Sulfur Condensation in Pressure Reduction Equipment - Field Sample Analysis

MEAS-5-23, PR-015-18607
Status Update, 2/6/2018
Background

• The current PRCI project team investigating the deposition of sulfur on pressure regulation equipment has recognized that the material being identified as sulfur may or may not actually be sulfur for all locations of concern.

• Identifying the specific chemical composition of the material will aid in identifying the underlying source(s) of the material and in developing solutions to mitigate the problems associated with the material deposition in pressure regulation equipment.
Objective

• The objective of this project is to work with the PRCI project team to gather and analyze material that has been deposited on pressure regulation equipment at field sites.
Approach

1. Solicit PRCI member companies and others for locations where “sulfur” contamination has been known to occur.
2. Identify one lab in the US and one in Canada where samples can be sent.
3. Develop sample handling and shipping techniques to ensure preservation of sample integrity.
4. Have samples sent to labs.
5. Review analysis results and summarize findings.
Sample Handling & Cost

- Two tests proposed:
  - X-ray fluorescence spectroscopy for sulfur (~ $80 per sample)
  - Organic composition breakdown via GC-MS for dithiazine (~$800 per sample)
- Need to collect approximately 100g of material.
- Avoid contamination when sampling and maintain in a vial for shipping.
- Chill packs are not needed, but insulation is recommended.
Sample Kit

30 Dram (3.75 oz) Plastic Vial

2 ea

Label for Vial

2 ea

Sample Information:
Sample No: _______________
Company: _______________
Site Address: ______________
Component: ______________
Date: ___/____/____
Notes:_____________________________________________________________

Ziplock Bag

2 ea

8x6x4-¼ Cooler w/shipping label
Path Forward

- Create specific site list for sampling.
- Send sampling materials to sites.
- Samples sent directly to Lab.
- Accumulate results.
- Generate report.
Pipeline contacts indicating possible participation

- Boardwalk
- PG&E
- SoCal
- GTI (member company site info provided)
- Southern Star
- Dominion (West)
- National Fuel Gas
- Transcanada Pipelines
- Williams