

ATTACHMENT A PROJECT UPDATE

The following is an update on the most recently completed emission reduction project listed on Attachment A to the ESCO Good Neighbor Agreement (GNA).

PROJECT #13: Conduct study to quantify emissions from thermal sand reclaim and to determine if thermal sand reclaim can be operated at recommended temperature.

Actions and Status:

ESCO completed a study to quantify emissions and determine an appropriate operating temperature for the thermal sand reclaimer exhaust. Emissions of Volatile Organic Compounds (VOCs) and Organic Hazardous Air Pollutants (HAPs) were sampled at three exhaust temperatures: 1000 °F, 1200 °F, & 1300 °F. Oregon DEQ has not yet responded to the test reports, but we do not expect significant comments that would alter the results or conclusions.

Emissions from the combustion of natural gas consumed in the process were also estimated and included in our study.

Results:

The results indicate Organic HAPs are reduced significantly at 1200 °F compared to 1000 °F, with little, if any, decrease when increasing the exhaust temperature to 1300 °F. The slight decrease in VOC or HAP emissions gained from a 1300 °F temperature are not justified considering the increased greenhouse gas emissions from natural gas combustion as well as the operating cost increase.

The VOC emission factor at 1200 °F was determined to be 0.046 lbs/ton sand, which is essentially the same value that is permitted and what was recommended based on our literature review (0.048 lbs/ ton sand). This correlates with a destruction efficiency of 98%.

ESCO will continue operate the unit using a minimum operating temperature of 1200 °F, which results in a set point and average temperature of 1230 °F.

Method of Confirmation:

Horizon Engineering confirmed the operating temperature while sampling at each of the three exhaust temperatures. Neighbor groups observed the testing in June 2015 and discussed the results in September 2015.

