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	<0.001	0.00
Hexane	1.8	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.008	0.035
Toluene	0.0034	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	<0.001	<0.001
CO ₂	120,000	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	529.41	2318.82
CH ₄	2.3	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.010	0.04
N ₂ O	2.2	lb/10 ⁶ scf	AP-42 Chapter 1.4	4.50	1,020	8,760	0.010	0.043
Total CO ₂ e							532.56	2332.60

Notes:
Emission rates displayed above represent the max. hourly and max. annual emissions for one line heater. Two 4.5 MMBtu/hr line heaters are included with this Administrative Update.
¹- AP-42, Chapter 1.4 references are from the July 1998 revision.
²-Max. Annual Emissions based upon Max. Hourly Emissions @ 8760 hr/yr.
-CO₂ equivalency solved for using Global Warming Potentials found in 40CFR98 Table A-1 (Updated January 2014). GWP CO₂=1, GWP CH₄=25, GWP N₂O=298

Example Equations:
Max. Hourly Emission Rate (lb/hr) = Emission Factor (lb/10⁶ scf) ÷ Heating Value of Natural Gas (Btu/scf) x Boiler Rating (MMBtu/hr)

Line Heaters S003

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Boiler Rating (MMBtu/hr)	Heat Value of Natural Gas (Btu/scf)	Annual Operating Hours	Max. Hourly Emissions. (lb/hr)	Max. Annual Emissions. (tpy)
NOx	100	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	0.10	0.43
CO	84	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	0.08	0.36
VOC's	5.5	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	0.005	0.02
PM ₁₀	7.6	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	0.007	0.03
SO ₂	0.6	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	<0.001	0.003
Pb	0.0005	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	<0.001	<0.001
Benzene	0.0021	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	<0.001	<0.001
Formaldehyde	0.075	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	<0.001	<0.001
Hexane	1.8	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	0.002	0.008
Toluene	0.0034	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	<0.001	<0.001
CO ₂	120,000	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	117.65	515.29
CH ₄	2.3	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	0.002	0.01
N ₂ O	2.2	lb/10 ⁶ scf	AP-42 Chapter 1.4	1.00	1,020	8,760	0.002	0.009
Total CO ₂ e							118.35	518.36

Notes:
Emission rates displayed above represent the max. hourly and max. annual emissions for one line heater. There is one proposed 1.00 MMBtu/hr line heater included in this Administrative Update.
¹- AP-42, Chapter 1.4 references are from the July 1998 revision.
²-Max. Annual Emissions based upon Max. Hourly Emissions @ 8760 hr/yr.
-CO₂ equivalency solved for using Global Warming Potentials found in 40CFR98 Table A-1 (Updated January 2014). GWP CO₂=1, GWP CH₄=25, GWP N₂O=298

Example Equations:
Max. Hourly Emission Rate (lb/hr) = Emission Factor (lb/10⁶ scf) ÷ Heating Value of Natural Gas (Btu/scf) x Boiler Rating (MMBtu/hr)