

**Sandy, Alexander**

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**From:** McCay, Joe <Joe.McCay@Williams.com>  
**Sent:** Tuesday, July 28, 2015 3:42 PM  
**To:** Sandy, Alexander  
**Cc:** Baker, Dick  
**Subject:** Springhill Permit Timeline and Questions

Alex,

**Permit Timeline and Equipment**

Per our discussion today, permits and equipment related to them is as follows:

- GP5-26-00587A (2009) was the initial Williams Laurel Mountain Midstream (LMM) permit after the purchase of the site. It was for the 2-3516LE Cat engines and one dehydrator.
- GP5-26-00587B (2012) was issued to add oxidation catalyst to one of the 3516LE Cat engines, resulting in reduced VOC emission.
- GP5-26-00587C (2013) was for the removal of the 2-3516LE Cat engines and installation of 2 new 3516B Cat Engines. The permit was issued in December of 2012 and installation of the engines began in May of 2015 within the 18 month construction period. These engines are currently operating. (Please note that in the initial application for this GP5, incorrect catalyst information was submitted. The proper information was submitted via email and the GP5 was approved and the proper catalyst installed.)
- The application submitted in May 2015 that is currently being reviewed is for the installation of a new 40 MMSCFD dehydrator with 0.75 MMBTU/hr reboiler. (The incorrect catalyst information was copied from the 00587C initial application and a resubmission of the application with the correct catalyst information was then provided.) The May 2015 application does not request any changes regarding the engines from the 00587C GP5.

Per the cover letter of the May 2015 application currently under consideration, the following will be the equipment status at the station, assuming approval the application for use.

- One (1) 1,500 bhp Electric Motor Driven Compressor (CE-01)
- Two (2) 1,380 bhp Caterpillar (CAT) G3516B Compressor Engines (CE-04 and -05)
- One (1) 25.0 MMscf/day Dehydrator (Regenerator) (DEHY-01)
- One (1) 0.25 MMBtu/hr Reboiler (BLR-01)
- One (1) **NEW** 40.0 MMscf/day Dehydrator (Flash Tank and Regenerator) (DEHY-02)
- One (1) **NEW** 0.75 MMBtu/hr Reboiler (BLR-02)
- Four (4) Produced Water Storage Tanks (424 bbl Total) (TKS)

**Dehydrator Emissions**

The emissions from the 25 MMSCFD dehydrator were carried over from the previous GP5 application. LMM has typically used a significant safety factor for dehydrator emissions based upon GlyCalc predicted emissions and the permit limitations. LMM had discussed internally if the emissions should be recalculated, but decided to leave them per the previous application.

**Pigging**

As requested in the GP5 application, an estimate of emissions for pigging for the Springhill CS was provided. From page 7 of 4 in Attachment C of the application, "Pigging calculations based on 52 events per year and 3,061 scf/event

(assuming 50 scf of gas blowdown at 900 psig)." This resulted in 8.0E-05 tons per year of VOC emissions, 84 tons per year of CO<sub>2</sub>e primarily from methane, and 0.48E-04 tons per year of total HAPs. The parameters of the calculation are based upon a typical pig receiver operation in dry gas service. Typical operation included; frequency (52 times per year), gas analysis, process conditions (900 psig) and receiver size (50 scf). These conditions were reviewed against the Springhill CS typical operations and the resulting calculated emissions. No significant variations were identified that required more detailed calculations.

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