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DRAFT ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3193
Plant ID No.: 103-00089
Applicant: Stone Energy Corporation
Facility Name: R Weekley Pad
Location: Porters Falls, Wetzel County
SIC Code: 211111
Application Type: Construction
Received Date: May 22, 2014
Engineer Assigned: Laura Jennings
Fee Amount: \$2,000.00
Date Received: May 23, 2014
Date Resubmitted: A July 30, 2014 and August 28, 2014
Complete Date: October 23, 2014
Due Date: January 21, 2015
Applicant Ad Date: July 23, 2014
Newspaper: The Wetzel Chronicle
UTM's: Easting: 519.0418 km Northing: 4382.4511 km Zone: 17
Lat/Long: F Latitude: 39.593539 Longitude: -80.778060
Description: Natural gas production facility. This is an after-the-fact permit application that commenced operation on October 12, 2012.

DESCRIPTION OF PROCESS

Background:

This application was submitted in accordance with Consent Order CO-R13-E-2013-19 that was issued on November 6, 2013 and from a permit determination that was submitted on February 4, 2014 that determined that a permit was required.

Process Description:

The Weekley facility is an existing natural gas production well pad that commenced operation on October 12, 2012. Natural gas and associated liquids (condensate and produced water) are produced from seven wells on location: Wells 2H, 3H, 4H, 5H, 6H,

and 8H, and Willey1. Each individual well stream is passed through a 0.5 MMBtu/hr line heater (LH-1 through LH-6 and LH-8) where it undergoes heating and pressure reduction. The well stream is then combined with other well streams and passed through a three phase separator which separates gas, condensate, and water. Gas and condensate are delivered to two separate pipelines under pressure to an offsite facility for further processing. Water (28 bbl/day) accumulates in five 210 bbl tanks (T01-T05), where it is then hauled off for disposal. A water tank truck (L02) removes 5110 bl of water per month. Electricity is provided to the site by a 104.7 HP natural gas fired generator [GE-1] with a backup 51 HP emergency generator [GE-2]. A transfer switch is used to ensure that only one generator operates at a time. The generators and heaters use natural gas fuel provided on site which is extracted from the gas flow line by a fuel gas separator system. A small quantity of condensate which falls out during the fuel gas conditioning process is dumped to a 210 bbl tank (T06). A condensate tank truck (L01) removes 8 bbl of condensate per month.

Emission Units Table:

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type and Date of Change	Control Device
GE-1	1e	Natural gas generator (Cummins PSI 5.7L; Engine Family EPSIB5.70NGP)	2014	104.7 HP	New	C1
GE-2	2e	Natural gas emergency generator (Tradewinds TGM30-UL, PSI Engine Family CPSIB2.972ED)	2012	51 HP	New	NA
LH-1	3e	Line heater	2012	0.5 MMBtu/hr	New	NA
LH-2	4e	Line heater	2012	0.5 MMBtu/hr	New	NA
LH-3	5e	Line heater	2012	0.5 MMBtu/hr	New	NA
LH-4	6e	Line heater	2012	0.5 MMBtu/hr	New	NA
LH-5	7e	Line heater	2012	0.5 MMBtu/hr	New	NA
LH-6	8e	Line heater	2012	0.5 MMBtu/hr	New	NA
LH-8	9e	Line heater	2012	0.5 MMBtu/hr	New	NA
T01	10e	Produced water tank	2012	210 bbls	New	NA
T02	11e	Produced water tank	2012	210 bbls	New	NA
T03	12e	Produced water tank	2012	210 bbls	New	NA
T04	13e	Produced water tank	2012	210 bbls	New	NA
T05	14e	Produced water tank	2012	210 bbls	New	NA
T06	15e	Condensate tank	2012	210 bbls	New	NA

TL-1	16e	Truck loading	2012	NA	New	NA
Control Device						
1C	NSCR 3-Way engine catalyst (Power Solutions Model# 38900641)		NOX, CO, and VOC reduction efficiency 90% at 700° F and greater			

SITE INSPECTION

D This site was inspected by DAQ personnel on August 7, 2013 that resulted in consent order CO-R13-E-2013-19. According to the consent order, the facility had the following emission units installed and operating: seven (7) 500,000 Btu/hr line heaters; two (2) natural gas fired electricity generators. One 30 kW generator operates continuously while the other is a backup. The Stateline generator model is 5G-30. The emissions from the engine are certified to meet 40 CFR60, Subpart JJJJ; and six (6) 210 barrel production tanks (5 produced water and 1 fuel gas condensate).

R Directions to the facility: From the intersection of Route 7 and Route 20 southeast of New Martinsville, travel approximately 5 miles southeast on Route 20. The lease road for the facility is located on the left. The facility is located 0.1 miles down the lease road.

Latitude: 39.59157, Longitude; -80.77824



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Line Heater calculations are based on AP-42 emission factors, Chapter 1.4, Table 1.4-2. Global Warming Potentials were calculated using emission factors from 40 CFR 98, Subpart C, Table C-1 and C-2 and 40 CFR 98, Subpart A, Table A-1.

Tank emission calculations for working and breathing losses are from EPA Tanks 4.0. The flashing emission factors are from Fesco Petroleum Engineers Flash Liberation of Separator Water at Pad No. 1 facility (0.012 lbs VOC/bbl) and from Fesco Petroleum Engineers Flash Liberation of Hydrocarbon Liquid Test at Lantz Mills Facility (30.800 lbs/bbl). The basis for the emission factors is further described below.

Representative sample

Representative emission factors for the water and condensate tanks are used. The condensate sample used corresponds to first cut separator condensate at Lantz Mills operating at 437 psig and 146 F. The resulting gas to oil ration (GOR) is assumed to be much higher than anything that would come from the lower pressure fuel conditioning system, which knocks out a small amount of condensate feeding the 0.28 llb/d condensate storage vessel located at this site.

The first cut separator condensate at Weekley exits the site through a pressurized condensate pipeline and bypasses the need for onsite storage capacity. At the time FESCO gathered the samples, they attempted to sample the fuel gas conditioning knock-outs, but as a result of the small amounts of liquid present they were not able to obtain enough sample for an analysis. This was another reason for using the higher pressure condensate GOR results from Lantz Mills at 30.8 lb VOC/bbl.

With respect to the produced water storage tank factors used, Stone had gas to water (GWR) results from 4 different samples measured by FESCO. Since they were all relatively low, SLR used the highest result as worst case on all water flashing calculations. It was interesting to note that two site with markedly different surface pressures resulted in a tie for the highest GWR factor at 0.12 lb VOC/bbl. The table below summarizes the specifics.

GWR Flash Analysis Table:

Separator Pressure	Site	Type/ Well ID	Date	lb VOC/bbl
437	Lantz Mills	GWR 5H	12/3/2013	0.0081
437	Lantz Mills	GWR 1H	12/3/2013	0.0025
380	Pad 1	GWR 4H	10/25/2013	0.012
660	Nice	GWR 2H	9/24/2013	0.012

The generator engine [GE-1] emissions are based on emission factors and fuel

consumption from Power Solutions's data sheet on PSI Certified 5.7L Stationary Non-Emergency Engine Family for NO_x, CO, CO₂, and VOC; AP-42 emission factors for natural gas fired reciprocating engines (4SRB); and 40CFR98, Subpart C, Tables C-1 and C-2 for greenhouse gas emissions. The catalyst type is NSCR (PSI Model No. 38900641) and the manufacturer's guarantee reduction efficiency is 90% for NO_x, CO, and VOCs at 700°F and greater.

The emergency generator engine [GE-2] emissions are based on emission factors and fuel consumption from Power Solutions's data sheet on PSI emission factors for the 3.0L natural gas emergency engine. Manufacturer's emission factors were used for NO_x, CO, and VOC. AP-42 emission factors were used for PM/PM₁₀/PM_{2.5}, SO₂, and formaldehyde and 40CFR98, Subpart C, Tables C-1 and C-2 for greenhouse gas emissions. Annual emissions are based on 500 operating hours per year.

Tank truck loading loss emissions are based on AP-42 emission factors from Section 5.2 and using an annual throughput of 2,146,200 gallons of produced water and 4,000 gallons of condensate.

The component count used in the fugitive emission calculations for leaks are based on 40 CFR Part 98. The component counts for the fugitive emission leaks are: valves in gas VOC service (166); safety relief valves in gas VOC service (7); open ended lines in VOC service (18); and sampling connections in VOC service (766).

Emission calculations have been reviewed and verified by the writer.

Emissions Summary Table:

Emission Point ID	Emission Unit ID	Control Device ID	Regulated Pollutant	Maximum Potential Uncontrolled Emissions		Maximum Potential Controlled Emissions	
				lb/hr	tpy	lb/hr	tpy
1e	GE-1	C1 (NSCR)	VOC	0.12	0.51	0.01	0.05
			NO _x	0.12	0.51	0.01	0.05
			CO	0.83	3.64	0.08	0.36
			PM/ PM ₁₀ / PM _{2.5}	<0.01	0.03	<0.01	0.03
			SO ₂	<0.01	<0.01	<0.01	<0.01
			CO _{2e}	170.67	748	170.67	748
			Formaldehyde	0.02	0.07	0.02	0.07
2e	GE-2	None	VOC	0.59	0.15	0.59	0.15
			NOX	0.59	0.15	0.59	0.15
			CO	2.40	0.60	2.40	0.60

			PM/ PM ₁₀ / PM _{2.5}	<0.01	<0.01	<0.01	<0.01
			SO ₂	<0.01	<0.01	<0.01	<0.01
			CO ₂ e	49.42	12.36	49.42	12.36
			Formaldehydye	<0.01	<0.01	<0.01	<0.01
3e - 9e (Each) D	LH-1 - LH-7	None	PM/ PM ₁₀ / PM _{2.5}	0.01	0.02	0.01	0.02
			SO ₂	0.01	0.01	0.01	0.01
			NO _x	0.05	0.21	0.05	0.21
			CO	0.04	0.18	0.04	0.18
			VOC	0.01	0.01	0.01	0.01
			CO ₂ e	136.51	597.92	136.51	597.92
10e - 14e (Each)	T-01 - T05	None	VOC	0.02	0.07	0.02	0.07
15e	T-06	None	VOC	0.69	3.04	0.69	3.04
16e	TL-1	None	VOC	0.35	1.51	0.35	1.51
Fugitives	Equipment Leaks		VOCs	0.02	0.07	0.02	0.07
			CO ₂ e	4.21	18.42	4.21	18.42

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Total Facility PTE: (Includes Fugitive Emissions)

Regulated Pollutant	Maximum Potential Emissions	
	tpy	
VOC	F	5.17
NO _x		1.67
CO		2.22
PM/ PM ₁₀ / PM _{2.5}		0.15
SO ₂		0.01
CO ₂ e		2,573
Formaldehydye		0.07

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AGGREGATION ANALYSIS

The Weekly site is operated solely by Stone Energy. This well pad facility has the ability to transfer its products via pipeline to midstream compression companies like Eureka

Hunter or OVM Williams, both of which are located on non contiguous or adjacent sites over a mile away. Additionally, these sources are not under common control nor is there any support and/or dependency relationship between the midstream companies and Stone Energy. This facility should not be aggregated.

REGULATORY APPLICABILITY

State Regulations: The state regulations listed below apply to this facility.

45CSR2 (TO PREVENT AND CONTROL PARTICULATE AIR POLLUTION FROM COMBUSTION OF FUEL IN INDIRECT HEAT EXCHANGERS)

The applicant is not subject to the weight emission standard for particulate matter set forth in 45 CSR2-4.1 because the line heaters (LH-1 through LH-8) are less than 10 MMBtu/hr; however, they are subject to the 10% opacity based on a six minute block average. Compliance will be demonstrated by complying with permit requirements. The applicant is using natural gas as fuel; therefore, meeting the 10% opacity requirements should not be a problem.

45CSR10 (TO PREVENT AND CONTROL AIR POLLUTION FROM THE EMISSION OF SULFUR OXIDES)

The line heaters (LH-1 through LH-8) each have a maximum design heat input of less than 10 MMBtu/hr and are therefore exempt from sections 3, 6, and 8.

45CSR13 (PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION)

This is an after the fact Rule 13 permit application. The Weekley Pad started operating equipment at this location in October 2012. As a result, Stone Energy was issued a Consent Order by the WVDEP, CO-R13-E-2013-19 on November 6, 2013. Per the consent order, a Rule 13 permit determination was submitted to the WVDEP on February 4, 2014. It was determined by the DEP that the Weekley Pad would require a Rule 13 permit in order to be in compliance with its operation practices.

They have demonstrated compliance with 45CSR13 by submitting a complete permit application, placing a legal advertisement in *The Wetzel Chronicle* on July 23, 2014, and paying the applicable fees.

45CSR16 (STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES PURSUANT TO 40 CFR PART 60)

The facility is subject to 45CSR16 because they are subject to NSPS, Subparts JJJJ and OOOO. These requirements are discussed in the federal section below.

45CSR22 (AIR QUALITY MANAGEMENT FEE PROGRAM)

Stone is not subject to 45CSR30. The ZMBG Well Pad is subject to 40 CFR 60, Subparts JJJJ and OOOO; however, they are exempt from the obligation to obtain a permit for a reason other than their status as an area source.

DThe applicant has paid the \$1,000 application fee, the \$1,000 NSPS fee as required by section 3.4.b of this rule because they are subject to NSPS requirements as described in this regulatory review section. The \$2,500 NESHAP fee for 45CSR34, Subpart ZZZZ is waived when compliance is demonstrated by compliance with NSPS, Subpart JJJJ.

RAdditionally, the source will be added to the fee database when the registration is issued and the Stone is required to pay the appropriate annual fees and keep their Certificate to Operate current.

45CSR34 (EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS)

The facility is subject to 45CSR34 because they are subject to 40 CFR 63, Subpart ZZZZ. These requirements are discussed in the federal section below.

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Federal Regulations: The federal regulations listed below apply to this facility.

NSPS, Subpart JJJJ (STANDARDS OF PERFORMANCE FOR NEW STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES)

40 CFR 60, Subpart JJJJ establishes emission standards for applicable SI ICE.

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The natural gas fueled generators are considered new units subject to NSPS, Subpart JJJJ. These units were purchased as certified prime [GE-1] and emergency units [GE-2]. Each of these generators have been certified by EPA for their appropriate intended use.

The prime generator engine [GE-1] is a Cummins PSI 5.7 L engine with a rating of 104.7 hp at 1800 rpm with a manufacturing date of 2014. This engine is a certified engine and the application included EPA's 2014 model year certificate of conformity with the CAA of 1990 for Power Solutions International; Engine Family EPSIB5.70NGP. The certificate number is EPSIB5.70NGP-004.

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Engine [GE-1] is classified as engines greater than or equal to 100 and less than 500 hp (except gasoline engines and LPG engines), constructed after June 12, 2006 and manufactured on or after July 1, 2008. They are subject to the emission standards § 60.4233(e), Table 1. The 104.7 hp Cummins PSI 5.7 L engine was manufactured

after the July 1, 2011 date for engines with a maximum rated power capacity less than 500 hp. The engine is subject to the following emission limits: NOx - 1.0 g/HP*hr; CO - 2.0 g/HP*hr; VOC (not including formaldehyde) - 0.7 g/HP*hr. Based on the manufacturer's data sheet for this engine, the emission standards will be met.

The emergency generator engine [GE-2] is a Tradewinds TGM30-UL engine with a rating of 50 hp at 1800 rpm with a manufacturing date of 2012. The engine is a certified engine and the application included EPA's 2012 model year certificate of conformity with the CAA of 1990 for Power Solutions International for PSI engine family CPSIB2.972ED. EPA requires that a certificate of conformity identification tag be placed on every engine that is produced under this engine family number. This engine family number will be included in the permit so that it can be verified in the field.

Engine [GE-2] is classified as engines between 25 and 100 HP (except gasoline and RB LPG) that commenced construction after June 12, 2006 and were manufactured on or after January 1, 2009. They are subject to 40 CFR § 60.4233(d) and the emission standards in Table 1 for their emergency stationary SI ICE. The engine is subject to the following emission limits: NOx + HC - 10.0 g/HP*hr and CO - 387.0 g/HP*hr. Based on the manufacturer's data sheet for this engine, the emission standards will be met.

NSPS, Subpart OOOO (STANDARDS OF PERFORMANCE FOR CRUDE OIL AND NATURAL GAS PRODUCTION, TRANSMISSION AND DISTRIBUTION)

EPA published its new source performance standards (NSPS) and air toxic rules for the oil and gas sector on August 16, 2012 and published their amendments on September 23, 2013.

40CFR60, Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification, or reconstruction after August 23, 2011. The affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart as described below:

- a. Each gas well affected facility, which is a single natural gas well.

The seven gas wells that exist at the Weekley Well Pad were drilled principally for the production of natural gas and were done so after August 23, 2011; therefore, these wells are considered affected facilities under this subpart. Stone is subject to the recordkeeping and reporting requirements of §§ 60.5410 and 60.5420. Stone will demonstrate continuous compliance by demonstrating compliance with the notification, recordkeeping, and reporting requirements of the permit.

The API numbers for the seven wells are: 103-02689 (Weekley 2H), 103-02690

(Weekly 3H), 103-02691 (Weekly 4H), 103-02692 (Weekly 5H), 103-02693 (Weekly 6H), 103-02695 (Weekly 8H), and 103-02525 (Wiley 1).

- d. For the natural gas production segment, each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

The Weekley site only utilizes non continuous bleed pneumatic control devices.

D *They are natural gas driven, but only vent intermittently after being actuated; therefore, they are not considered affected facilities.*

- e. Each storage vessel affected facility, which is a single storage vessel located in the oil and natural gas production segment, natural gas processing segment, or natural gas transmission and storage segment, and has the potential for VOC emissions equal to or greater than 6 tpy as determined according to this section by October 15, 2013 for Group 1 storage vessels and by April 15, 2014, or 30 days after startup (whichever is later) for Group 2 storage vessels. A storage vessel affected facility that subsequently has its potential for VOC emissions decrease to less than 6 tpy shall remain an affected facility under this subpart.

The storage vessels located at the Weekley Well Pad have PTE less than 6 tpy and therefore, are not considered an affected source. To quantify emissions, the separators feeding the storage vessels were sampled in order to assess flashing potential. Results were obtained for gas to oil and gas to water ratio measurements related to the organic and aqueous fractions removed by the separator. These results predict emissions from all tanks to be less than 6 tpy VOC.

40 CFR63, Subpart ZZZZ (NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES)

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Subpart ZZZZ establishes national emission limitations and operating limitations for HAP's emitted from stationary RICE located at major and area sources of HAP emissions. The engines at this facility are subject to the area source requirements and are considered "new" sources.

The requirements for new stationary RICEs located at any area source to be in compliance with Subpart ZZZZ is to demonstrate compliance with NSPS, Subpart JJJJ. The requirements for NSPS, Subpart JJJJ were previously discussed and the proposed engines meet these standards.

Non-applicability: rules listed in this section do not apply to this facility.

45CSR 30 (REQUIREMENTS FOR OPERATING PERMITS)

The Stone Energy Weekley Pad facility is not subject to 45CSR30 because they do not meet the definition of a major source. Although the facility is subject to NSPS, Subparts JJJJ and OOOO and NESHAP, Subpart ZZZZ, they are exempt from the obligation to obtain a permit because they are not otherwise required to do so.

40 CFR 60, Subpart Kb (STANDARDS OF PERFORMANCE FOR VOLATILE ORGANIC LIQUID STORAGE VESSELS (INCLUDING PETROLEUM LIQUID STORAGE VESSELS) FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER JULY 23, 1984)

Subpart Kb establishes control requirements, testing requirements, monitoring requirements, and recordkeeping and reporting requirements. Subpart Kb applies to any storage vessel with a capacity greater than 19,313 gallons that is used to store volatile organic liquids except that it does not apply to storage vessels with a capacity greater than 39,890 gallons storing a liquid with a maximum true vapor pressure less than 3.5 kPa or with a capacity greater than 19,813 gallons but less than 39,890 gallons storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

This subpart does not apply to vessels with a design capacity less than or equal to 419,204 gallons used for petroleum or condensate stored, processed, or treated prior to custody transfer.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the facility. Provided below is a toxicity summary.

Benzene: Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidence of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. EPA has classified benzene as a Group A, human carcinogen.

Ethyl Benzene: Ethyl benzene is mainly used in the manufacturing of styrene. Acute (short-term) exposure to ethyl benzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects, such as dizziness. Chronic (long-term) exposure to ethyl benzene by inhalation in humans has shown conflicting results regarding its effects on the blood. Animal studies have reported effects on the blood, liver, and kidneys from chronic inhalation exposure to ethyl benzene. Limited information is available on the carcinogenic effects of ethyl benzene in humans.

In a study by the National Toxicology Program (NTP), exposure to ethyl benzene by inhalation resulted in an increased incidence of kidney and testicular tumors in rats, and lung and liver tumors in mice. EPA has classified ethyl benzene as a Group D, not classifiable as to human carcinogenicity.

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N-hexane: n-Hexane is a solvent that has many uses in the chemical and food industries, either in pure form or as a component of commercial hexane. The latter is a mixture that contains approximately 52% n-hexane; the balance is made up of structural analogs and related chemicals such as methylpentane and methylcyclopentane. Highly purified n-hexane is used as a reagent for chemical or chromatographic separations. Other grades of n-hexane are used as solvents for extracting edible fats and oils in the food industry and as a cleaning agent in the textile, furniture, and printing manufacturing industries. Hexane is the solvent base for many commercial products, such as glues, cements, paint thinners, and degreasers. n-Hexane is a minor constituent of crude oil and natural gas and occurs in different petroleum distillates. No data are available regarding the potential toxicity of n-hexane in humans orally exposed to n-hexane. However, as might be expected for a chemical with such wide application, the potential exists for persons to be environmentally and/or occupationally exposed to n-hexane via other routes of exposure.

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Toluene: The acute toxicity of toluene is low. Toluene may cause eye, skin, and respiratory tract irritation. Short-term exposure to high concentrations of toluene (e.g., 600 ppm) may produce fatigue, dizziness, headaches, loss of coordination, nausea, and stupor; 10,000 ppm may cause death from respiratory failure. Ingestion of toluene may cause nausea and vomiting and central nervous system depression. Contact of liquid toluene with the eyes causes temporary irritation. Toluene is a skin irritant and may cause redness and pain when trapped beneath clothing or shoes; prolonged or repeated contact with toluene may result in dry and cracked skin. Because of its odor and irritant effects, toluene is regarded as having good warning properties. The chronic effects of exposure to toluene are much less severe than those of benzene. No carcinogenic effects were reported in animal studies. Equivocal results were obtained in studies to determine developmental effects in animals. Toluene was not observed to be mutagenic in standard studies. The major use of toluene is as a mixture added to gasoline to improve octane ratings. Toluene is also used to produce benzene and as a solvent in paints, coatings, synthetic fragrances, adhesives, inks, and cleaning agents. Toluene is also used in the production of polymers used to make nylon, plastic soda bottles, and polyurethanes and for pharmaceuticals, dyes, cosmetic nail products, and the synthesis of organic chemicals.

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Xylenes: Commercial or mixed xylene usually contains about 40-65% m-xylene and up to 20% each of o-xylene and p-xylene and ethyl benzene. Xylenes are released into the atmosphere as fugitive emissions from industrial sources, from auto exhaust, and through volatilization from their use as solvents. Acute (short-term) inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects. Chronic (long-term) inhalation exposure of humans to mixed xylenes results primarily in central nervous system (CNS) effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported. EPA has classified mixed xylenes as a Group D, not classifiable as to human carcinogenicity. Mixed xylenes are used in the production of

ethylbenzene, as solvents in products such as paints and coatings, and are blended into gasoline.

AIR QUALITY IMPACT ANALYSIS

The proposed changes in this permit application do not meet the definition of a major modification according to the definitions in 45CSR14 and 45CSR19; therefore, modeling is not required for this permit application.

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MONITORING OF OPERATIONS

The following monitoring, recordkeeping and reporting requirements are included in the permit:

- Visible emissions for opacity
- Catalytic reduction and Air/fuel ratio for generator engine
- Maintenance records of generators
- Hours of operation for emergency generator
- Tank truck throughput of condensate
- NSPS, Subpart JJJJ monitoring, recordkeeping, reporting of engines
- NSPS, Subpart OOOO recordkeeping requirements (natural gas wells)

Although emissions from the condensate tank are not routed to a pollution control device, it was decided not to request a site specific sample and analysis for the condensate tank at this site. The reason for this decision is based on the low volume of condensate at this site (4,000 gallons annually) and that this application is an after the fact application where the throughput is known and not speculated. There will be emission limits for the storage tanks and a throughput limit that will have to be demonstrated. Furthermore, the representative sample analysis discussion was very thorough and from similar wells within the county. DAQ reserves the right to request testing to determine compliance in the future under 45CSR13 § 6.1.

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RECOMMENDATION TO DIRECTOR

It is recommended that permit R13-3193 be granted to Stone Energy Corporation, Weekley Production Pad located in Porters Falls, Wetzel County, WV. Based on the information provided in the application, including supplemental information received, the applicant should meet all applicable state and federal rules and regulations. It is on that basis that the recommendation has been made.

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Laura M. Jennings
Permit Engineer

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Date

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