

G70#
New ID#

Construction
Tracy

45CSR13 Administrative Update, Construction, Modification, Relocation, Temporary Permit or General Permit Registration Incomplete Application

A complete application is demonstrated when all of the information required below is properly prepared, completed and attached. The items listed below are required information which must be submitted with a 45CSR13 permit application. Any submittal will be considered incomplete if the required information is not included. The applicant must submit a complete application in order to receive a 45CSR13 permit.

- Class I legal advertisement not published in a newspaper certified to accept legal advertisements and original affidavit submitted.
- Application fee AND/OR additional application fees not included:
 - \$250 Class I General Permit
 - \$300 Class II Administrative Update
 - \$1,000 Construction, Modification, Relocation or Temporary Permit
 - \$500 Class II General Permit
 - \$1,000 NSPS
 - \$2,500 NESHAP
 - \$2,500 45CSR27 Pollutant
 - \$5,000 Major Modification
 - \$10,000 Major Construction
- Original and two (2) copies of the application not submitted.
- File organization – application pages are not numbered or in correct order, application is not bound in some way, etc.
- Confidential Business Information is not properly identified.
- General application forms not completed and signed by a responsible official.
- Authority of Corporation form not included – required if application is signed by someone other than a responsible official.
- Applicant is not registered with the West Virginia Secretary of State's Office.
- Copy of current Business Registration Certificate not included.
- Process description, including equipment and emission point identification numbers, not submitted.
- Process flow diagram, including equipment and emission point identification numbers, not submitted.
- Plot plan, including equipment and emission point identification numbers, not submitted.
- Applicable technical forms not completed and submitted:
 - Emission Point Data Summary Sheets
 - Emission Unit Data Sheets
 - Air Pollution Control Device Sheets
 - Equipment List Form
- Emission calculations not included – emission factors, references, source identification numbers, etc.
- Electronic submittal diskette not included.



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

June 12, 2015

Brett Loflin
Vice President Regulatory Affairs
48 Donley Street, Suite 601
Morgantown, WV 26501

RE: Application Status: Complete
Northeast Natural Energy, LLC
Beach Well Pad Production Facility
Permit Application G70-A157
Plant ID No. 061-00217

Dear Mr. Loflin:

Your application for a General Permit Registration for a Natural Gas Well Pad was received by this Division on April 29, 2015 and assigned to the writer for review. Upon review of said application, it has been determined that the application was complete as submitted, therefore, the statutory review period commenced on May 29, 2015.

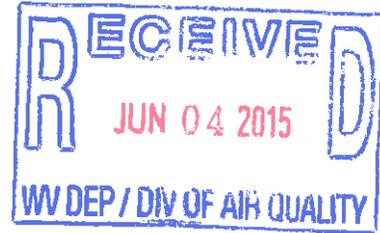
In the case of this application, the agency believes it will take approximately 45 days to make a final permit determination.

This determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit determination.

Should you have any questions, please contact me at (304) 926-0499 ext. 1211.

Sincerely,

William T. Rothwell II, P.E.
Engineer



June 1, 2015

Attn: Mr. William Durham, Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

I.D. No. 061-00217 Reg. G70-A157
Company Northeast Natural Energy LLC
Name: Beach Wellpad Region II
Initials WTK

RE: Notification Required per 40CFR60 and WV G70 A

Dear Mr. Durham,

Please consider this notification of construction and initial start-up for a natural gas well site compressor being operated in Monongalia County, WV. Construction Date: May 11th, 2015 and Initial Startup May 29, 2015.

The Plant Identification number is 061-00217 and the Application number for general permit G70 A in WV is G70-A157. The following information is supplied per requirements of 40CFR60:

1. Name and Address of the owner or operator: Northeast Natural Energy, 48 Donley Street, Morgantown, WV 26501.
2. Address of the affected source: 300 Mooresville Road, Core, WV 26541
3. Engine information:
 - Make and model – Caterpillar G3516B
 - Engine family – LB45 - Natural Gas Lean burn Spark Ignition Four Stroke Internal Combustion Engine.
 - Serial Number – JEF02327
 - Model Year – 2013
 - Maximum Engine Power – 1380 HP
 - Engine Displacement – 4230 cu. in.
4. Engine control equipment – DCL 2DC65-14 Catalytic Converter
5. Fuel Used – RG (Raw Natural Gas)

If you should need any additional information please do not hesitate to contact me.

Sincerely,

Hollie M. Medley
Regulatory Coordinator
Voice: 304.241.5752, ext 7108
Email: hmedley@nne-llc.com



west virginia department of environmental protection

Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0475

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

COPY

**CONSENT ORDER
ISSUED UNDER THE
AIR POLLUTION CONTROL ACT
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 5, SECTION 4**

TO: Northeast Natural Energy, LLC
Brett Loflin, VP Regulatory Affairs
707 Virginia Street, East Suite 1200
Charleston, WV 25301

DATE: **MAY 11 2015**
ORDER NO.: CO-R13-E-2015-12
FACILITY ID NO.: 061-00217
(Beach Well Pad)

INTRODUCTION

This Consent Order is issued by the Director of the Division of Air Quality (“Director”), under the authority of West Virginia Code, Chapter 22, Article 5, Section 1 *et seq.* to Northeast Natural Energy, LLC (“Company”).

I. FINDINGS OF FACT

In support of this Order, the Director finds the following:

1. Northeast Natural Energy, LLC (“Company”) operates the Beach Well Pad, a Marcellus Shale natural gas production site (“Beach Well Pad”) consisting of four horizontal wells located near Pentress, Monongalia County, West Virginia. The Facility operates in a dry section of the Marcellus Shale formation, and thus it does not produce significant quantities of hydrocarbons classified as volatile organic compounds (“VOC”) and as such does not have a well pad operating permit issued by the Director.
2. Natural gas production from the Beach Well Pad is transported by a third-party midstream pipeline company. Currently, the third-party pipeline company is experiencing temporary flow restrictions due to lost compression resulting in high pressure within the pipeline. The high pressure restricts the flow of natural gas from the Beach Well Pad. The mid-stream compression is not expected to be restored until the first or second quarter 2016.

Promoting a healthy environment.

3. On April 14, 2015, a representative of the Company contacted representatives of the Director to discuss placing four natural gas powered gas processing units and a natural gas powered compressor engine at the Beach Well Pad to process natural gas and overcome the mid-stream pipeline high pressure to boost production. The proposed engine requires a 45CSR13 construction and operating permit from the Director. However, the Company proposed installing and operating the gas processing units and the engine prior to issuance of the final permit.
4. On April 29, 2015 the Company submitted permit application 45CSR13-G70-A157 to the Director. In the application the Company provided details of the proposed engine as follows: Ariel Frame Caterpillar 3516BLE, spark-ignition, four-stroke, ultra-lean burn, 1,380 HP engine with a manufacture date of June 28, 2013 and equipped with an exhaust gas oxidation catalyst for the reduction of carbon monoxide emissions. An engine of this size, configuration, and vintage is subject to the provisions of 40CFR60, Subpart JJJJ, "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines" ("NSPS") and to the provisions of 40CFR63, Subpart ZZZZ "National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" ("MACT"). Compliance with the NSPS entails annual stack testing for carbon monoxide and periodic maintenance of the engine. Compliance with the NSPS satisfies the requirements of the MACT. Permit application 45CSR13-G70-A157 also lists the four gas processing units as having a design capacity of 1.0 million BTU per hour.

II. ORDER FOR COMPLIANCE

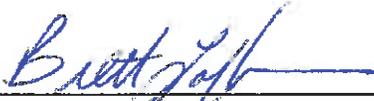
Now, therefore, in accordance with Chapter 22, Article 5, Section 1 et seq. of the West Virginia Code, it is hereby agreed between the parties, and ORDERED by the Director:

1. The Company shall immediately, upon installation of the compressor engine, comply with the provisions of the NSPS and MACT.
2. The Company shall submit to the Director a complete permit application 45CSR13-G70-A157 for the installation of the engine within 30 days of execution of the Consent Order.
3. The Company shall expeditiously correct any deficiencies and errors found in the above referenced permit application, providing necessary, omitted, or supplemental information identified to the Company by the Director or his authorized representative. The Company shall submit a written and certified mail response to any written Notice of Deficiency (NOD), unless the Director or his authorized representative agrees to a longer period. If the Company does not respond within fifteen (15) calendar days, then the Company may be subject to stipulated penalties.
4. Northeast Natural Energy, LLC agrees to make a total payment of ten thousand dollars (\$10,000) to the Air Pollution Education and Environment Fund. All payments shall be made by check payable to the Air Pollution Education and Environment Fund and shall be sent to the Division of Air Quality, Attention: William F. Durham, Director, 601 57th Street, SE, Charleston, WV 25304. Payment shall be made within ninety (90) days after the effective date of this Order. Payments made pursuant to this paragraph are not tax-deductible expenditures for purposes of state or federal law.

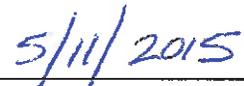
III. OTHER PROVISIONS

1. The Company hereby waives its right to appeal this Order under the provisions of Chapter 22, Article 5, Section 1 of the Code of West Virginia. Under this Order, the Company agrees to take all actions required by the terms and conditions of this Order and consents to and will not contest the Director's jurisdiction regarding this Order. However, the Company does not admit to any factual and legal determinations made by the Director and reserves all rights and defenses available regarding liability or responsibility in any proceedings regarding the Company other than proceedings, administrative or civil, to enforce this Order.
2. The Director reserves the right to take further action if compliance with the terms and conditions of this Order does not adequately address the violations noted herein and reserves all rights and defenses which he or she may have pursuant to any legal authority, as well as the right to raise, as a basis for supporting such legal authority or defenses, facts other than those contained in the Findings of Fact.
3. If any event occurs which causes delay in the achievement of the requirements of this Order, the Company shall have the burden of proving that the delay was caused by circumstances beyond its reasonable control which could not have been overcome by due diligence (i.e., force majeure). Force majeure shall not include delays caused or contributed to by the lack of sufficient funding. Within five (5) working days after the Company becomes aware of such a delay, notification shall be provided to the Director and the Company shall, within ten (10) working days of initial notification, submit a detailed written explanation of the anticipated length and cause of the delay, the measures taken and/or to be taken to prevent or minimize the delay, and a timetable by which the Company intends to implement these measures. If the Director agrees that the delay has been or will be caused by circumstances beyond the reasonable control of the Company (i.e., force majeure), the time for performance hereunder shall be extended for a period of time equal to the delay resulting from such circumstances. A force majeure amendment granted by the Director shall be considered a binding extension of this Order and of the requirements herein. The determination of the Director shall be final and not subject to appeal.
4. Compliance with the terms and conditions of this Order shall not in any way be construed as relieving the Company of the obligation to comply with any applicable law, permit, other order, or any other requirement otherwise applicable. Violations of the terms and conditions of this Order may subject the Company to additional penalties and injunctive relief in accordance with the applicable law.
5. The provisions of this Order are severable and should a court or board of competent jurisdiction declare any provisions to be invalid or unenforceable, all other provisions shall remain in full force and effect.
6. This Order is binding on the Company, its successors and assigns.
7. This Order shall become effective immediately upon signing by both parties.

8. This Order shall terminate upon payment of the civil administrative penalty detailed in this Order and the issuance, withdrawal, or denial of the 45CSR13 permit.



Brett Loflin, VP Regulatory Affairs
Northeast Natural Energy, LLC



Date



William F. Durham, Director
Division of Air Quality



Date



May 11, 2015

Robert L. Keatley
Group Supervisor, Compliance and Enforcement
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

RE: Consent Order No. CO-R13-E-2015-12; Beach Well Pad

Dear Mr. Keatley,

Please find enclosed the signed Consent Order referenced above. I have requested a check for \$10,000.00 payable to the Air Pollution Education and Environment Fund and will forward to your office when received. Thank you for your assistance in this matter and let me know if you need anything further.

Sincerely,

A handwritten signature in blue ink that reads 'Brett Loffin'.

Brett Loffin
Vice President, Regulatory Affairs
Voice: 304.414.7063
Email: bloffin@nne-llc.com

Rothwell, W Tracy

From: Adkins, Sandra K
Sent: Friday, May 01, 2015 10:35 AM
To: Rothwell, W Tracy
Subject: Northeast Natural Energy LLC (Beach Wellpad)/Permit Application Fee

This is the receipt for payment received from:

SE Technologies LLC, check number 7740, dated April 23, 2015, \$1,500.00
Northeast Natural Energy LLC Beach Wellpad G70-A157 id no 061-00217

OASIS Deposit No CR 1500121343 May 1, 2015

Rothwell, W Tracy

From: Melissa Polk <MPolk@se-env.com>
Sent: Friday, May 01, 2015 2:36 PM
To: Rothwell, W Tracy
Cc: Brett Loflin; Roger Dhonau
Subject: Northeast Energy Beach Well Pad Application No. G70-A157
Attachments: Northeast Energy Beach Addendum Letter.pdf

Please see the attached letter with a few addendums to above referenced application. A paper copy was mailed to you. Please contact me at 412-221-1100 (1600) if you have any questions.

Melissa F Polk
Senior Environmental Scientist
SE Technologies, LLC
98 Vanadium Rd., Bldg. D
Bridgeville, PA 15017
412/221-1100, ext. 1600



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May 1, 2015

Tracy Rothwell
West Virginia Dept. of Environmental Protection
Division of Air Quality – Permitting Section
601 57th Street, SE
Charleston, WV 25304



TECHNOLOGIES

SE Technologies, LLC
98 Vanadium Road, Building D
Bridgeville, PA 15017
412-221-1100
Fax: 412-257-6103
www.se-env.com

RE: Addendums
Northeast Natural Energy LLC
Beach Wellpad Production Facility
Plant ID No. 061-00217
Application No. G70-A157

Dear Mr. Rothwell:

On behalf of our client, Northeast Natural Energy, LLC, we are submitting these addendums to the previously submitted G70-A General Permit for its Beach Well Pad Production Facility in Monongalia County including,

1. Original affidavit for Class I Legal Advertisement.
2. For the produced fluids tank emission calculations, the maximum water production rate was changed from 20 bbl/day to 20 bbl/hr. The changes are reflected in the fugitive emissions Attachment C, the emission calculations (Attachment I) and the emission summary sheets (Attachment O).
3. The Natural Gas Fired Boiler/Line Heater Data Sheet, the Storage Tank Data Sheet, and the Natural Gas Compressor/Generator Engine Data Sheet were inadvertently not provided in the initial application. They are included in this addendum.

If there are any questions or concerns regarding this application, please contact me at 412/221-1100, x 1600 or mpolk@se-env.com and we will provide any needed clarification or additional information immediately.

Sincerely,
SE TECHNOLOGIES, LLC

Melissa F Polk
Senior Environmental Scientist

Enclosures

Cc: Northeast Natural Energy LLC, Brett Loflin

PUBLISHER'S CERTIFICATE

vs.

STATE OF WEST VIRGINIA
COUNTY OF MONONGALIA

010062447

April 24

AIR QUALITY PERMIT NOTICE

Notice of Application

Notice is given that Northeast Natural Energy LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a G70A General Permit Registration for its Beach Well Pad Production Facility located off of Mooresville Road in Monongalia County, West Virginia (Lat. 39.702866, Long. -80.137823).

The applicant estimates the potential to discharge the following regulated air pollutants:

8.42 tons of Nitrogen Oxides per year
3.74 tons of Carbon Monoxide per year
3.32 tons of Volatile Organics per year
0.04 tons of Sulfur Dioxide per year
5.63 tons of Particulate Matter per year
0.58 tons of Formaldehyde per year
0.04 tons of n-Hexane
9,845 tons of Greenhouse Gases per year

Startup of operation is planned to begin upon approval of this permit. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 24th day of April, 2015.

By: Mr. Brett Lofin
Vice President Regulatory Affairs
Northeast Natural Energy, LLC

I Eric Wilson Advertising Director of

THE DOMINION POST, a newspaper of general circulation

published in the City of Morgantown, County and State

aforsaid, do hereby certify that the annexed

Legal Notice

was published in the said THE DOMINION POST once a week

for 1 successive weeks commencing on the

24th day of Apr., 2015 and ending on the

24th day of Apr., 2015

The publisher's fee for said publication is \$69.42

Given under my hand this 24th day of

April, 2015

(SEAL)

Advertising Director of THE DOMINION POST

Subscribed and sworn to before me this 24th

day of April, 2015

Kathy J. Custer

Notary Public of Monongalia County, W. Va.

My commission expires on the 13th day of April

2024



**Northeast Natural Energy, LLC
Beach Well Pad
Attachment C – Fugitive Emissions Data**

Storage Tank and Haul Road Fugitive Emissions

Haul Road Fugitive Emissions for unpaved roads are calculated and presented in Attachment I. PM is estimated to be less than 5 tons per and PM-10 to be 0.65 tons per year.

Produced Fluids received by this facility is accumulated in a four tanks prior to off-site shipment. Emissions from these tanks were determined by using direct measurements from produced water tanks at a nearby Northeast well pad. Uncontrolled emissions from these tanks were determined to be 0.25 tons per year of VOCs. There is no control on these emissions. *There is no condensate at this facility.*

Emissions from these sources are summarized in the following fugitive emissions form and the calculations are included in the emissions summary in Attachment I.

Equipment Fugitive Emissions

As noted in the process description, Northeast plans to install various additional equipment at its Beach Well Pad. This equipment will contain a variety of piping containing natural gas and separated liquids under pressure. During the normal course of operation minor leaks from valves, pressure release devices and various fittings associated with this piping may occur. A potential emission rate of less than 0.01 tpy of VOCs and 34.3 tpy CO_{2e} has been estimated.

Estimates of these emissions are included in the calculations (Attachment I) and summarized on the form included in this section. These calculations are based on emission factors accepted by the American Petroleum Institute and EPA.

Pigging Emission Estimates

There will be no pigging operations in association with this planned facility modification.

Facility Blowdown Emission Estimates

There will be one gas compressors at this facility that will require blowdowns to allow for routine maintenance. The volume of natural gas released per blowdown event from this unit and associated inlet separator and piping is approximately 1570 cubic feet of gas at STP (see attached calculations). There will be a maximum of 24 blow downs per compressor per year. Thus, there is a potential for 37,680 cubic feet of gas emitted from blowdowns per year.

The density of this gas at STP is 0.046 pounds per cubic foot (see the Inlet Gas spreadsheet in the calculations). Thus, the mass of gas released per year is 1,733 pounds (37,680 cf x 0.046). As the percentage of VOCs in the gas (by weight) is 0.68 percent (see Inlet Gas spreadsheet in the calculations), the VOC (non-methane/non-ethane) emissions from blowdown operations are estimated at approximately 12.0 lbs (1,733 x 0.0068) or less than 0.006 tons per year. As the methane concentration in this gas is 93.1 % (by weight), methane emissions will be 1,613 pounds (1,733 x 0.931) per year. Using a GHG factor of 25, methane emissions from blowdowns in CO_{2e} will be 20 tons CO_{2e} (1,613 x 25[GHG factor] /2000).

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS	
1.) Will there be haul road activities?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."	

FUGITIVE EMISSIONS SUMMARY		All Regulated Pollutants - Chemical Name/CAS ¹	Maximum Potential Uncontrolled Emissions ²		Maximum Potential Controlled Emissions ³		Est. Method Used ⁴
			lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads							
Unpaved Haul Roads		PM	NA	5	NA	5	EE
Loading and Unloading Produced Water		PM-10	NA	0.65	NA	0.65	EE
		VOCs	NA	<0.01	NA	<0.01	EE
Equipment Leaks		VOCs	Does Not Apply	<0.01	Does Not Apply	<0.01	EE
		CO2e	Does Not Apply	34.3	Does Not Apply	34.3	EE
Blowdowns		VOCs	N/A	<0.01	N/A	<0.01	EE
		CO2e	N/A	20	N/A	20	EE
Other:							

¹ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.

² Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

³ Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁴ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

EMISSIONS SUMMARY

Beach Well Pad
 Northeast Natural Energy
 Monongalia County

Source	Description	NOx lb/hr	CO lb/hr	CO ₂ e lb/hr	VOC lb/hr	SO ₂ lb/hr	PM lb/hr	n-Hexane lb/hr	benzene lb/hr	formaldehyde lb/hr	Total HAPs lb/hr
CE-1	Compressor Engine #1	1.52	0.52	1743.99	0.730	0.01	0.11	0.00	0.00	0.13	0.290
HTR-1- HTR-4	Four 1.0 MMBTU/Hr GPUs	0.40	0.34	483.15	0.02	0.00	0.03	0.01	0.00	0.00	0.008
---	Haul Road Fugitive Dust										
T01-T04	Produced Water Tanks ²			197.80	0.06						
---	Equipment Fugitive Emissions			7.84	0.00						
---	Blowdowns ¹			N/A	N/A						
Total		1.92	0.85	2,433	0.81	0.01	0.14	0.01	0.00	0.13	0.30

Source	Description	NOx tpy	CO tpy	CO ₂ e tpy	VOC tpy	SO ₂ tpy	PM tpy	n-Hexane TPY	benzene tpy	formaldehyde tpy	Total HAPs tpy
CE-1	Compressor Engine #1	6.66	2.27	7,639	3.20	0.03	0.50	0.01	0.00	0.58	1.272
HTR-1- HTR-4	Four 1.0 MMBTU/Hr GPUs	1.75	1.47	2,116	0.10	0.01	0.13	0.03	0.00	0.00	0.033
---	Haul Road Fugitive Dust						5.00				
T01-T04	Produced Water Tanks ²			866	0.25						
---	Equipment Fugitive Emissions			34	0.00						
---	Blowdowns ¹			20	0.01						
Total		8.42	3.74	10,675	3.55	0.04	5.63	0.04	0.00	0.58	1.31

¹ See Attachment C for Blowdown Calculations

² Water tank emissions are uncontrolled.

Northeast Natural Energy, LLC
Beach Well Pad
Produced Water Tank Emissions

Utilizing direct measurements of tank vent emissions from Produced Water Tanks at nearby well pad (attached), gas emissions were determined to be 120 scfd at a water production rate of 13 BBL/day. Thus, with an anticipated maximum water production rate at the Beach Well Pad being 20 BBL/hr, an emission rate of 4431 SCFD is anticipated. $[120 \times 20/13 \times 24]$. The natural gas constituents were forced into solution in the Produced Water by the high pressures in the gas production zone. As they are not soluble in water, they are quickly released as the pressure on the water is released as it progresses from the well to the atmospheric pressure tank (flash gas). Consequently, working and breathing emissions are nominal.

The composition of the flash gas is assumed to be very similar to that of the production gas. Given that the density of the production gas is calculated to be 0.046 lb/scf, a flash gas rate of 4431 scfd equates to 203.8 lb/day. This gas is very dry, containing only 0.68% VOCs. Thus, potential VOC emissions from the tanks are estimated at 1.39 lb/day or 0.06 lb/hr. Annual VOC emissions are projected to be 505.8 pounds $[203.8 \times 365 \times 0.68\%]$ or 0.25 tpy.

Methane comprises approximately 93.1% of the gas. Thus, methane emissions are projected to be 7.91 lb/hr $[203.8/24 \times .931]$ or 34.6 tpy. Using a GHG factor of 25, potential CO_{2e} emissions will be 197.8 lb/hr or 865.7 tpy

G70-A EMISSIONS SUMMARY SHEET

Emission Point ID No.	Emission Point Type ¹	Emission Unit Vented Through This Point		Air Pollution Control Device		All Regulated Pollutants - Chemical Name/CAS ² (Speciate VOCs & HAPs)	Maximum Potential Uncontrolled Emissions ³		Maximum Potential Controlled Emissions ⁴		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used ⁵
		ID No.	Source	ID No.	Device Type		lb/hr	ton/yr	lb/hr	ton/yr		
1E	Upward Vertical Stack	HTR-1	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.08	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	121	529	120	529	Gas	EE
2E	Upward Vertical Stack	HTR-2	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.09	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	120	529	120	529	Gas	EE
3E	Upward Vertical Stack	HTR-3	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.09	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	120	529	120	529	Gas	EE
4E	Upward Vertical Stack	HTR-4	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.09	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	120	529	120	529	Gas	EE

G70-A EMISSIONS SUMMARY SHEET

Emission Point ID No.	Emission Point Type ¹	Emission Unit Vented Through This Point		Air Pollution Control Device		All Regulated Pollutants - Chemical Name/CAS ² (Speciate VOCs & HAPs)	Maximum Potential Uncontrolled Emissions ³		Maximum Potential Controlled Emissions ⁴		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used ⁵
		ID No.	Source	ID No.	Device Type		lb/hr	ton/yr	lb/hr	ton/yr		
5E	Upward Vertical Stack					NOx	1.52	6.66	1.52	6.66	Gas	EE
						CO	7.39	32.38	0.52	2.27	Gas	EE
						VOC	1.46	6.40	0.73	3.20	Gas	EE
			CE-1	Engine	None	PM	0.114	0.50	0.114	0.50	Solid	EE
						HCOH	1.31	5.73	0.131	0.57	Gas	EE
						Total HAPs	1.62	7.09	0.290	1.27	Gas	EE
6E-9E	Fugitive					CO2e	1744	7639	1744	7639	Gas	EE
						NOx					Gas	EE
						CO					Gas	EE
				Produced Water	None	VOC	0.06	0.25	0.06	0.25	Gas	EE
			TO-1-4			PM					Solid	EE
						HCOH					Gas	EE
10E	Fugitive					Total HAPs	<0.01	<0.01	<0.01	<0.01	Gas	EE
						CO2e					Gas	EE
						NOx					Gas	EE
						CO					Gas	EE
				Produced Water Truck Loading	None	VOC	<0.01	<0.01	<0.01	<0.01	Gas	EE
			TL-1			PM					Solid	EE
				HCOH					Gas	EE		
				Total HAPs	<0.01	<0.01	<0.01	<0.01	Gas	EE		
				CO2e					Gas	EE		

The EMISSION SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSIONS SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncontrolled emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- ¹ Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- ² List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO_x, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂ and Noble Gases
- ³ Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁴ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch), 4C
- ⁵ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; M = modeling; O = other (specify).

NATURAL GAS FIRED BOILER/LINE HEATER DATA SHEET

Source ID # ¹	Status ²	Design Heat Input (mmBtu/hr) ³	Hours of Operation (hrs/yr) ⁴	Fuel Heating Value (Btu/scf) ⁵	
HTR-1	NEW	1.0 MMBTU/Hr	8760	1033 BTU/scf (HHV)	
HTR-2	NEW	1.0 MMBTU/Hr	8760	1033 BTU/scf (HHV)	
HTR-3	NEW	1.0 MMBTU/Hr	8760	1033 BTU/scf (HHV)	
HTR-3	NEW	1.0 MMBTU/Hr	8760	1033 BTU/scf (HHV)	

1. Enter the appropriate Source Identification Numbers (Source ID #) for each boiler or line heater located at the compressor station. Boilers should be designated BLR-1, BLR-2, BLR-3, etc. Heaters or Line Heaters should be designated HTR-1, HTR-2, HTR-3, etc. Enter glycol dehydration unit Reboiler Vent data on the *Glycol Dehydration Unit Data Sheet*.
2. Enter the Status for each boiler or line heater using the following:

EXIST Existing Equipment	NEW Installation of New Equipment
REM Equipment Removed	
3. Enter boiler or line heater design heat input in mmBtu/hr.
4. Enter the annual hours of operation in hours/year for each boiler or line heater.
5. Enter the fuel heating value in Btu/standard cubic foot.

STORAGE TANK DATA SHEET

Source ID # ¹	Status ²	Content ³	Volume ⁴	Dia ⁵	Throughput ⁶	Orientation ⁷	Liquid Height ⁸
T01	NEW	Produced Water	210 BBL	10.0	772,000 gallons/yr	VERT	8 feet
T02	NEW	Produced Water	400 BBL	12.0	1,450,000 gallons/yr	VERT	10 feet
T03	NEW	Produced Water	400 BBL	12.0	1,450,000 gallons/yr	VERT	10 feet
T03	NEW	Produced Water	400 BBL	12.0	1,450,000 gallons/yr	VERT	10 feet

1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the compressor station. Tanks should be designated T01, T02, T03, etc.
2. Enter storage tank Status using the following:

EXIST Existing Equipment	NEW Installation of New Equipment
REM Equipment Removed	
3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, etc.
4. Enter storage tank volume in gallons.
5. Enter storage tank diameter in feet.
6. Enter storage tank throughput in gallons per year.
7. Enter storage tank orientation using the following:

VERT Vertical Tank	HORZ Horizontal Tank
--------------------	----------------------
8. Enter storage tank average liquid height in feet.

NATURAL GAS COMPRESSOR/GENERATOR ENGINE DATA SHEET

Source Identification Number ¹		CE-1					
Engine Manufacturer and Model		Caterpillar 3516					
Manufacturer's Rated bhp/rpm		1380 @ 1400					
Source Status ²		NS					
Date Installed/Modified/Removed ³		Upon Receipt of Permit					
Engine Manufactured/Reconstruction Date ⁴		6/27/2013					
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No) ⁵		No					
Engine, Fuel and Combustion Data	Engine Type ⁶	LB4S					
	APCD Type ⁷	CAT					
	Fuel Type ⁸	RG					
	H ₂ S (gr/100 scf)	<1					
	Operating bhp/rpm	1380 @ 1400					
	BSFC (Btu/bhp-hr)	8255					
	Fuel throughput (ft ³ /hr)	11,028					
	Fuel throughput (MMft ³ /yr)	96.61					
Operation (hrs/yr)	8760						
Reference ⁹	Potential Emissions ¹⁰	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
AP	NO _x	1.52	6.66				
AP	CO	0.52	2.27				
AP	VOC	0.73	3.20				
AP	SO ₂	<0.01	0.03				
AP	PM ₁₀	0.11	0.50				
AP	Formaldehyde	0.13	0.57				
AP	Total HAPs	0.29	1.27				
AP	CO _{2e}	1744	7639				

1. Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the compressor station. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-3 etc. If more than three (3) engines exist, please use additional sheets.

2. Enter the Source Status using the following codes:

NS Construction of New Source (installation)	ES Existing Source
MS Modification of Existing Source	RS Removal of Source

3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.
4. Enter the date that the engine was manufactured, modified or reconstructed.
5. Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart JJJJ. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

6. Enter the Engine Type designation(s) using the following codes:

LB2S Lean Burn Two Stroke	RB4S Rich Burn Four Stroke
LB4S Lean Burn Four Stroke	
7. Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F Air/Fuel Ratio	IR Ignition Retard
HEIS High Energy Ignition System	SIPC Screw-in Precombustion Chambers
PSC Prestratified Charge	LEC Low Emission Combustion
NSCR Rich Burn & Non-Selective Catalytic Reduction	SCR Lean Burn & Selective Catalytic Reduction
8. Enter the Fuel Type using the following codes:

PQ Pipeline Quality Natural Gas	RG Raw Natural Gas
---------------------------------	--------------------
9. Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*.

MD Manufacturer's Data	AP AP-42	
GR GRI-HAPCalc™	OT Other _____	(please list)
10. Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

May 1, 2015



Tracy Rothwell
West Virginia Dept. of Environmental Protection
Division of Air Quality – Permitting Section
601 57th Street, SE
Charleston, WV 25304



SE Technologies, LLC
98 Vanadium Road, Building D
Bridgeville, PA 15017
412-221-1100
Fax: 412-257-6103
www.se-env.com

RE: Addendums
Northeast Natural Energy LLC
Beach Wellpad Production Facility
Plant ID No. 061-00217
Application No. G70-A157

I.D. No. 061-00217 Reg. G70-A157
Company Northeast Natural Energy LLC
Facility Beach Wellpad Region Tri
Initials NTK/g

Dear Mr. Rothwell:

On behalf of our client, Northeast Natural Energy, LLC, we are submitting these addendums to the previously submitted G70-A General Permit for its Beach Well Pad Production Facility in Monongalia County including,

1. Original affidavit for Class I Legal Advertisement.
2. For the produced fluids tank emission calculations, the maximum water production rate was changed from 20 bbl/day to 20 bbl/hr. The changes are reflected in the fugitive emissions Attachment C, the emission calculations (Attachment I) and the emission summary sheets (Attachment O).
3. The Natural Gas Fired Boiler/Line Heater Data Sheet, the Storage Tank Data Sheet, and the Natural Gas Compressor/Generator Engine Data Sheet were inadvertently not provided in the initial application. They are included in this addendum.

If there are any questions or concerns regarding this application, please contact me at 412/221-1100, x 1600 or mpolk@se-env.com and we will provide any needed clarification or additional information immediately.

Sincerely,
SE TECHNOLOGIES, LLC

A handwritten signature in black ink that reads "Melissa Polk".

Melissa F Polk
Senior Environmental Scientist

Enclosures

Cc: Northeast Natural Energy LLC, Brett Loflin

PUBLISHER'S CERTIFICATE

vs.

STATE OF WEST VIRGINIA
COUNTY OF MONONGALIA

010062447

April 24

AIR QUALITY PERMIT NOTICE

Notice of Application

Notice is given that Northeast Natural Energy LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a G70A General Permit Registration for its Beach Well Pad Production Facility located off of Mooresville Road in Monongalia County, West Virginia (Lat.39.702866, Long.-80.137823).

The applicant estimates the potential to discharge the following regulated air pollutants:

- 8.42 tons of Nitrogen Oxides per year
- 3.74 tons of Carbon Monoxide per year
- 3.32 tons of Volatile Organics per year
- 0.04 tons of Sulfur Dioxide per year
- 5.63 tons of Particulate Matter per year
- 0.58 tons of Formaldehyde per year
- 0.04 tons of n-Hexane
- 9,845 tons of Greenhouse Gases per year

Startup of operation is planned to begin upon approval of this permit. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 24th day of April, 2015.

By: Mr. Brett Loffin
Vice President Regulatory Affairs
Northeast Natural Energy, LLC

I Eric Wilson Advertising Director of

THE DOMINION POST, a newspaper of general circulation

published in the City of Morgantown, County and State

aforesaid, do hereby certify that the annexed

Legal Notice

was published in the said THE DOMINION POST once a week

for 1 successive weeks commencing on the

24th day of Apr., 2015 and ending on the

24th day of Apr., 2015

The publisher's fee for said publication is \$69.42

Given under my hand this 24th day of

April, 2015

(SEAL)

Advertising Director of THE DOMINION POST

Subscribed and sworn to before me this 24th

day of April, 2015

Kathy J. Custer

Notary Public of Monongalia County, W. Va.

My commission expires on the 13th day of April

2024



**Northeast Natural Energy, LLC
Beach Well Pad
Attachment C – Fugitive Emissions Data**

Storage Tank and Haul Road Fugitive Emissions

Haul Road Fugitive Emissions for unpaved roads are calculated and presented in Attachment I. PM is estimated to be less than 5 tons per year and PM-10 to be 0.65 tons per year.

Produced Fluids received by this facility is accumulated in a four tanks prior to off-site shipment. Emissions from these tanks were determined by using direct measurements from produced water tanks at a nearby Northeast well pad. Uncontrolled emissions from these tanks were determined to be 0.25 tons per year of VOCs. There is no control on these emissions. *There is no condensate at this facility.*

Emissions from these sources are summarized in the following fugitive emissions form and the calculations are included in the emissions summary in Attachment I.

Equipment Fugitive Emissions

As noted in the process description, Northeast plans to install various additional equipment at its Beach Well Pad. This equipment will contain a variety of piping containing natural gas and separated liquids under pressure. During the normal course of operation minor leaks from valves, pressure release devices and various fittings associated with this piping may occur. A potential emission rate of less than 0.01 tpy of VOCs and 34.3 tpy CO_{2e} has been estimated.

Estimates of these emissions are included in the calculations (Attachment I) and summarized on the form included in this section. These calculations are based on emission factors accepted by the American Petroleum Institute and EPA.

Pigging Emission Estimates

There will be no pigging operations in association with this planned facility modification.

Facility Blowdown Emission Estimates

There will be one gas compressors at this facility that will require blowdowns to allow for routine maintenance. The volume of natural gas released per blowdown event from this unit and associated inlet separator and piping is approximately 1570 cubic feet of gas at STP (see attached calculations). There will be a maximum of 24 blow downs per compressor per year. Thus, there is a potential for 37,680 cubic feet of gas emitted from blowdowns per year.

The density of this gas at STP is 0.046 pounds per cubic foot (see the Inlet Gas spreadsheet in the calculations). Thus, the mass of gas released per year is 1,733 pounds (37,680 cf x 0.046). As the percentage of VOCs in the gas (by weight) is 0.68 percent (see Inlet Gas spreadsheet in the calculations), the VOC (non-methane/non-ethane) emissions from blowdown operations are estimated at approximately 12.0 lbs (1,733 x 0.0068) or less than 0.006 tons per year. As the methane concentration in this gas is 93.1 % (by weight), methane emissions will be 1,613 pounds (1,733 x 0.931) per year. Using a GHG factor of 25, methane emissions from blowdowns in CO_{2e} will be 20 tons CO_{2e} (1,613 x 25[GHG factor] /2000).

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS	
1.) Will there be haul road activities?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."	

FUGITIVE EMISSIONS SUMMARY		All Regulated Pollutants - Chemical Name/CAS ¹	Maximum Potential Uncontrolled Emissions ²		Maximum Potential Controlled Emissions ³		Est. Method Used ⁴
			lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads							
Unpaved Haul Roads		PM	NA	5	NA	5	EE
Loading and Unloading Produced Water		PM-10	NA	0.65	NA	0.65	EE
		VOCs	NA	<0.01	NA	<0.01	EE
Equipment Leaks		VOCs	Does Not Apply	<0.01	Does Not Apply	<0.01	EE
		CO2e	Does Not Apply	34.3	Does Not Apply	34.3	EE
Blowdowns		VOCs	N/A	<0.01	N/A	<0.01	EE
		CO2e	N/A	20	N/A	20	EE
Other:							

¹ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.

² Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

³ Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁴ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

EMISSIONS SUMMARY

**Beach Well Pad
Northeast Natural Energy
Monongalia County**

Source	Description	NOx lb/hr	CO lb/hr	CO2e lb/hr	VOC lb/hr	SO2 lb/hr	PM lb/hr	n-Hexane lb/Hr	benzene lb/hr	formaldehyde lb/hr	Total HAPs lb/hr
CE-1	Compressor Engine #1	1.52	0.52	1743.99	0.730	0.01	0.11	0.00	0.00	0.13	0.290
HTR-1- HTR-4	Four 1.0 MMBTU/Hr GPUs	0.40	0.34	483.15	0.02	0.00	0.03	0.01	0.00	0.00	0.008
---	Haul Road Fugitive Dust										
T01-T04	Produced Water Tanks ²			197.80	0.06						
---	Equipment Fugitive Emissions			7.84	0.00						
---	Blowdowns ¹			N/A	N/A						
Total		1.92	0.85	2,433	0.81	0.01	0.14	0.01	0.00	0.13	0.30

Source	Description	NOx tpy	CO tpy	CO2e tpy	VOC tpy	SO2 tpy	PM tpy	n-Hexane TPY	benzene tpy	formaldehyde tpy	Total HAPs tpy
CE-1	Compressor Engine #1	6.66	2.27	7,639	3.20	0.03	0.50	0.01	0.00	0.58	1.272
HTR-1- HTR-4	Four 1.0 MMBTU/Hr GPUs	1.75	1.47	2,116	0.10	0.01	0.13	0.03	0.00	0.00	0.033
---	Haul Road Fugitive Dust						5.00				
T01-T04	Produced Water Tanks ²			866	0.25						
---	Equipment Fugitive Emissions			34	0.00						
---	Blowdowns ¹			20	0.01						
Total		8.42	3.74	10,675	3.55	0.04	5.63	0.04	0.00	0.58	1.31

¹ See Attachment C for Blowdown Calculations

² Water tank emissions are uncontrolled.

**Northeast Natural Energy, LLC
Beach Well Pad
Produced Water Tank Emissions**

Utilizing direct measurements of tank vent emissions from Produced Water Tanks at nearby well pad (attached), gas emissions were determined to be 120 scfd at a water production rate of 13 BBL/day. Thus, with an anticipated maximum water production rate at the Beach Well Pad being 20 BBL/hr, an emission rate of 4431 SCFD is anticipated. $[120 \times 20/13 \times 24]$. The natural gas constituents were forced into solution in the Produced Water by the high pressures in the gas production zone. As they are not soluble in water, they are quickly released as the pressure on the water is released as it progresses from the well to the atmospheric pressure tank (flash gas). Consequently, working and breathing emissions are nominal.

The composition of the flash gas is assumed to be very similar to that of the production gas. Given that the density of the production gas is calculated to be 0.046 lb/scf, a flash gas rate of 4431 scfd equates to 203.8 lb/day. This gas is very dry, containing only 0.68% VOCs. Thus, potential VOC emissions from the tanks are estimated at 1.39 lb/day or 0.06 lb/hr. Annual VOC emissions are projected to be 505.8 pounds $[203.8 \times 365 \times 0.68\%]$ or 0.25 tpy.

Methane comprises approximately 93.1% of the gas. Thus, methane emissions are projected to be 7.91 lb/hr $[203.8/24 \times .931]$ or 34.6 tpy. Using a GHG factor of 25, potential CO_{2e} emissions will be 197.8 lb/hr or 865.7 tpy

G70-A EMISSIONS SUMMARY SHEET

Emission Point ID No.	Emission Point Type ¹	Emission Unit Ventilated Through This Point		Air Pollution Control Device		All Regulated Pollutants - Chemical Name/CAS ² (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions ³		Maximum Potential Controlled Emissions ⁴		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used ⁵
		ID No.	Source	ID No.	Device Type		lb/hr	ton/yr	lb/hr	ton/yr		
1E	Upward Vertical Stack	HTR-1	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.08	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	121	529	120	529	Gas	EE
2E	Upward Vertical Stack	HTR-2	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.09	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	120	529	120	529	Gas	EE
3E	Upward Vertical Stack	HTR-3	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.09	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	120	529	120	529	Gas	EE
4E	Upward Vertical Stack	HTR-4	GPU	None		NOx	0.10	0.44	0.10	0.44	Gas	EE
						CO	0.09	0.37	0.09	0.37	Gas	EE
						VOC	0.01	0.02	0.01	0.02	Gas	EE
						PM	0.01	0.03	0.01	0.03	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	120	529	120	529	Gas	EE

G70-A EMISSIONS SUMMARY SHEET

Emission Point ID No.	Emission Point Type ¹	Emission Unit Vented Through This Point		Air Pollution Control Device		All Regulated Pollutants - Chemical Name/CAS ² (Speciate VOCs & HAPs)	Maximum Potential Uncontrolled Emissions ³		Maximum Potential Controlled Emissions ⁴		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used ⁵
		ID No.	Source	ID No.	Device Type		lb/hr	ton/yr	lb/hr	ton/yr		
5E	Upward Vertical Stack	CE-1	Engine	None		NOx	1.52	6.66	1.52	6.66	Gas	EE
						CO	7.39	32.38	0.52	2.27	Gas	EE
						VOC	1.46	6.40	0.73	3.20	Gas	EE
						PM	0.114	0.50	0.114	0.50	Solid	EE
						HCOH	1.31	5.73	0.131	0.57	Gas	EE
						Total HAPs	1.62	7.09	0.290	1.27	Gas	EE
CO2e	1744	7639	1744	7639	Gas	EE						
6E-9E	Fugitive	TO-1-4	Produced Water	None		NOx					Gas	EE
						CO					Gas	EE
						VOC	0.06	0.25	0.06	0.25	Gas	EE
						PM					Solid	EE
						HCOH					Gas	EE
						Total HAPs	<0.01	<0.01	<0.01	<0.01	Gas	EE
CO2e					Gas	EE						
10E	Fugitive	TL-1	Produced Water Truck Loading	None		NOx					Gas	EE
						CO					Gas	EE
						VOC	<0.01	<0.01	<0.01	<0.01	Gas	EE
						PM					Solid	EE
						HCOH					Gas	EE
						Total HAPs	<0.01	<0.01	<0.01	<0.01	Gas	EE
CO2e					Gas	EE						

The EMISSION SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSIONS SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

¹ Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

² List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases

³ Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁴ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).^{4C}

⁵ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; M = modelling; O = other (specify).

NATURAL GAS COMPRESSOR/GENERATOR ENGINE DATA SHEET

Source Identification Number ¹		CE-1					
Engine Manufacturer and Model		Caterpillar 3516					
Manufacturer's Rated bhp/rpm		1380 @ 1400					
Source Status ²		NS					
Date Installed/Modified/Removed ³		Upon Receipt of Permit					
Engine Manufactured/Reconstruction Date ⁴		6/27/2013					
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No) ⁵		No					
Engine, Fuel and Combustion Data	Engine Type ⁶	LB4S					
	APCD Type ⁷	CAT					
	Fuel Type ⁸	RG					
	H ₂ S (gr/100 scf)	<1					
	Operating bhp/rpm	1380 @ 1400					
	BSFC (Btu/bhp-hr)	8255					
	Fuel throughput (ft ³ /hr)	11,028					
	Fuel throughput (MMft ³ /yr)	96.61					
Operation (hrs/yr)	8760						
Reference ⁹	Potential Emissions ¹⁰	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
AP	NO _x	1.52	6.66				
AP	CO	0.52	2.27				
AP	VOC	0.73	3.20				
AP	SO ₂	<0.01	0.03				
AP	PM ₁₀	0.11	0.50				
AP	Formaldehyde	0.13	0.57				
AP	Total HAPs	0.29	1.27				
AP	CO _{2e}	1744	7639				

1. Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the compressor station. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-3 etc. If more than three (3) engines exist, please use additional sheets.

2. Enter the Source Status using the following codes:

NS Construction of New Source (installation)	ES Existing Source
MS Modification of Existing Source	RS Removal of Source

3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.
4. Enter the date that the engine was manufactured, modified or reconstructed.
5. Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart JJJJ. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

6. Enter the Engine Type designation(s) using the following codes:

LB2S	Lean Burn Two Stroke	RB4S	Rich Burn Four Stroke
LB4S	Lean Burn Four Stroke		

7. Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	SCR	Lean Burn & Selective Catalytic Reduction

8. Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas
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9. Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other _____	(please list)

10. Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

April 27, 2015

West Virginia Dept. of Environmental Protection
Division of Air Quality – Permitting Section
601 57th Street, SE
Charleston, WV 25304



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BUILDING D, 2nd FLOOR
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(412) 221-1100
(412) 257-6103 (FAX)
<http://www.se-env.com>

**RE: Application for G70 A General Permit
Beach Well Pad Production Facility
Northeast Natural Energy, LLC.
Monongalia, West Virginia**



To Whom It May Concern:

On behalf of our client, Northeast Natural Energy, LLC, we are pleased to submit three copies of the Application for a G70-A General Permit for its Beach Well Pad Production Facility in Monongalia County. This equipment is needed to allow proper management of liquid and natural gas produced by the wells prior to injection into nearby gathering lines.

An application fee in the amount of \$1,500 (\$500 Class II General Permit Fee + \$1,000 NSPS) was determined to be applicable.

If there are any questions or concerns regarding this application, please contact me at 412/221-1100, x 1628 or rdhonau@se-env.com and we will provide any needed clarification or additional information immediately.

Sincerely,

SE TECHNOLOGIES, LLC

A handwritten signature in black ink that reads 'Roger A. Dhonau'.

Roger A. Dhonau, PE, QEP
Principal

Enclosures

Cc: Northeast Natural Energy LLC, Brett Loffin