T8M-ESI-1002439

TetraTech HR Scoring Report

p.10 - Soil Gas Sampling

May 2013 - soil gas probes (9) installed in the vicinity of MW-20, sampled in 11/2013. TCE / CDCE 3400 µg/m³, 460 µg/m³, respectively. May 2014 - 2 probes resampled & 5 added / sampled. TCE up to 3100 µg/m³ and CDCE 470 µg/m³. (Ref. 22 (1,2,19)) (Ref 23).

Sec. 6.3

EPA Env. Res. Team (ERT) - VI investigation 5/1/16. Tetratech = 7 SG samples

2 TetraTech Sampling Events 4/2016 & 5/2016.

3/2016 - Plaintiff collected a sb sample (12-13' bgs) from a residence in the NW corner of neighborhood. Plaintiff results reportedly show VC, chromium, Cr6+. Tetratech repeated the sampling and advanced a boring 16' bgs. Samples GM-EH-01-SB1 & GM-EH-01-SB2. No observation of waste nor PID results indicated impact

EHSG006

check results-

TetraTech collected 7 sb samples between 3-10 ft bgs. As, Co, Mn above EPA RSLs. No VOCs. 3 sb samples b/w 10-15 ft bgs - As above RSLs. PID screening - no evidence of waste.

Each soil core was logged + screened w/ PID. No evidence of non-native material or waste material was observed.

Subsurface soil in EH neighborhood is not considered a "source area"

Soil borings + soil gas @ EH, 3 surface (2s + 1 dup), 9 sb, 12 GW, 7 SG

EH drainage ditch - 2 sw, 2 sed, Drainage ditch b/w GM and EH.

Why refer to Grenada Manufacturing repeatedly as source samples? Vs EH samples?

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WTP basin → is it really considered a source? It is more or less isolated (save for permeability of the concrete). Why use EPA SSVs (ecological freshwater sediment screening values)? Is this considered a pond?

Wetland/Disposal Area samples – industrial soil RSL vs groundwater protection SSL for VOCs

Soil gas VISLs ~ Table 8 App B

Section 6.5 - GW migration pathway.

Ref 11 p 2-6 (p 27 pdf)

GW:

Above Screening

SW: Cu, Pb, Mn (OD)[SW]; Cu, Pb, Mn (DD b/w (BM & EH)[SW]; Cu, Mn, Pb, Zn (DD N-S through EH)[SW]

Sed: Cr, Mn (OD); Acetone, As, Cd, Cr, Cu, Mn, Zn (DD leading to Southern wetlands); Acetone,

Present below Screening

GW

SW: Acetone, DCE, TCE (OD), None in RC

Sed

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Soil gas onsite vs. offsite - can/should be done, will be

(#1) Sampling methods

① Does not look like he followed the AMS procedure. Explain why
Reusable pt vs expendable pt - 2 options.
JF appears to have done neither.
- Air-stone method - not standard practice
- if tube perfectly in center of drilled hole (3/16" ø margin) you are going to have sealing issues
- Close to surface - roots, etc - preferential pathways to surface. So is your sample really soil gas or is it air or a combo.
- Did Helium tests gets performed? If not, how can you prove you have continuity?
- Sampling apparatus - any equipment blank performed? Results with such similarity suggest that an EB should be performed/collected.
- 2" of sand topped with feet of bentonite → limited contact with soil gas you are trying to sample. Bentonite expands when hydrated, so it expanded into the sand, reducing the 2" column height

Summa canisters = 400 mL, ind. certified

- Did he use EPA/Arcadis SBSI ports?

Labs
- Why 3 labs?
- Correlation b/w labs problematic

Data Handling
- Data validation?

- Background Air sample - JP
  - wind direction incorrect

- compare duplicate samples collected EPA & Arcadis vs. Plaintiff data

- Soil gas

- VI pathway - needs to be challenged

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