Florida Department of

Memorandum — Environmental Protection

TO: J. Charles Harp
Program Administrator
Waste Management/Air Resources

THROUGH: Armando I. Sarasua, P.E.
Air Permitting Supervisor

FROM: Angelia M. Jackson
Permit Processor

DATE: May 7, 2014

SUBJECT: Evaluation Summary for Title V Operation Permit Revision for Quantum Resources Management, LLC, St. Regis Gas Treatment Facility and Jay Gas Plant
Draft/Proposed Permit No. 1130005-016-AV, Santa Rosa County

We recommend issuing notice of intent to issue a Title V Operation Permit Revision for the facility referenced above. This revision incorporates construction permit 1130005-015-AC, into 1130005-012-AV, effective January 17, 2011. Permit 1130005-015-AC authorized the construction of a skid mounted Natural Gas Liquids Fractionation Unit, operation of an existing Jay Hot Oil Heater (EU 042), and throughput increase of two 630,000 gallon fixed roof processed crude oil storage tanks.

This revision also incorporates 40 CFR 63 Subpart DDDDD - Standards for Industrial, Commercial, and Institutional Boilers and Process Heaters. Various gas fired Process Heaters EU 040, 041 and 042 (Jay 2 and Jay 3 process heater, Jay 2 and Jay 3 stabilizer bottom heaters and Jay plant hot oil heater) are considered existing units that do not require controls, but are subject to the work practice, monitoring and reporting requirements. The compliance date for these process heaters is January 31, 2016.

Process Description:
This facility consists of sulfur recovery plants, oil and gas treating including natural gas dehydration and tri-ethylene glycol (TEG) regeneration, saltwater disposal, and tertiary recovery.

Two Sulfur Recovery Plants (J2 and J3) (EU 034), were built in the early 1970s and precede NSPS requirements but are subject to emission limits in Rule 62-296.409(2), F.A.C. These plants control sulfur emissions from the production and treating of sour crude oil and gas from the Jay Oil Field.

Pollution Control Equipment:
Sulfur Recovery Plants (J2 and J3) (EU 034) control emissions of acid gas by oxidation and reaction in a multi stage Claus process to for elemental S (min. 96% H_2S recovered as S). Unconverted H_2S is thermally oxidized to SO_2 prior to discharge.

SO_2 emissions from the Primary Emergency Flare (FL01) and the Saltwater Disposal System Flare (FL02) (EU 035) are controlled by a smokeless flare tip on each flare with a manual eductor gas system.

Five 1,000 HP Ingersoll-Rand Recompressor Engines (EU 044) are equipped with catalytic converters, limiting the exhaust concentration of formaldehyde.

Glycol Reboiler Vent (EU 048) controls HAP and VOC emissions with an air-cooled condenser. Centaur turbine (EU 037), Sulfur Storage Pits (Jay 2 and Jay 3) (EU 039), Various gas fired Process Heaters (Jay 2 and Jay 3 process heater, Jay 2 and Jay 3 stabilizer bottom heaters and Jay plant hot oil heater) (EU 040, 041 and 042), Two natural gas-fired Cooper-Bessemer Engines (EU 045 and 046), and a natural gas-fired Waterflood Turbine (EU 050) do not have emission controls.

Environmental Impact:

Emissions Unit	SO_2	NO_X	VOC	CO	PM	HAPS	H_2S
J2,J3 Sulfur Recovery	2490.00	19.40		16.30		0.35	
Flares	730.00	26.80	1.47	22.50	2.00	0.20	
Process Heaters*	0.43	72.3	4.01	60.70	5.51	0.87	
3600 HP Solar Turbine	0.64	60.20	0.40	15.40	1.20	0.13	
14,300HP Waterflood Gas Turbine	2.30	171.00	1.40	15.00	4.50	0.50	
Engines*	0.33	464	40.2	158.2	18.9	19.77	
Sulfur Pits	5.94						12.30
Processed Crude Oil Tanks			97.40				
Glycol Reboiler Vent			2.20			0.55	
Fugitive Emissions			128.30				
Fractionation Unit			1.07				
TOTAL	3229.64	813.7	276.5	288.1	32.1	22.4	12.30

**The previous environmental impact tables from 1130005-012-AV and 1130005-015-AC only indicated emissions from one (1) recompressor engine and only two (2) process heaters. This table has been updated to include total emissions from all engines as well as emissions from all three (3) process heaters as indicated in the permit application documents received on 09/04/2009 and verified with the facility on 05/07/2014.*

Applicable Rules & Regulations:
Sulfur Recovery Plants (J2 and J3) (EU 034), were built in the early 1970's and precede NSPS requirements but are subject to emission limits in Rule 62-296.409(2), F.A.C. Centaur turbine (EU 037) is subject to 40 CFR 60 Subpart GG - Stationary Gas Turbines, and 40 CFR 63 Subpart YYYY - Stationary Combustion Turbines, incorporated by reference in Rule 62-204.800(8)(b)41 and 62-204.800(11)(b)81, F.A.C., respectively. In addition this unit is subject to applicable requirements of both 40 CFR 60 and 63 subpart A (General Provisions).
Recompressor 4-stroke rich-burn Engines (EU 038 and EU 044) are subject to 40 CFR 63 Subpart ZZZZ (RICE MACT) - Stationary Reciprocating Internal Combustion Engines, because they are located at a major source of HAP emissions.

Sulfur Storage Pits (Jay 2 and Jay 3) (EU 039) are regulated by Rule 62-296.411(1), F.A.C. Glycol Reboiler Vent (EU 048) is regulated by 40 CFR 63 Subpart HH - Oil and Natural Gas Production Facilities. A natural gas-fired Waterflood Turbine (EU 050) is regulated by Rule 62-296.320, F.A.C. The Fractionation Unit is subject to Rules 40 CFR 60 Subpart VVa - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 and 40 CFR 60

Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution.

Compliance Monitoring
Compliance is demonstrated by emissions testing, operations monitoring, fuel monitoring, and visible emissions testing.

Compliance History:
2013 – Inspection noted the facility "In-Compliance". MNC for EU 044 Ingersoll Rand Recompressor NG Engines – Incomplete Recordkeeping. Catalyst inlet temperature not electronically recorded. Compliance without enforcement (CWOE) issued 9/27/2012

2011 - Department personnel conducted the onsite inspection of Quantum St. Regis Treating in Santa Rosa County on July 18, 2011. Mr. Larry Dilmore, Environmental Health and Safety Representative, was available to assist during the inspection. All records were well maintained and available for review. At the time of the inspection, the facility appeared to be operating in compliance with permit conditions. No visual emissions were observed and no objectionable odors were detected in the area surrounding the site.

On December 6, 7 and 8, 2010 the J2 Sulfur Recovery Plant (EU034) was shut down due to a tube leak in the J2 Reaction Furnace Waste Heat Boiler and the Acid Gas was diverted to the St. Regis High Pressure Flare (EU035 - FL01). The estimated daily tons of SO2 flared were as follows:
December 6 - 76 tons
December 7 - 99 tons
December 8 - 26 tons

Warning Letter NWAP 113-1874 was issued on January 19, 2011 for the excess emissions. The enforcement case was closed on 8/29/2011 - CWOE

Fee Summary
This is a Title V operation permit revision with no required permit fees.

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