

US Ecology Remedial Investigation

**TASK 3: LONG-TERM
MONITORING**

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TASK 3 — LONG TERM MONITORING



Groundwater Sampling



Soil Gas Sampling

GROUNDWATER WELLS



GROUNDWATER MONITORING

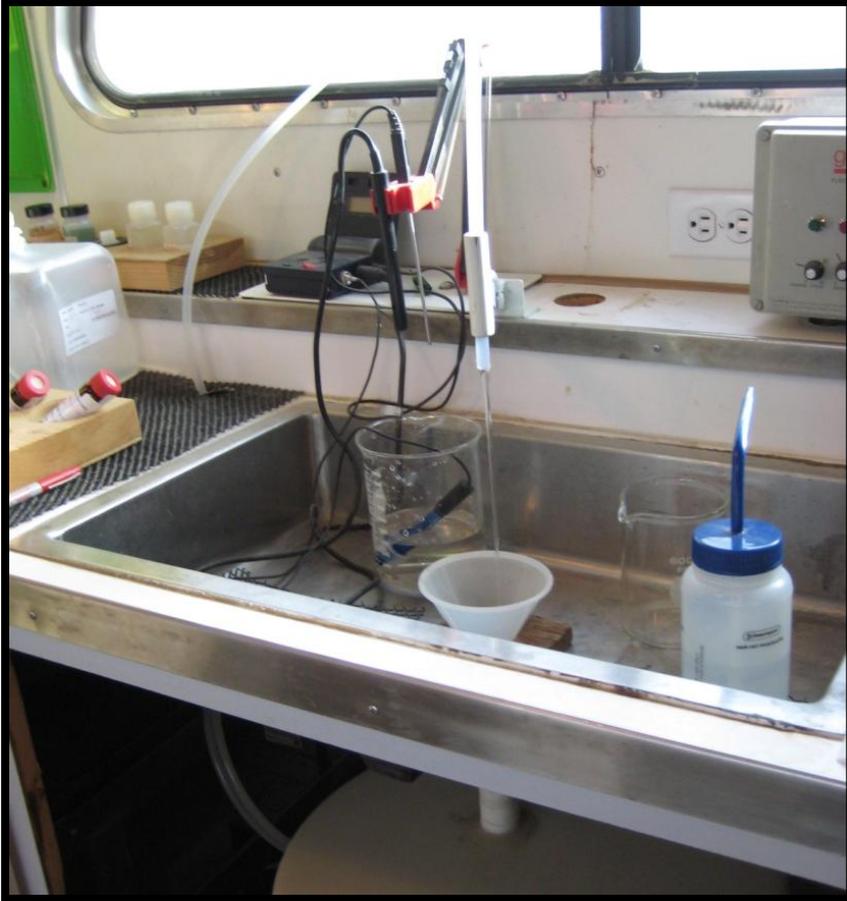
- ◎ 7 wells will be sampled quarterly for 8 quarters
- ◎ 9 Methods for analysis of VOCs, Anions, Sulfide, Metals, Mercury, SVOCs, PAHs, PCBs, Phenols, and Cyanide in accordance with DQO and Sampling and Analysis Plan
- ◎ Procedure follows Vista standards and procedures, ASTM D4448 and ASTM D5903

GROUNDWATER PROCEDURE



- ⦿ West to East per ROP-49
- ⦿ Preoperational Setup done by US Ecology Technician
- ⦿ 3 well casing volumes purged
- ⦿ 3 gallons purged for sampling tube

GROUNDWATER PROCEDURE CONT.



- ④ 3 – 40mL VOA Vials (VOCs)
- ④ 2 – 1L Amber Glass Bottles (SVOCs)
- ④ 1 – 1L Amber Glass Bottles (Phenols)
- ④ 1 – 1L Plastic Bottle (Metals, Hg, U)
- ④ 1 – 500mL Plastic Bottle (Anions and Cr(VI))
- ④ 1 – 250mL Plastic Bottle (Sulfide)
- ④ 1 – 1L Amber Glass Bottle (PAHs)
- ④ 1 – 1L Amber Glass Bottle (PCBs)
- ④ 1 – 1L Plastic Bottle (Cyanide)

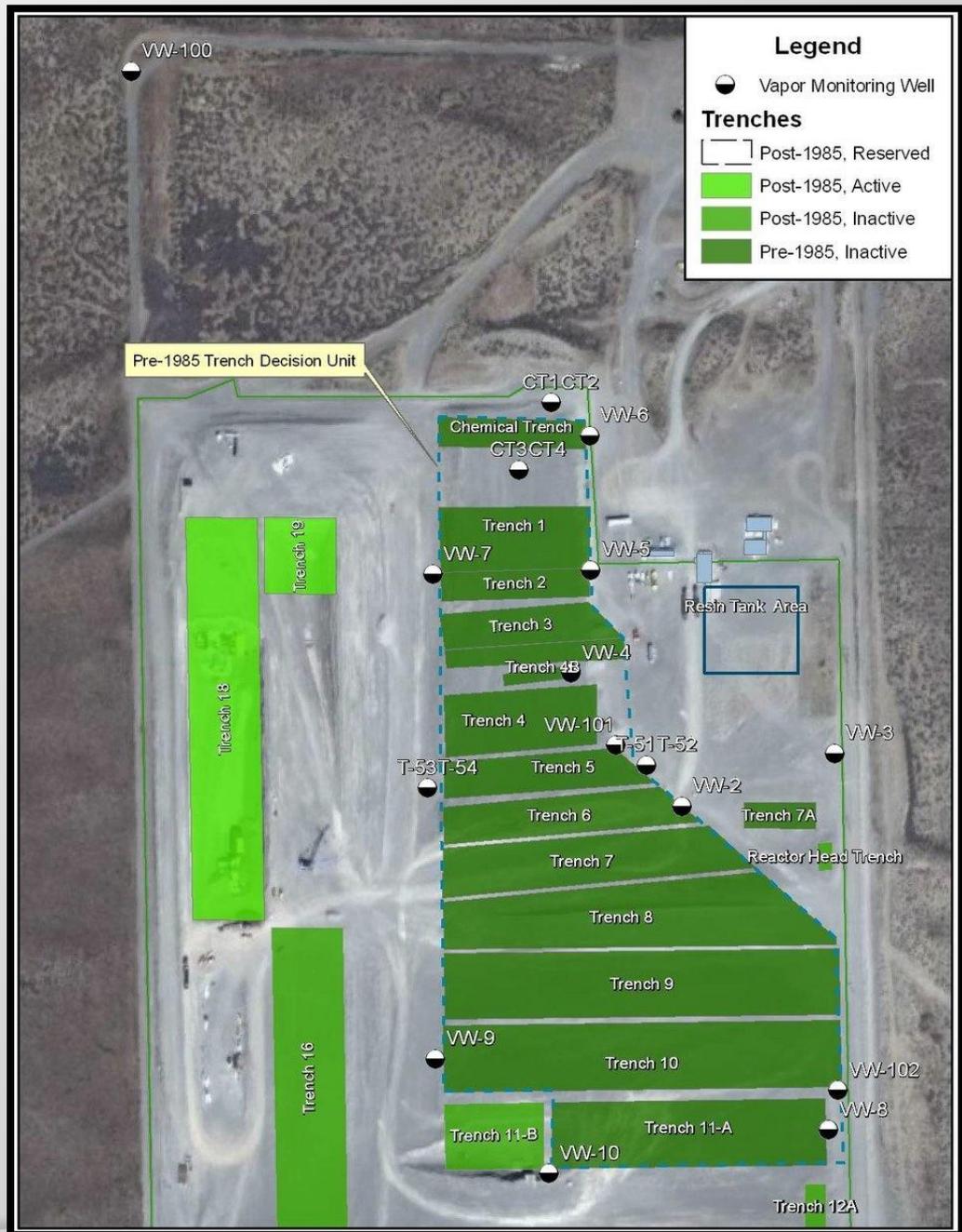
GROUNDWATER SHIPPING

- ⦿ 5 – 82 quart coolers and 1 – 36 quart cooler used each quarter
- ⦿ Temperature Blank and Trip Blank in each cooler
- ⦿ Crushed double bagged ice
- ⦿ Chain-of-Custody in each cooler
- ⦿ Shipped everyday and overnighted to Laboratory

SOIL GAS MONITORING

- ◎ 41 wells will be sampled quarterly for 8 quarters
- ◎ TO-15 analysis of volatile organic compounds
- ◎ Follows Vista Standards and Procedures and ASTM D5314

SOIL GAS WELLS



SOIL GAS PROCEDURE



- ◎ Sample Tubes for each well
- ◎ Well purged 3 air volumes
- ◎ Sample pump flow rate 2 L/min
- ◎ New wells take 1 min to 14 min to purge

SOIL GAS PROCEDURE CONT.



- Previously installed wells take from 59 min to 102 min to purge
- VW-100 through VW-102 setup by US Ecology Technician
- Average of 32 min to purge

SOIL GAS SHIPPING

- ◎ Four summa canisters in a box
- ◎ Boxes broke up into four quadrants with foam in each for stability
- ◎ Chain-of-Custody for each box
- ◎ Custody seals are placed on outside of box
- ◎ Samples are shipped everyday and overnighted to laboratory

LABORATORY ANALYSIS

- ◎ Samples were analyzed at two accredited contract laboratories
 - Groundwater samples at Lionville
 - Soil gas samples at Southwest Research

COMPLETION OF LONG-TERM GROUNDWATER MONITORING

- ◎ 5 quarters of sampling completed to date
 - 4 quarters of data have been validated
 - 1 quarter of data is currently undergoing analysis

- ◎ Will be completed by December 2009

COMPLETION OF LONG-TERM SOIL GAS MONITORING

- ◎ 4 quarters (1 year) of sampling completed to date
 - 4 quarters of data have been validated

- ◎ Will be completed by March 2010