

**ABBREVIATED LEAD ISOTOPE SAMPLING PLAN
For Former Mohr Orchard Site**

SITE NAME: Former Mohr Orchard

TDD#: E43-026-09-07-014

SITE LOCATION: North Whitehall Township, Pennsylvania

SITE OR FACILITY TYPE: Mix of residential/commercial

DATE: January 2010

EPA OSC: Rich Fetzer

START PREPARER: Erik Armistead

QA REVIEWER: Dave Scerbo

OBJECTIVE OF SAMPLING: Collect groundwater and bedrock samples from specific fracture zones identified during geophysical studies in five wells drilled by EPA. Samples will be shipped to the USGS National Laboratory in Reston, Virginia for lead isotope analysis. Samples will be used to assist in the identification of the source of lead contamination identified in residential well water systems. Sampling will occur in January 2010.

NO. OF SAMPLES	MATRIX	CONTAINER TYPE	ANALYSIS	PRESERVATIVE
13-18	Bedrock	Two resealable Ziploc bags	Lead Isotope	Ice
18-23	Groundwater	USGS-prepared, 1-liter nalgene bottle	Lead Isotope	USGS-prepared HNO ₃ , Ice

Notes:

HNO₃ = Nitric Acid

USGS = United States Geological Survey

GROUNDWATER SAMPLING METHOD:

Groundwater samples will be collected using a 20-foot packer interval from previously selected locations based geophysical studies performed on each of the five wells. Additionally, one groundwater sample will be collected from each well from a depth of approximately 200 feet with packers deflated. Groundwater samples will be collected in accordance with Tetra Tech SOP No. 010-4, "Groundwater Sampling" 2009. Approximately 100 gallons or a minimum of 33 gallons will be pumped from each isolated 20 foot zone prior to sampling. Water quality measurements will be collected during purging activities and prior to sample collection.

ABBREVIATED LEAD ISOTOPE SAMPLING PLAN For Former Mohr Orchard Site (continued)

BEDROCK SAMPLING METHOD:

Bedrock samples will be selected to be collocated with each isolated groundwater sample. For wells 1 through 3, approximately one foot of core material from each sampled, suspected fracture will be photographed prior to collection and double bagged for shipment to the laboratory. Coring was not conducted at wells 4 and 5 during drilling. For each bedrock sample from wells 4 and 5, a collection of rock cuttings collected from each 100-foot interval will be double bagged for shipment to the laboratory. Only 100-foot intervals with a collocated groundwater sample will be selected for shipment.

SAMPLE & CONTAINER LABELING DESIGNATIONS:

Each sample will be labeled to correspond to the date and sample location as follows:

Ex: 012110-MW1/150-170, 012110-MW1/153-154BR

- 01##10- = January ##, 2010
- MW#- = Monitoring Well #
- ###-### = Sampling Interval in feet
- BR = Bedrock designation

DECONTAMINATION USED: Dedicated, disposable sampling equipment and personal protective equipment (PPE) will be used wherever applicable. Disposable sampling equipment and PPE will be double-bagged and disposed of as dry industrial waste. The need for utilizing heavier non-dedicated digging instruments; due to unfractured bedrock, will require these to be grossly decontaminated with towel wipes and Alconox, in between each sample, in accordance with Tetra Tech SOP No. 002-3, “General Equipment Decontamination” 2009. Packer equipment will be decontaminated with an Alconox and water solution in between each well location.

SAMPLE HANDLING: Each sampling location will be noted in the site logbook in accordance with Tetra Tech SOP No. 024, “Recording of Notes in Field Logbook” 2008. Chain-Of-Custody tracking will be provided by the carbon-less EPA forms in Forms-II Lite, and shall be filled out to correspond with the transfer of samples from the field. Samples will be shipped each day to the USGS laboratory via Federal Express.

QUALITY ASSURANCE/QUALITY CONTROL: Field QA/QC measures will be applied in accordance with Tetra Tech SOP No. 024, “Recording of Notes in Field Logbook,” and Tetra Tech’s QAPP for START (Tetra Tech 2008, 2006).