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MDA C - FLUTE  
COMPARISON

**Cobrain, Dave, NMENV**

**From:** Cobrain, Dave, NMENV  
**Sent:** Friday, February 29, 2008 8:16 AM  
**To:** 'krich@lanl.gov'; Gregory; 'David J McInroy'  
**Cc:** Roberts, Kathryn, NMENV; Shen, Hai, NMENV; 'Michael Dale'; Bearzi, James, NMENV  
**Subject:** FW: FLUTE system tests at MDA C

Kent,

As a clarification to our phone conversation, would you please send the following information with the work plan for the FLUTE system comparison?

1. Outside diameter of the steel tubing to be used in the vapor monitoring well
2. Outside diameter of the tremie pipe to be used to place the sand and bentonite in the vapor monitoring well
3. Inside diameter of the hollow stem auger flights
4. Inside diameter of the casing used to advance the boring during air rotary drilling.

Thanks.

Dave

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**From:** Cobrain, Dave, NMENV  
**Sent:** Friday, February 22, 2008 5:30 PM  
**To:** Gregory; 'David J McInroy'; 'krich@lanl.gov'  
**Cc:** Bearzi, James, NMENV; Kieling, John, NMENV; Roberts, Kathryn, NMENV; Shen, Hai, NMENV  
**Subject:** FLUTE system tests at MDA C

Kent/Dave/David,

We've looked over the results of the phase 1 investigation vapor-phase analyses and the field data sheets that Kent sent yesterday and although we're a little unclear on some of the information presented on the field data sheets; this is what we'd like to see as far as comparison testing:

We tried to pick depths greater than 50 feet since FLUTE told us that the problems with VOC sampling occurred at the deeper intervals. We chose on location at a shallow depth just to check that there aren't any issues with the FLUTE at shallow depths. We also tried to pick two locations each where VOC concentrations were relatively low, medium and high, respectively, at depths below 50 feet. This testing will be thorough to ensure that our conclusions will withstand the scrutiny of critics in the future. The following activities apply to each location and depth listed below:

Packer vapor sampling:

1. Flow rate for all tests – 30 cubic feet per hour (the data sheets list the flow rates in standard cubic feet per hour but no conversion is included and it seems more likely that the measurements were not corrected in the field)
2. Measure percent methane, CO2 and oxygen every 2 minutes and immediately prior to sample collection.



3. Record ambient air temperature and barometric pressure immediately prior to each test.
4. Record actual air flow rates during purging and sampling activities.
5. Collect samples in SUMMA canisters for laboratory analysis of VOCs after purging for 5 minutes, 10 minutes and 20 minutes using the same method used during the first phase of investigation.
6. Collect a sample laboratory analysis of tritium after collection of the third VOC sample at each location using the same method used during the first phase of investigation.

FLUTE System vapor sampling:

Install the FLUTE system within 48 hours after the Packer testing is completed. And conduct the FLUTE system testing within 48 hours after installation of the system.

1. Flow rate for all tests – 30 cubic feet per hour
2. Measure percent methane, CO<sub>2</sub> and oxygen every 2 minutes and immediately prior to sample collection.
3. Record ambient air temperature and barometric pressure immediately prior to each test.
4. Record actual air flow rates during purging and sampling activities.
5. Collect samples in SUMMA canisters for laboratory analysis of VOCs after purging for 5 minutes, 10 minutes and 20 minutes using the same method used during the first phase of investigation.
6. Collect a sample laboratory analysis of tritium after collection of the third VOC sample at each location using the same method used during the first phase of investigation.

Record all activities conducted during the testing including the types of packers used, the method of emplacement, the types of tubing used, the instruments used to measure field parameters and the methods of sample collection, dates and times that all activities were conducted, any conditions that might influence the sampling results, the method of FLUTE inflation, the FLUTE construction materials, boring logs with lithologic descriptions, static and induced pressure measurements and downhole temperature readings, if obtained, tritium sampling methods and measurements.

In addition, install a vapor monitoring well using the same method and materials as MDA G boring BH34 (54-24394) in boring 50-24771 (BH-14 inside MDA C fence). The well construction diagram for BH34 (54-24394) is attached. This will give us a direction comparison to the FLUTE system because a FLUTE system is being installed in a nearby boring with similar detected concentrations. Assuming the FLUTE system is effective, this will help us to defend against any criticism regarding data reliability.

- 1) 50-24784 (BH-2, inside MDA C fence)  
168-ft - Medium
- 2) 50-24817 (BH-8, outside MDA C fence)  
200-ft - Medium
- 3) 50-24821 (BH-41, outside MDA C fence)  
238-ft - High
- 4) 50-24822 (BH-42, outside MDA C fence)  
20-ft - low/Med  
100-ft - low  
250-ft - Med/High
- 5) 50-24771 (BH-14, inside MDA C fence)  
150-ft – High

NMED needs a work plan that proposes the activities described above and the methods for evaluating the results. It must be brief and to the point and include a proposed method for reporting the results. You need an approval from us to proceed with the tests so that you're covered on your end for the proposed comparison tests.

Give Katie, Hai or me a call. I'm sure you'll want to discuss this further.

Dave

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