APPENDIX A – FIELD LOGBOOK
Monday September 22, 2014
Weather: Clear, sunny, 60's-70's
Personal: Chris Hoyland & Trevor Gustafson
Task: Mobilize, review residential LIP locations,
Health & Safety/Project Orientation
0935 Depart BMCo (Holmes) with Trevor Gustafson
in separate trucks.
1152 Arrive in Neodesha, KS, at BP Remediation
Bldg
1320 Meet Matrix Environmental LLC (litwack)
by Dan Thompson
1325 Go with Trevor to look at residential
LIP & MW locations, stake a utility clearance
around locations.
1530 Arrive on-site, Geotechny on-site with
rig (semi-trailer delivery), Joseph Groves & Kenneth Brown
1630 Complete Project & Safety Orientation with
Matrix & Geotechny, show Geotechny
residential LIP locations.
1730 Off-site.

Tuesday September 23, 2014
Weather: Clear, Sunny, 50's-70's °F
Personal: Chris Hoyland & Trevor Gustafson
Task: LIP/CPT - field near remediation Bldg, NW
of Tank 12th St. Complete LIP-1-LIP-7.
0700 Arrive on-site, Matrix & Geotechny on-site
at remediation Bldgs, Geotechny filling
up water tank.
0720 Complete safety kick-off meeting (PTA)
site trip - Bldgs.
0737 Bump test MatrixAE Plus: 93/100 ppm Ethylene
29/29 ppm H₂S, 49/50 ppm CO, 50/50% LRC
20.9/20.9% O₂.
0840 Setup on first LIP/CPT boring - south
of Remediation Bldg west of 12th St.
LIP-1
0850 Begin LIP/CPT @ LIP-1 W 95.680454°
Distance between CPT cone tip & LIP window is
2.7 ft.
0827' refusal at 21.6 ft bgs @ LIP-2 CPT.
-NA5/2 positive LIP signal 16.8'-16.9' bgs
LIP refusal: 18.1' bgs.
0830 Deco drill rods
0845 Mobilize south to LIP-2.
0849 Fill borehole with granular bentonite.
0900 Begin pushing CPT/LIF at LIF-2
LIF-2: N 37° 42' 58.82" W -95° 68' 40.08"

0913 CPT TD = 20.03 ft, LFS refusal
LIF TD = 17.37 ft, LFS
LIF signature 11.1 ft to 17.37 ft, LFS

0923 Mobilitize to LIF-3; Bentonite LIF-2

0926 Set-up at LIF-3, NW of intersection of Tank & 12th St.
Bentonite = high Casing Seal, Granular Utility
Grade, Wyoming Soda Bentonite, Halliburton,
Baroid Industrial Drilling Products, P.O. Box
50 pound bag.

0939 Begin pushing CPT/LIF at LIF-3
0946 CPT TD = 20.74 ft, LFS refusal
LIF TD = 18.08 ft, LFS
LIF signature at 11.6' - 18.08' LFS
LIF-3: N 37° 42' 58.82" W -95° 68' 49.63"

1000 Decen drill rods, get Bentonite LIF-3 barrel

1030 Margret Townsend (KDI/GE) on-site

1048 Mike Orth (NECO) on-site

1105 Fix calibration on rig for depth recording, mobilize to LIF-4.

1119 Begin pushing CPT/LIF at LIF-4.

1125 Abandon hole - LIF not recording depth

1154 Off-set LIF-4 location.

1158 Begin pushing CPT/LIF at LIF-4
LIF-4: N 37° 42' 58.82" W -95° 68' 47.64"

1206 CPT TD = 17.52 ft, LFS refusal at LIF-4
LIF TD = 14.94' LFS
LIF signature at 8.4' - 14.94' LFS

1208 Pull a decen drill rods

1226 Off-site Lunch Break

1305 Arriye on-site, Margret Geotech on-site
Geotech Disperse of Decen H2O in SS and draw. Make new Decen barrel base bent.

1313 Mobilize & Set-up at LIF-5.

LATE ENTRY: LIF-4 is N 2 ft west of LIF-4A.

1320 Margret Townsend (KDI/GE), Mike Orth (NECO) on-site.

1332 CPT TD = 17.66' LFS at LIF-5, refusal
LIF TD = 15.47' LFS
LIF signature at 12.3' - 13.2' LFS, 11.6' - 14.4' LFS, 15.47'

1350 Mobilize & Set-up at LIF-6

1356 Off-site

LATE ENTRY: LIF-5 N 37° 42' 59.29" W -95° 68' 14.4"

1410 Begin pushing CPT/LIF at LIF-6

1418 Stop advancing, LIF not recording depth, CPT stopped at 16.7' LFS, LIF stopped at 9.8' LFS
1502. Maggot informed method WL = 12 + 4.3 in area based on data from Paris (AECas).
1515. Off-set LIF-6 = LIF-6A
1520. Maggot, off-site.
1553. Off-set LIF-6A = Due to logging depth problem with LIF. Off-set LIF-6A = LIF-6B.
1555. Begin pushing LIF-6 B CPT/LIF.
1605. CPT TD = 19.35' BGS at [LIF-6B] refusal. LIF TD = 16.77' BGS. LIF signatures at 11.1' - 16.77' BGS.
1607. Pull & decon drill rods.
1616. Mobilize a set-up at LIF-7, Trevor (Rheo) off-site. Borehole: LIF-6, 6A & 6B holes. LIF-6B = N 37° 43' 39.8'' W - 95° 49' 49.9''.
1635. Begin pushing CPT/LIF at [LIF-7].
1642. CPT TD = 21.31' BGS refusal. LIF TD = 18.76' BGS. LIF signatures at 8.4' - 18.76' BGS.
1648. Pull & decon drill rods, clean-up & pack-up.
1730. Matrix & Geotechnology off-site.
1735. Off-site, tighten IDM drill rings one one (1) drill.

Wednesday September 24, 2014
Weather: Overcast - sunny, 601-80's.
Personnel: Chris, Huglund.
Task: Complete CPT/LIF at LIF-8, 9, 10, 11, 12, 13, 14, 15, 16 & 17.
0605. Aircrew on-site, Matrix (Dan Thompson) & Geotechnology (Joe & Ken) on-site.
0710. Tailgate safety meeting (PTA).
Begin borehole LIF-7 hole.
LIF-7: N 37° 28' 52.4'' W - 95° 68' 36.2''.
0733. Begin pushing CPT/LIF at [LIF-8].
0741. CPT refusal TD = 23.67 ft lbs.
LIF TD = 21.06 ft lbs.
LIF signatures at 12.4' - 21.06' BGS.
0745. Pull & decon drill rods.
LIF-8: N 37° 42.9' 43. W - 95° 69.4' 37.
Begin borehole LIF-8 hole.
0751. Mobilize & setup on [LIF-9].
0819. CPT TD = 24.23 ft lbs refusal. LIF TD = 21.67 ft lbs.
LIF signatures at 12.6'-21.67' BGS
Pull a Decan drill rods
LIF-9: N 37.428520° W 95.691505°
Bentonic LIF-9 hole.
0836 Mobilize to LIF-10 & setup
0849 Begin pushing CPT/LIF at [LIF-10].
0856 CPT TD: 21.59 ft bgs refusal
LIF TD: 19.04 ft bgs
LIF signature at 11.0'-19.04' bgs
Pull a Decan drill rods
LIF-10: N 37.428082° W 95.69171°
Bentonic LIF-10 hole
0904 Mobilize to LIF-11 & setup
0935 Begin pushing CPT/LIF at LIF-11.
0945 CPT drill rig died at LIF depth of 13.53 ft bgs
CPT data/software could not resume. Pull 6' Decan drill rods. Offset and repeat hole - LIF-11A.
1005 Offset, begin pushing CPT/LIF at [LIF-11A]
1011 CPT TD: 23.66 ft bgs refusal
LIF TD: 21.15 ft bgs
LIF signature at 15.8'-21.15' BGS
Pull 6' Decan drill rods
LIF-11A: N 37.428532° W 95.692439°
Bentonic LIF-11 & LIF-11A holes
1035 Mobilize & setup at LIF-12

1050 Begin pushing CPT/LIF at [LIF-12].
1104 CPT TD: 25.46 ft bgs - no refusal
LIF TD: 22.89 ft bgs
No LIF signatures detected
Pull a Decan drill rods
LIF-12: N 37.429386° W 95.692680°
1115 Call Kenneth Simmons (Sutterman, Inc.) of our plan to begin CPT/LIF boring along Grantly St tomorrow morning, he will meet us on-site around 0730.
1119 Mobilize & setup at LIF-13, Bentonic LIF-12 hole
1140 Begin pushing CPT/LIF at [LIF-13].
CPT TD: 26.51 ft bgs refusal
LIF TD: 24.03 ft bgs
LIF signature at 13.4'-24.03' bgs
Pull 6' Decan drill rods
LIF-13: N 37.429768° W 95.691269°
1210 Off-site lunch
1300 Arrive on-site, Matrix & GeoTechnology on-site
1306 Mobilize a setup at [LIF-14]
1318 Begin pushing CPT/LIF at [LIF-14]
1327 CPT TD: 23.58 ft bgs refusal
LIF TD: 21.07 ft bgs
LIF signature at 7.1'-18.8' (low signal)
18.8'-21.07' (good signal).
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<thead>
<tr>
<th>Time</th>
<th>Activity Description</th>
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<tbody>
<tr>
<td>1324</td>
<td>Pull &amp; Decap Drill Rods</td>
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<tr>
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<td>LIF-14: N37.42979&quot; E-95.690346°</td>
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<td>Bentonite in LIF-14 hole</td>
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<td>1346</td>
<td>Mobilize &amp; Setup at LIF-15</td>
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<td>1410</td>
<td>Begin Pushing CPT/LIF at [LIF-15]</td>
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<td>1418</td>
<td>CPT TD: 20.99 ft BGS - Refusal</td>
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<td>LIF TD: 18.44 ft BGS</td>
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<td>LIF Signatures at 16.74 ft - 18.44 ft BGS</td>
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<td>LIF-15: N37.430225° W-95.686490°</td>
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<td>Bentonite in LIF-15 hole</td>
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<td>1433</td>
<td>Mobilize &amp; Setup at LIF-16</td>
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<td>1455</td>
<td>Begin Pushing CPT/LIF at [LIF-16]</td>
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<td>1503</td>
<td>CPT TD: 22.80 ft BGS - Refusal</td>
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<td>LIF-16: N37.430572° W-95.6868812°</td>
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<td>Bentonite in LIF-16 hole</td>
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<td>1550</td>
<td>Mobilize &amp; Setup at LIF-17</td>
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<td>1550</td>
<td>Begin Pushing CPT/LIF at [LIF-17]</td>
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<td>1600</td>
<td>CPT TD: 23.97 ft BGS - Refusal</td>
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<td>LIF TD: 21.61 ft BGS</td>
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<td>LIF Signatures at 19.8&quot; - 21.61&quot; BGS</td>
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<td></td>
<td>Pull &amp; Decap Drill Rods</td>
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LIF-17: N37.430920° W-95.688362°
Bentonite in LIF-17 hole
1621 Mobilize & Setup at LIF-18
1633 Clean-up & Pack-up for the day
1705 Matrix & Bentonite off-site
1815 Off-site
Thursday, September 25, 2014

Weather: Partly cloudy - clear sunny, 60s-80s.

Personnel: Chris Hogland

Tasks: Complete LIF-18, 19, 20, 21, 22, 23, 24, 25.

0706 Arrive on-site, make a great technology.
0723 Calibrate Dwyer Test Multi-RAF plus 5-gas:
   PID: 102/100 ppm Ethylene
   CO: 50/50 ppm, H2S: 24/25 ppm, O2: 21.9/21.4%
   LEL: 50/50%.

0730 Safety tailgate meeting (PTA), Kenneth Simmons (Southern Star) on-site.
0750 Begin Pushing CPT/LIF at LIF-18.
0806 CPT TD: 26.87 ft lbs, refusal.
   LIF TD: 24.30 ft lbs.
   No LIF signatures.
   Pull a drill, drill rods, bentonite hole.
0828 Mobilize & setup at LIF-19.
0846 Go with Kenneth Simmons to look at 12th St.
   LIF location planned. He said we are clear
   schedule, next Tuesday 7:30 AM to advance these
   drillings. He'll be on-site. Kenneth off-site.
0850 Begin pushing CPT/LIF at LIF-19.
0853 CPT TD: 28.79 ft lbs, refusal.
   LIF TD: 26.26 ft lbs.
0910 Mobilize setup at LIF-20.

[LATE ENTRY] LIF-18: N37.431934° W95.68851°
LIF-19: N37.43192° W95.68964°
LIF-20: N37.431934° W95.691238°

0924 Begin pushing CPT/LIF at LIF-20.
0944 CPT TD: 33.13 ft lbs - refusal.
   LIF TD: 29.46 ft lbs.
   LIF signatures at 24.0'-27.2' bgs (65% RE)
   RE = reference emitter.
   Pull a drill, drill rods, bentonite hole.
0946 Received call from Kenneth Simmons (Southern Star).
   He said talking with his manager TJ that
   he is not needed for oversight on the 12th St.
   LIF locations as they are planned now in the
   street. Any deviations of locations will contact
   them.
0958 City Nordica Public Works - security steps by
   will boost residents again for LIF a call
   me to look at any cars that need to be
   moved.
1000 Mobilize to LIF-21 for setup.

CH
Begin pushing CPT/LIF at [LIF-22]

CPT TD = 22.30 ft bgs - refusal
LIF TD = 19.75 ft bgs
No LIF signature
Pull & Decom drill rods, bentonite hole
LIF-22: N37.43190' W95.69260'

Mobilize & setup at LIF-22

Begin pushing CPT/LIF at [LIF-22]

CPT TD = 30.70 ft bgs - refusal
LIF TD = 28.25 ft bgs
No LIF signal
Pull & decom drill rods, bentonite hole
LIF-22: N37.43079' W95.67261'

Mobilize & setup at LIF-23

Begin pushing CPT/LIF at [LIF-23]

CPT TD = 31.44 ft bgs - refusal
LIF TD = 28.96 ft bgs
No LIF signal
Pull & decom drill rods
LIF-23: N37.435118' W95.69321'

Mobilize & setup at LIF-24

Off-site lunch

Mobilize & setup at LIF-24

Start industrial area LIF locations

C14
9/25/14  80435  C. Haslund

1628 Begin pushing CPT/LIF at [LIF-27].
1629 CPT TD = 10.62 ft, refusal
LIF TD = 7.99 ft
LIF signal at 3.0'-2.94' bgs
Pull a decen drill rods, bentonite hole
LIF-27: N37.427076° W-95.693893°
1656 Mobilize to LIF-26; clean & pack-up
1705 Dan (Matrix) off-site
1718 Geotechnology (Ken & Joe) off-site
1723 Off-site.

9/26/14  80436  C. Haslund

Friday September 26, 2014
Weather: Clear, sunny, 60's-80's
Personnel: Chris Haslund
Task: Complete CPT/LIF at LIF-28, 29, 30, 31, 32 &
    Stake potential offset locations
0700 Arrive on-site, Matrix (Dan) & Geotechnology
    (Ken & Joe) on-site
0705 In-site safety meeting
    Pump test MultiRAE Plus: PID = 102/100ppm
    0713 Ethylene, CO = 49/50 ppm, H2S = 24/25 ppm,
        O2 = 20.9/20.5% LEL = 99/80%.
0749 Begin pushing pushing CPT & LIF at [LIF-28].
0757 CPT TD = 17.91 ft bgs - refusal
LIF TD = 15.31 ft
LIF signal at -12.8'-13.4' bgs
Pull a decen drill rods, bentonite hole
LIF-28: N37.426254° W-95.693573°
0846 Mobilize & setup at LIF-29.
0813 Begin pushing CPT/LIF at [LIF-29].
0840 CPT TD = 17.35 ft bgs - refusal
LIF TD = 14.77 ft
LIF signals at 4.1'-14.77' bgs
Pull a decen drill rods, bentonite hole
LIF-29: N37.425678° W-95.693062°
0840 Mobilize & setup at LIF-30.
0902 Begin pushing CPT/LIF at LIF-30
CPT TD: 24.81' bgs - refusal
LIF TD: 22.19' bgs
LIF signal at 9.5' - 20.3' bgs
Pull 4 decon drill rods, bentonite hole
LIF-30: N 37° 42' 58.12" W 95° 69' 18.52"

0945 Mobilize & setup at LIF-31
1000 Begin pushing CPT/LIF at LIF-31
CPT TD: 20.51' ft bgs - refusal
LIF TD: 17.96' ft bgs
LIF signal at 9.0' - 17.96' bgs
Pull 4 decon drill rods, bentonite hole

1018 Mobilize & setup at LIF-32
LIF-32: N 37° 42' 57.13" W 95° 69' 02.08"
1036 Begin pushing CPT/LIF at LIF-32
CPT TD: 15.18' ft bgs - refusal
LIF TD: 12.62' ft bgs
LIF signal at 9.6' - 12.62' bgs (low signal)
Pull 4 decon drill rods, bentonite hole
LIF-32: N 37° 42' 06.94" W 95° 68' 91.56"
1120 Geotechnical sample CPT rig SW of LIF-32 &
getting trial to take off-site, IDW drill with
decon liquid in 1/3 full.
1139 Geotechnical off-site
1200 Matrix off-site

1327 Complete drive by of remaining CPT/LIF at
MN in residential area for utility locate. Take
photos, off-site
1350 Lunch in Independence, KS
1430 Get wood stakes & asphalt patch
1500 Arrive on-site - stake potential off-set locations
west of LIF-27 & NEW Beginnings on open
field (City Property).
1630 Stake 6 potential off-sites
1640 off-site
Monday September 29, 2014
Weather: Clear-Hazy Sunny, 60's
Personnel: Chris Hoglund
Task: Complete LIF-33 & 34.

1000 Arrive on-site, contact Jeremy (City) for location of LIF locations. They cleaned and added a white dot for better location. City utility location further from City utilities. Cleared 11th St LIF locations.

1100 Take Jeremy (City) to potential LIF location to west of city. This field is clear of City utilities. Hike water line south of Trail right of road.

1130 Look at city mound locations on Iowa St.

1155 Check in at AECOM remediation bid at 11th St. LIF-1, 2, 3 locations.

12:30 Lunch.

1305 Arrive on-site - Remediation bid, meeting with Matt & Geotechnology.

1350 Matt on-site.

1430 Geotechnology on-site - filling water tank.

1445 Tent crew meeting.

1500 Meet with USIC (AT&T located) in slow-potential off-site area - open clear. But is north of Trail and along disassembly lane to New Beginnings.

1525 Call from Trevor G. (Baker) to confirm us of utility locate in field south of Trail & 15th St. Said we will not proceed until Wed morning per the utility locate ticket. #161-3.0)

1535 Setup a mobile site at LIF-33.

1545 Ice (Geotechnology) not feeling 100%, a little sick.

1546 Begin pushing CPT/LIF at LIF-33.


Dichlor, CO: 49/50 ppm, C: 20.9/20.9%, H2S: 26/25 ppm, LEL: 50/50%, AT 130.

1551 CPT TD: 17.15' bgs - refusal.

LIF TD 14.59' bgs.

LIF signal at 4.3' bgs - 14.57' bgs.

Pull a decom drill rods, bentonite flare.

LIF-33: N 37.426743° W -95.689430°

1558 Ice (Geotechnology) off-site.

1605 Trimming out of LIF-33 hole CPT lost calibration

of depth (out of CPT), Ken working on calibration.

1610 Ice on-site.

1620 Mobile site setup at LIF-34.

CH
9/29/14  80435  C. Haglund

1657  Begin Pushing CPT/LIF at 4.94
1706  CPT TD 22.06 ft bgs - refusal
      LIF TD 19.48 ft bgs
      LIF signature at 8.4 ft - 19.48 ft bgs
      LIF-34: W37.42b285° W-95.690785°
      Pull & Decr drill rods, bentonite hole
1734  Matrix off-site
1745  Geotechnical off-site - contaminate decr
      water in 55 gallon drum.
1750  off-site

9/30/14  80435  C. Haglund

Tuesday September 30, 2014

Weather: Clear, Sunny, 60's-80's

Personnel: Chris Haglund

Task: Complete LIF-35, 39, 37, 36, 34, 44, 42, & 43.

strike city unmarked gas line at LIF-40 - City repaired

0705  Arrive on-site, Geotechnical (Ken & Joe) on-site.

Matrix (Dea) on-site.

0720  Tailgate safety meeting.

0730  Bump Test Mill: RAE Plus: PID: 110/100ppm
      Isobutylene, CO: 47/50ppm, C2: 20.7/30.9%
      N2: 5% C1: 5% LEL: 51/50%

0735  Mobilize & Setup at LIF-35

0741  Begin Pushing CPT/LIF at 4.94

0748  CPT TD 22.59 ft bgs - refusal
      LIF TD 20.02 ft bgs
      LIF signature at 8.0 ft - 20.02 ft bgs
      Pull & Decr drill rods, bentonite hole
      LIF-36: W37.42b298° W-95.69175°

0805  Mobilize & Setup at LIF-36

0814  Begin Pushing CPT/LIF at 4.94

0826  CPT TD 19.52 ft bgs - refusal
      LIF TD 16.91 ft bgs
      LIF signature at 8.5 ft - 16.91 ft bgs
      Pull & Decr drill rods, bentonite hole
      LIF-36: W37.42b750° W-95.69265°
0850 Mobilize rig to semi-truck to load a move over railroad tracks to start CPT/LIF in residential area.
0906 Loading CPT rig onto semi-trailer
0920 Mobilizing semi-truck/trailer with rig to 11th Street
0922 Unloading rig on 11th Street north of tank
0928 Rig unloaded, loading trailer to semi truck
0933 Trailer attached to semi truck - take truck & trailer back to remediation digs field north of tank & west of 12th St.
0943 Mobilize a setup at LIF-37 on 11th Street north of tank
0956 Put out men at work signage & traffic cones around rig.
1003 Pushing dummy cone through asphalt road
1008 Begin pushing CPT/LIF at LIF-37
1017 CPT TD: 23.73 ft bgs - refusal
LIF TD: 21.61 ft bgs
LIF signals at 8.8' - 13.6' (low 42%); 16.0' - 21.13'
Pull & decon drill rods, bentonite hole & asphalt patch
LIF-37: N37.428944° W-086.687909°
1030 Mobilize & setup at LIF-38.
1035 Passed dummy cone through asphalt
1050 Begin pushing CPT/LIF at LIF-38
1059 CPT TD: 24.22 ft bgs - refusal

LIF TD: 21.61 ft bgs
LIF signals at 9.8' - 11.4' (low 6% RE); 17.1' - 21.61 ft bgs
Pull & decon drill rods, bentonite & asphalt patch hole
1112 Mobilize a setup at LIF-39
1117 Push dummy cone through asphalt
[Late Entry] LIF-39: N37.428944° W-095.687927°
1130 Begin pushing CPT/LIF at LIF-39
1139 CPT TD: 22.71 ft bgs - refusal
LIF TD: 20.14 ft bgs
LIF signals at: 3.8' - 9.7' bgs (low 6% RE); 18.9' - 20.14 bgs
Pull & decon drill rods, bentonite & asphalt patch hole
LIF-39: N37.429298° W-095.687935°
1153 Dispose of 20W decon water in Sidney drum at remediation digs.
1200 Mobilize & setup at LIF-40
1216 Lunch break - off-site
1250 On-site
1302 Push dummy cone through asphalt
1308 Begin pushing CPT/LIF at LIF-40
1316 Hit refusal at 3.0' bgs and stopped - hit something hard. Will off-set off road
Smelled gas - shutdown rig & call Jeremy (SIT).
He is on his way.
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<th>Time</th>
<th>Action</th>
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<tr>
<td>1835</td>
<td>Jeremy on-site, leave message to PM.</td>
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<td>1830</td>
<td>Verify that city gas line - City wants to move rig off hole to repair,</td>
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<td>Ken calling PN about moving rig off hole, City calling fire department</td>
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<td>for standby. Jeremy (City) said &quot;that was their bad.&quot;</td>
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<td>1850</td>
<td>Ken said that PM was to make bentonite slurry to seal around hole before moving rig off hole.</td>
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<td>1857</td>
<td>Fire Dept. on-site, notify PM after he calls back.</td>
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<td>1900</td>
<td>Manually pull rods out of hole &amp; put bentonite plug/seal over hole, City responding Ken putting plug over hole.</td>
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<td>1910</td>
<td>Scally moves rig off &amp; setup over LIF-41 south of Elm &amp; Seward St intersection.</td>
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<tr>
<td>1915</td>
<td>Geotechnology moving traffic signs from 11th St to Seward &amp; Elm.</td>
</tr>
<tr>
<td>1937</td>
<td>Go with Jeremy (City) to verify clearance of utilities of removing LIF boring in area. Jeremy will verify other LIF locations by this evening or tomorrow. Cleared on Seward, Walnut &amp; 9th, an alley between Walnut &amp; Elm from Jeremy.</td>
</tr>
<tr>
<td>1945</td>
<td>Push Dummy cone through asphalt.</td>
</tr>
<tr>
<td>1947</td>
<td>Begin pushing CPT/LIF at LIF-41.</td>
</tr>
<tr>
<td>1850</td>
<td>City digging up &amp; locating gas line to repair.</td>
</tr>
</tbody>
</table>

**9/30/14**

<table>
<thead>
<tr>
<th>Time</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LIF TD: 26.03 ft bgs</td>
</tr>
<tr>
<td></td>
<td>LIF signal at 22.11' - 26.03 ft bgs</td>
</tr>
<tr>
<td></td>
<td>Pull a dozen drill rods, bentonite &amp; asphalt patch hole.</td>
</tr>
<tr>
<td></td>
<td>LIF-41: U37.430016° W-95.686722°</td>
</tr>
<tr>
<td>1515</td>
<td>Mobilize setup at LIF-42.</td>
</tr>
<tr>
<td>1550</td>
<td>Push Dummy cone through asphalt, push CPT/LIF at LIF-42.</td>
</tr>
<tr>
<td>1546</td>
<td>CPT TD: 26.05 ft bgs - refused.</td>
</tr>
<tr>
<td></td>
<td>LIF TD: 23.49 ft bgs</td>
</tr>
<tr>
<td></td>
<td>LIF signals: 3.5' - 7.3' (low 65% RE)</td>
</tr>
<tr>
<td></td>
<td>14.8' - 23.49' bgs</td>
</tr>
<tr>
<td></td>
<td>Pull &amp; Decan drill rods, bentonite &amp; asphalt patch hole.</td>
</tr>
<tr>
<td></td>
<td>LIF-42: U37.429443° W-95.686745°</td>
</tr>
<tr>
<td>1605</td>
<td>Mobilize a setup at LIF-43.</td>
</tr>
<tr>
<td>1622</td>
<td>Check-in with City fixing gas line, cast iron 6&quot; diameter line, will cut a core replace section.</td>
</tr>
<tr>
<td>1624</td>
<td>Push Dummy cone through asphalt.</td>
</tr>
<tr>
<td>1625</td>
<td>Begin pushing CPT/LIF at LIF-43.</td>
</tr>
<tr>
<td>1633</td>
<td>CPT TD: 24.81' bgs - refused.</td>
</tr>
<tr>
<td></td>
<td>LIF TD: 22.25' bgs</td>
</tr>
<tr>
<td></td>
<td>LIF signal at: 18.0' - 22.25' bgs</td>
</tr>
<tr>
<td></td>
<td>Pull a dozen drill rods, bentonite &amp; asphalt patch hole.</td>
</tr>
</tbody>
</table>
1644 Park SW of LIF-43 south of alley on west side of Seward. Received paperwork from property owner to the SW of LIF-43 to park in grass off of alley. Owner: Dennis/Dawn. Hand off NW corner of Tank & Seward.
LIF-43: N32.452896° W 95.288691°
1658 Dispose of debris 190 in 55 gal drum at Remediation Bldgs.
1700 Clean-up & parking area, get signs off road
1715 Off-site

Wednesday September 10, 2014
Weather: Gusts/storm - Partly cloudy, 60’s-80’s
Personnel: Chris Hoglund
Task: Complete LIF-44,45,40A, 46, 47, 48, 49, 50, 51
0645 Arise at 5am to print witness statements for Ken (Casteel) & Dan (Marley) to sign.
0700 Casteel & Marley meet at Bldgs & sign statements. Conduct target safety meeting.
0710 E-mail PDA & statements to PM
0725 Mobilize & setup at LIF-44 at 9th & Walnut
0730 light rain
0740 Call Jeremy (City Public Works) to provide location for one of the LIF being at LIF-44. They will provide suitable location for the city utilities.
0750 Ramb Test MTIIRAE Plus: PID: 110/100 ppm
Isobutylene: 0 ppm 20.9/20.7%, H2S: 25/25 ppm,
LEL: 50/50 ppm, CO: 47/40 ppm.
0751 Park Dummy Core trailer asphalt
0753 Begin pushing CPT/LIF at LIF-44
0808 CPT TD: 28.15 ft bgs - refusal
LIF TD: 25.53 ft bgs
LIF signals at 22.2'/29.6' bgs
Pull a dozen drill rods, bentonite & asphalt plug hole
0820 Met with Jeremy (City of Public Works) to determine LIF-40 offset, mark with white dot
City cleared utility.

0848 Mobile equipment at LIF-45.

0848 Begin pushing CPT/LIF at [LIF-45].

0848 Call from PM (J. Gustafson) that AEcon will
at least 1 or 2 offset CPT/LIF borehole bss
work of LIF-27 in field owned by City.

0858 CPT TD: 25.67 ft bs - refusal
LIF TD: 23.10 ft bs
LIF signals at 22.9 ft
Pull 4 Deco drill rods, bentonite a hole
LIF-453 N37.428925° W-95.685902°

0910 Mobilize a setup at LIF-40 offset location
LIF-40A.

0924 Push dummy cone through asphalt at LIF-40A.

0926 Begin pushing CPT/LIF at [LIF-40A].

0926 CPT TD: 22.93 ft bs - refusal
LIF TD: 20.30 ft bs
LIF signal - no signal
Pull 4 deco drill rods, bentonite a asphalt patch hole
LIF-40A: N37.430214° W-95.687767°
Ly = 13 ft NE of LIF-40 (straight 90 line)
on north side of Elm St.

0930 Recon next LIF borehole with Geotechnology on
11th & Caroline St.

1015 Call Jeremy (City) to notify we are going to
Caroline St to begin CPT/LIF location - we'll
come by and verify City utility clearances.

1028 Mobile equipment at LIF-46, on Caroline St, west
of 11th St.

1037 Met with Jeremy (City), LIF-46 cleared. They
will verify clearance down Caroline St & Grant St.

1039 Mobilize pulling traffic lanes on Caroline, work
ahead.

1037 Push dummy cone through asphalt, Push CPT/LIF
1102 CPT TD: 25.60 ft bs - refusal at [LIF-46].
LIF TD: 23.93 ft bs
LIF signal at 162°, 21.00 ft bs
Pull drill rods a deco, bentonite a asphalt patch hole
LIF-46: N37.425682° W-95.686766

1120 Mobilize a setup at LIF-47.

1131 Push dummy cone through asphalt a brick

1134 Begin pushing CPT/LIF at [LIF-47].

1144 CPT TD: 28.07 ft bs - refusal
LIF TD: 25.44 ft bs
LIF signal at 13.4°, 25.47 ft bs
Pull a deco drill rods, bentonite a asphalt patch hole
LIF-47: N37.425690° W-95.685982
1200 Mobilize a setup at LIF-48
1211 Lunch Break
1307 On Site
1311 Push dummy cone through asphalt & brick at LIF-48
1317 Begin pushing CPT/LIF at [LIF-48]
1320 CPT TD = 28.85' bgs - refusal
LIF TD = 24.17' bgs
LIF signal at 5.9' - 10.6' bgs (low < 5% RE)
16:11 - 24:17' bgs
Pull dead drill rods, bentonite & asphalt patch hole
LIF-48: N 37° 42' 58" E W95° 58' 77"
1335 Call Tyler (AECOM) to verify clearance of corroded
lines at Carolina & 8th St to LIF-49 on north
side of Carolina St (in street). He said we are
clear - their line is in the grass next to
Carolina St.
1349 Mobilize a setup at LIF-49
1359 Pushed dummy cone through asphalt & brick
1401 Begin pushing CPT/LIF at [LIF-49]
1411 CPT TD = 19.72' bgs - refusal
LIF TD = 17.13' bgs
LIF signal at 12.9' - 15.1' bgs
Pull dead drill rods, bentonite & asphalt patch hole
LIF-491 N 37° 42' 57" E W 95° 58' 23"
1428 Mobilize a setup at LIF-50
1430 Storm coming into town, thunder & lightening
temporarily stop job to let pass
1435 Blowing a roaring
1532 Push dummy cone through asphalt & brick at LIF-50
stopped raining, mostly sunny
1539 Begin pushing CPT/LIF at [LIF-50]
1548 CPT TD = 27.53' bgs - refusal
LIF TD = 24.96' bgs
LIF signal at 17.9' - 23.0' bgs
Pull dead drill rods, bentonite & asphalt patch hole
LIF-50: N 37° 42' 47" E W 95° 58' 00"
1602 Mobilize a setup at LIF-51 at 9th & Grant St.
1608 Push dummy cone through asphalt & brick
1618 Begin pushing CPT/LIF at [LIF-51]
1629 CPT TD = 29.19' bgs - refusal
LIF TD = 26.64' bgs
LIF signal at 19.4' - 26.64' bgs
Pull dead drill rods, bentonite & asphalt patch hole
LIF-51: N 37° 42' 47" E W 95° 58' 53"
1650 Clean-up & pack up
1700 Geotechnical disposing of decem water in soil drum
at Remediation Blg.
1715 Stage CPT 1.5 yard of N 9th St on City
right of way between sidewalk & road, grassy
area, graded, matrix, geotech; off site
Lake Entry notified City Public Works while verifying City utility clearance on Grant St but while advancing CPT/LIF at LIF-40A offset, smelled gas in area still. City is aware & said it is likely off gas from soil from struck gas line that was repaired by City.

Thursday October 2, 2014
Weather: Current/T-storms, 60's-70's,
Personnel: Chris Heyland
Task: Complete LIF-52, 53, 54, 55, 56, 57, 58, 59, 60
Project Completed

0704 Arrive on-site - Mattrix (Dan) x Geotechnique
(Ken 0:50) on-site - new q/a Grant.
Safety Meeting

0710 Bump Test Multiman Plus! PID 112/100ppm
Isobutane CG 48/50 q/a H2 S 24/26 ppm
6% 20.7/20.9%, LEL 48/50%.

0715 Mobilize & setup at LIF-52.

0725 Light rain - storm w/ lightning coming - temp. Stop work until storm passes.

0755 Push dummy core through asphalt x 6" x 6"

0759 Push CPT/LIF at [LIF-52]

0804 Call Jeremy (City) notify him we are at Grant & 6th - have him verify final 3 LIF locations on Lincoln & Church for City utility clearance.

0810 CPT TD - 24.13', bgs - refusal
LIF TD: 21.56', bgs
LIF Signal at 16.2', 21.56', bgs

Pull & clean drill rods, bentonite & asphalt patch hole LIF-52: N37°12'46.11" W95°58'39.15"

0828 Mobilize & setup at LIF-53
LIF-52: Left 2.5’ x 2.5’ square of asphalt broken off.

0843 Push dummy cone through asphalt & brick at LIF-53.

0849 Begin pushing CPT/LIF at LIF-53.

0900 CPT TD: 29.6 ft bgs - refusal.
LIF TD: 27.06 ft bgs.
LIF signal at 18.5’ - 25.7’ bgs.
Pull & decon drill rods, bent-vice & asphalt patch hole.
LIF-53: N 37.42363° W 95.684235°

0915 Mobilize & setup at LIF-54 (Lincoln).

0920 Push dummy cone through asphalt & brick.

1020 Test coring, head therapy. Temporarily stop work.

1028 Head ream, lightening a thunder.

1037 Begin pushing CPT/LIF at LIF-54 (storm passed).
CPT TD: 26.48 ft bgs - refusal.
LIF TD: 23.88 ft bgs.
LIF signal at 16.3’ - 25.8’ bgs.
Pull & decon drill rods, bent-vice & asphalt patch hole.
LIF-54: N 37.423756° W 95.683807°

1120 Mobilize & setup at LIF-55 (E of 6th Church).

1240 Push dummy cone through asphalt & brick.

1052 Begin pushing CPT/LIF at LIF-55.

1109 CPT TD: 28.65 ft bgs - refusal.
LIF TD: 26.11 ft bgs.
LIF signal at 21.5’ - 26.11’ bgs (low < 2.5% RE).
Pull & decon drill rods, bent-vice & asphalt patch hole.
LIF-55: N 37.423126° W 95.693126°

1113 Geotechnical off-site to get truck & trailer to land CPT rig.

1149 Mobilize CPT rig to church (west of 6th St.), load onto trailer.

1158 Land CPT rig, mobilize to LIF-27 area to advance off-site.

1159 Dismantle CPT at Benson & harbor near LIF-36.

1220 Lunch - Geotechnical will start rig to off-site locations.

1300 Arrive on-site - CPT is setup over LIF-56.

1310 NE corner of open field west of New Benefic & south of Park & 15th St.

1318 Begin pushing LIF-56 CPT + LIF.

1320 CPT TD: 17.96 ft bgs - refusal.
LIF TD: 15.36 ft bgs.
No LIF signal/signatures detected.
Pull & decon drill rods, bent-vice & asphalt patch hole.
LIF-56: N 37.422192° W 95.684345°

1320 Mobilize & setup at LIF-57.
1345  Begin pushing LIF-57  CPT/LIF
1351  CPT TD: 12.98' bgs
      LIF TD: 10.33' bgs
      No LIF signature detected
      Pull decom drill rods, bentonite hole
1400  Mobilize & setup at LIF-58
1413  Begin pushing CPT/LIF at LIF-58
1417  CPT TD: 10.73' bgs
      LIF TD: 8.08' bgs
      LIF signal at 7.9' - 8.08' bgs
      Pull decom drill rods, bentonite hole
1427  Mobilize & setup at LIF-59
1443  Begin pushing CPT/LIF at LIF-59
1457  CPT TD: 14.62 ft bgs
      LIF TD: 11.98 ft bgs
      No LIF signature detected
      Pull decom drill rods, bentonite hole
1507  Mobilize & setup at LIF-60
1513  Begin pushing CPT/LIF at LIF-60
1515  CPT TD: 13.84' bgs
      LIF TD: 11.21' bgs
      LIF signal at 8.2' - 11.21' bgs (low < 4% RE)
1520  Notify PM of project completion
1525  PM calls to confirm from KONE that we are done.
1540  Geotechnology & matrix breaking down equipment
1550  Matrix offsite
1600  Black offsite, Geotechnology has rig loaded on trailer it will leave in Newkirk, OK on
      city property (field west of remediation oldy)
      it will pick up to mobilize back to St. Louis tomorrow morning.
1715  Total of 3 720 W drums staged site
      AECOM/BP remediation Oldy, Drum: 55 gallon.
1) Full with Non-Classified Waste Material only
   Material: Decontamination Liquid (H2O)
   Site Address: 1100 North 12th St, Newkirk, KS 66752
   Accumulation Date: 9/22/2014
   Generator: BP Contact: Lang Dean (AECOM)
      620-330-2797
2) Half Full w/ Non-Classified Waste Material Only
   Same info as above but 9/20/14 accumulation date.
3) Empty Drum - sensor on-site
   Per AECOM - drums staged at SW corner of
   remediation Oldy, outside of fence, on gravel drive
10/2/14
All bolts & drum rings are on, secure & tight
1728 Gerberoy's off-site, decided to take truck with rig on trailer to Independence, KS.
1730 BNSF off-site
1739 City asphalt patch, 11F-52, ~2.5' x 2.5' square

10/3/14

Friday October 3, 2014
Weather: Mostly cloudy, overcast, 50's-60's, N 0-25 mph
Personnel: Chris Hoyland
Task: Verify MW locations marked

0845 Arrive on-site - drive by to verify monitoring well locations are marked.
1021 Check-in with AECOM (Lane Dem) - notify off-site. Will be back in 2 weeks for monitoring well installations.
1275 Off-site
1300 Drive off MultIRAE 5 gas meter at Field Environmental Okla., KS.
1310 Lunch
1930 Arrive at BNSF ICC, MC (9400), unload & return truck.
1500 Off-site - Depart, BNSF
Monday October 13, 2014
Weather: Overcast, 40's-50's, Raining/showers
Personnel: Chris Heyland
Task: Complete drill logs at LIF-54, 47, e 44 for confirmatory logs of CPT/LIF.
0700 Arrive at Band (1400) load truck
0745 Depart Band
1035 Arrive on-site at AECOM remediation site
RAZER on-site
1120 RAZER unload forklift & drums
1130 Mobilize & Setup at LIF-SY (8th & Lincoln)
Run Test 5-gal Multratex Phs:
   CO: 48/50 ppm  C2: 20.9/10.9% H2S: 24/25 ppm
   LEV: 48/50%
1145 Begin advancing direct-push at [LIF-SY]
1240 Refusal at 290' BOS at LIF-SY.
   Bentonite & asphalt patch hole
1300 Mobilize & setup at LIF-47
1330 Issue of 5-gal meter - VOC/PID sampling at
   25-30 ppm - Attempt recollection a fresh air calibrator
   did not fix. Call PM to send POGO 5-gal meter.
1340 Start advancing direct-push at [LIF-47]
1345 Jeremy (city) stepped by - said all NW located
   are cleared of city utility as marked
Tuesday October 14, 2014

Weather: Clear, Sunny, 40's - 60's, Windy 10-30 from N

Personal: Chris Hoyland

Task: Complete LIF confirmation boring: LIF-30, 56, 11A
3:19 - Inst LIF MW-168
0730 Arrive on-site, RABEK on-site (Tonya Paul)

0730 Safety Meeting (PTA)

- Bump test MultiRAE Plus: CO 45/50 ppm,
- O2 20.7/20.9 %, H2S 24/25 ppm, LEL 44/50 %
- Voc - not reading, calibrate error. Getting new
- air monitoring equipment today. Calibrate PID; good

0805 Mobilize a setup at LIF-39. 77/100 ppm

0818 Begin Advancing direct-push at [LIF-30]
0925 Hit refusal at 25.0' BGS at LIF-30
- Borehole hole 1

0940 Mobilize a setup at LIF-56

1000 Tyler (NECO) called Fed Ex delivery here

with new PID/CEL - go get.

1012 Begin advancing direct-push at [LIF-56]
1050 Hit refusal at 18.0' BGS LIF-56
- Borehole hole

1050 Hit refusal at 18.0' BGS

1110 Mobilize to LIF-11A

1124 Begin advancing direct-push at [LIF-11A]

1126 Bury test PID MultiRAE 2000, 95/100 ppm Ironsky

1135 Meet T. (KDBEH) on-site

1130 Hit refusal at 24.6' BGS LIF-11A
- Borehole hole

1138 Mobilize a setup at LIF-3

1247 Begin advancing direct-push at [LIF-3]
1310 Hit refusal at 21.0' BGS
- Borehole hole

1335 Mobilize to LIF-19

1344 Start advancing direct-push at [LIF-19]
1435 Hit refusal at 28.5' BGS LIF-19
- Borehole hole

- Complete LIF confirmation boring - begin MWs

1512 Mobilize a setup at MW-172 - rig seats in MW

- Begin Advancing direct-push at [MW-172]

1606 City get RABEK rig unstick with backhoe 
- chain.

1608 Mobilize a setup at MW-168

1618 Begin advancing direct-push at [MW-168]
1631 Hit refusal at 17.0' BGS

- Install 2' 5/4 PVC well MW-168

- End cap: 0.46' x 10' screen (top 0.12' not slotted)

- 10' riser: 20.45' total

- Cut 1.37' riser off

- Top 1/2 sand to 5.0' BGS - 60 50% 6"er
2. Bentonite Chip (2/3") 50# bags to 2.0' bags
1720 Dig pad and place form -2' x 2' + 3" deep
Bentonite = PBS Bentonite Plus 50# bag
PBS 105 West Sharp St, El Dorado, Arkansas 71730
1-800-243-7435
Sand = Filter Sil 8203 Sandy & gravel
Industrial grade, 50# bag
Well screen = Environmental Manufacturing
2" x 10' schedule 40 PVC, 0.02" screen
Lot: No 15 4673, 8887 Green Valley Drive
Manhattan, KS 66502
1724 Cut additional 2.00' off riser to complete as
final mount.
Lab: one 55 gal Drum w/ soil cuttings from
MW-168a Non-sodium White Material.
Laboratory Analysis in progress.
1729 MW-168 Pid: 65 GPM - well head space
WL: 4.0' Toc TD: 16.10' Toc Soft bottom
Toc = 0.2' Bgs (final mount)
1800 RAZEK off-site
1855 Bmode off-site

Wednesday October 15, 2014
Weather: Clear, sunny, 50's - 70's,
Personnel: Chris Hagedorn
Task: MW-160, 161, 165, 164
0730 Arrive on-site, RAZEK on-site cleaning
HSA at remediation Bgs in tub.
0806 Get new RABECK Plugs in shipping box to
AECOM to FedEx (pick-up)
0810 Mobilize to MW-160
0825 Meet with Frank Rehling (Quality Control)
to notify of well install a piece of
RAZEK truck
0845 Begin advancing direct push at MW-160
0910 Hit refusal at 21.0' Bgs
Install 2" Sch. 40 PVC Well [MW-160]
End cap = 0.15' screen = 4.66' (0.02 she) Toc
10' riser 2
Top 10/20 sand = 4.0' Bgs - 9 Bgs
Top 3/8" bentonite cups = 1.5' Bgs - 2 Bgs
Dig pad for stick-up
Cut 0.5" 1.65' riser, string odor 2
1030 MW-160 WL: 23' TD: 23.30' Toc
PL: 85# No Pid: 833 far
Toc - 2.6' above ground
1045 Mobile & setup at MW-161
1052 Start direct-push at MW-161
1113 Hit refusal at 20.4' BOS

HSA to refusal inshall 2" gap. 90 PUC MW-161
End cap: 0.15', screen: 14.9' (0.00' slw)
Riser: 10.6'
Cut 1.83' off riser

1234 MW-160 WL: 13.62' TOC PL: None
Sieve on probe. PID: 908 ppm

1238 Standing water at MW-173 drill holes, call PM said to wait & do later.

1239 RAEER loading used HSA

1240 MW-161 PID: 244 ppm
MW-161 Top of sand: 40', 805-8 Bags
Top of 3/8 Ben: ~15', 1 Bag

1248 Cut of another 11.6' from riser - MW-161

1250 Tony (RAEER) off-site with HSA to decant at remedial pits - using forklift.

1251 TOC: 2.75' above ground - MW-161
Digging pad at MW-161

1254 MW-161 WL: 11.42' TOC PID: 236 ppm
PL: None, then on 2 Probes, strong odor

1256 Tony on-site done decant HSA

1300 Mobile & setup at MW-164/165

1345 Start direct-push at MW-165

1410 Hit refusal at 22.0' BOS

HSA to refusal to install monitoring well MW-165
End cap: 0.15', screen: 14.9', riser: 10'
Top of sand: 8.0' BOS - 6 Bags
Top of Ben: ~2.0' BOS - 1 Bag
Cut 0.7' off riser TOC: 2.25' above ground

1521 Tyler (AECC) dropped off flyers & paper after calling him.

Digging pad for stock-up at MW-165 - Paul

1522 Mobile & setup at MW-164

1544 Hit refusal at 19.5' BOS

HSA to refusal to install monitoring well MW-164
End cap: 0.15', screen: 12.9' riser: 10'
Cut off 2.44' of riser

Top of sand: 4.0' BOS - 7 Bags
Top of 3/8 Ben: ~2.0' BOS - 1.5 Bags

1655 MW-165 PID: 241, WL: 15.3' TOC: PL: None

1708 MW-166 PID: 111, WL: 2.92' TOC: PL: None

1717 Tony off-site to decant HSAs.

There are two (2) soil cutting drums at each of the MWs installed today - Affixed non-classified waste material label on each drum.

1735 Tony off-site to Leansburg, IC - supplies
10/15/14  80435  C. Haglund

1754  MW-164  PID: 220 ppm  WC: 12.10' TEC  
PL: None  TEC: 2.35' above ground  
Dig pad for stick-up

1810  Take Paul (RAZEK) to car at Remulay Olds

1820  Off-site

10/16/14  80435  C. Haglund

Thursday, October 16, 2014

Weather: Clear, Sunny, 50's-70's
Personnel: Chris Haglund

Task: Install MW-167, 173, 145, 146

0715  Arrive on-site, at MW-168

0720  Pump Test MultiRAE 1980(PID): 27/100 ppm
Pump Test VRAE: CO: 48/50 ppm  CO2: 1200/2400 ppm
H2S: 23/28 ppm  LEL: 79/95 %

0723  MW-166  PID: 1230 ppm  LEL: 30% CO: 30 ppm
WL: 5.6' TEC  PL: None

0733  Bailed MW-166 w/ 4 gallon, WL: 8.0' TEC

Rising fluid. First bail clear H20, remaining  
turbid brown, slight sheen, strong odor.

0741  MW-166  WL: 5.53' Raising slowly

0747  Arrive at Remulay Olds - RAZEK decomin  
HSA (Tony & Paul)

0800  Dispose of Purge H20 & Decin 1920 in  
AECOM polubank

0807  MultiRAE setup at MW-167

0830  RAZEK on-site w/ Forklift & decomin HSA

0835  Start advancing direct-push at MW-167

0850  HSA to refused at 14.6' ABG

0  HSA to refused & install well MW-167

End cap: 0.15' screen: 8.4' riser: 16'
10/15/14  80435  C. Hoyland

**Cut off 2.20' of riser**
Top of sand: 4.0' BGS - 5.5 bgs
Top 24" bench = 2.0' BGS - 1 bgs

**TOC = 2.56' above ground**

**0959 MW-177 PID: 124 WL = 15.78' PL = None**
Load 2 IDW soil cutting drums (63 est).

**1004 Mobile x setup at MW-177**
Rent (city) on site, verify & cleared MW-177

**1016 Begin advancing direct-push at MW-177**

**1058 Hit refusal at 19.0' BGS**
HSA to refusal & install MW-173
End cap: 0.15' screen: 12.78' riser: 10'
Cut off 0.9' of riser.
Top of sand: 4.0' BGS - 7 bgs
Top of 3/8" bentonite = TOC

**MW-173 PID = WL = PL**
Two soil IDW drums labeled

**1204 Tony (RATEK) off-site to deem HSA**
Paw (RATEK) digs pad for shock-up.

**1219 MW-161 WL = 11.96 PID: 367**
Sheen (20-1') sounded w/ 2-probe

**1228 MW-165 PID: 129 WL = 14.94' TOC - PL = None**

**1254 MW-164 PID: 701 WL = 12.20' TOC PL = None**

**1240 MW-168 PID: 1210 WL = 8.61' TOC PL = None**

**1256 MW-160 PID: 1039 WL = 13.52' TOC PL = None**

**1306 Tony: on-site, mobilize & setup at MW-145**

**1310 Tony: off-site to set Geopak 15' - uncradled forklift**

**1345 Start advancing direct-push at MW-145**

**1423 Hit refusal at 24.5' BGS**
HSA to refusal & install MW-145
End cap: 0.15' screen = 22.96' (16' + 12.96')
Riser = 10'; cut off 2.41' of riser
Top of sand: 4.0' BGS - 12 bgs
Top of 3/8" bentonite = 7.0' BGS - 1 bgs
TOC = 2.86' above ground

**1810 MW-145 PID: 346 WL = 11.81' TOC PL = None**
Two (2) soil IDW drums labeled

**1606 Mobilize & setup at MW-146**

**1620 Start advancing [MW-146] direct-push**

**1641 Hit refusal at 24.5' BGS**
HSA to refusal & install MW-146
End cap: 0.15' screen = 18.9' (10' + 8.9')
Riser = 10'
Cut 3.09' off riser
Top of sand = 4.5' BGS - 9 bgs
Top of bentonite = 2.0' BGS - 1 bgs
TOC = 2.6' above ground
Friday October 17, 2014
Weather: Clear, sunny, 50's - 70's
Personnel: Chris Hoglund
Task: Collect soil samples for lab analysis at MW-170, 160, 152, 148, L171. Install MW-152
0730 Arrive on site, RAZERK teaming NSA
0748 Get ice for sample cooler
0800 Run pop test MWRAE 2000 97.8/166 ppm

- Esbathyline:

- Bng test MWRAE 30: 50/50 ppm R.S: 25/25
- 0S: 25.9/20.9%, CEC: 50%/50%
0816 Safe meeting
0815 Mobilize to MW-170
0830 Check-in & brigade at (WATCO) 08W
Kitter ascent to MW-170
0849 Start
0855 Collect [MW-170 S51] soil 5'-6.5' B65
0925 Collect [MW-170 S52] soil 12'-14' B65
Hit refusal at 14.5' B65
0940 Mobilize & setup at MW-166
1030 Start drilling at MW-166
1040 Collect [MW-166 S51] soil 6'-6.5' B65
1100 Collect [MW-166 S52] soil 12'-15' B65
1120 Hit refusal at 14.0' B65

10/14/14
80435
C. Hoglund

1840 MW-146 PID: Z 2.2, Well: 10.33 feet PL: None
1910 Backed a RAZERK off-site

10/17/14
80435
C. Hoglund

10/16/14

C. Hoglund
10/17/14 80435  C. Nagle

1135 Mobilize & Set up at MW-152

1206 Start Drilling at MW-152

1220 Collect [MW-152 SS1] 1.0'-1.5' BG5

1225 Collect [MW-152 SS2] 6.0'-10' BG5

1240 Hit Refusal at 23.0' BG5

1300 HSA to refusal & install MW-152 Tool: 43'

End Cap: 0.15' screen 12.66' riser 10'

1405 Top Sand = 6.0' BG5 - 9 bags Tool: 4.0' BG5

Top Bentonite = 2.0' BG5, Cut 0.25' off riser Elam

1425 Mobilize to MW-148

1435 Start drilling at MW-148

1440 Collect [MW-148 SS2] soil 10'-13' BG5

1455 Collect [MW-148 SS3] soil 5.0'-10' BG5

1520 Hit Refusal at 27.5' BG5

1620 Collect Rinse

1630 Mobilize & Set up at MW-171

1640 Start

1645 Collect [MW-171 SS1] soil 0'-0.5' BG5

1655 Collect [MW-171 SS2] soil 5'-16' by and

DUP-1

1730 RAEK off-site

1809 Dispose of DW Decr H2O at ABCom polytank

at Remediation Olds

Late Entry: Paul (RAEK) did surface sampling.
Monday October 20, 2014

Weather: Clear, sunny, 50's - 70's

Personnel: Chris Hoyland

Task: Install MW-169, 170, 166, 172, & 148

RABEK painted stepcups

0610 Depart IC6, MO
0840 Arrive on-site

US Safety Meeting

0855 Army Test "RAE 2000: 9.7/59" pm briefing

Army Test "RAE: 00: 49/80" pm, 01: 20.9/20.9%, h.s. 2/26 pm - LFR: 43/50%

0900 Mobilize a setup at MW-169 - check at GBW

Panel painted stepcups

0915 Start drilling [MW-169] directly east

0931 Hit refusal at 14.5' BGS

HSA to refusal - install MW-169

End cap: 0.15' screen: 9.6' riser: 10'

Cut off 3.55' of riser

Top of sand: 4.0' BGS - 3.5' BGS

Top 3/8 Bentix clips: 2.6' BGS - 1 BGS

Cut another 1.75' off riser for final mount

Lable one (1) soil cutting, 2D6 drum

1049 MW-169 PID: 1148 pm, WL: 4.05" PC: None

TOC = 0.25' BGS

1050 Mobilize to MW-170 to install well

1105 Begin HSA drilling [MW-170] - install well

MW-170 soil sampled & logged on 10/17/14

1137 Install MW-170

End Cap: 0.15', screen: 9.45', riser: 10'

Cut off 2.32' of riser - for stepcup

1155 Top of sand: 4.0' BGS - 5 BGS

Top 3/8 Bentix clips: 2.6' BGS - 1.5 BGS

TOC ~ 2.46' above ground, one (1) labeled soil 200/dm

1216 MW-170 PID: 16.09' pm, WL: 5.09' PC: New

1230 Mobilize to MW-166 to install well

1234 Check in with Airsail Team: Saylor, Regarding MW-166 & MW-159

Soil sampled and logged MW-166 on 10/17/14

1155 Begin HSA drilling at [MW-166]

1335 Install MW-166

End Cap: 0.15', screen: 13.94', riser: 10'

Cut -2.94' off riser, two (2) labeled 2D6 drums

Top of sand: 4.0' BGS - 7 BGS

Top of 3/8 Bentix clips: 2.6' BGS - 2 BGS

After cutting TOC = 0.4' below ground - finish mount, 2B6, 2 parat

1428 MW-166 PID: 80.0' pm, WL: 11.07' TOC PC: New

1431 Mobilize to MW-172

1435 Start Direct Push at [MW-172]

1513 Hit refusal at 23.0' BGS

HSA to refusal & install well
1604 Install MW-172
End cap: 0.15' screen: 10' + 7.91' = 17.91', BOS = 10'
Cut 2.18' off riser
Top of sand: 40.0' BOS - 10 Bags
Top Bentonite: 20' BOS - 1.5 Bags
Cut = 2.95' off riser
TOC = 0.24' below ground
Two landed DN soil entry
1645 Get two empty drums, mark size to MW-148
1705 Begin advancing HSA at MW-148 to install well. MW-148 soil sampled & tested on 10/17/14
1810 Task 1: MW-148
End cap: 0.15' screen: 10' + 2.41' = 22.41'
Riser = 10'
Cut = 1.81' off riser
TOC = 3.17' above ground
Top of sand: 40.0' BOS - 11 Bags
Top of Bentonite: 20.0' BOS - 1.5 Bags
1827 MW-172 PID = 257 rpm WC = 12.60' sec PC: Name
MW-166 TOC = 0.3' BOS
MW-166 WC = 10.49' sec PC: Name PID: 194 rpm
1919 MW-148 PID = 1.4 rpm WC = 8.27' TOC PC: Name
1925 RABEK & BMD off-site

Tuesday, October 21, 2014
Weather: Clear, Sunny, 40's-70's
Personnel: Chris Hesland
Task: Install MW-162, 163, 171, 147, 144
0700 Arrive on-site, RABEK on-site
0705 RABEK cleaning HSA
0710 Bump Test MinRAE 2000 (0.1%/60 ppm)
2nd day
Bump Test VRAE: CO: 49/50 ppm H2S: 24/28 ppm
O2 = 20.9-21.2%, LEL: 49/50%.
0820 Safety Meeting
0835 Mobilize to MW-162
0836 Check in at MEC, discuss w/ Kent Sheilds
0857 Start Direct-Pan drill at MW-162
0918 Hit refusal at 116' BOS
HSA to refusal & install well
Install MW-162
Bad Cap: 0.15' screen: 10' + 1.4' = 11.4' riser = 10'
cut 2.83' off riser + cut 2.94' off HSA.
Top of sand: 40.0' BOS
Top of 30' bentonite: 20.0' BOS - 1.5 B.
TOC = 0.45' BOS (next week)
Load 2 DN Drums (soil)
1020 MW-162 PID = 0.0 WC: NA Pl: NA
Also tech meeting/survey
10:25 Mobilize to MW-163
10:37 Start Direct-Dash at MW-163
10:55 Hit refusal at 16.5' B65
   HSA to refusal & install well
11:17 Install [MW-163]
   End Cap: 0.15' Screen 10.8' Riser: 10'
   Cut 1.04' off riser
   Top Sand: 4.0' B65
   Top Bend: 2.0' B65 - 1.5 B65
   Cut 3.14' off riser
   TOC: 0.2' B65 (Flush Nurse)
   Label 2 20W soil drums
12:02 MW-163 P1D: 0.39' P2L: 7.33' P3C: 7.52' L
12:15 Mobilize to MW-171, adjacent to CIF-58.
   MW-171 was soil sampled & logged on 10/19/2014
   Paw [RABEK] dechor HSA
12:35 Begin HSA at MW-171
12:55 Install [MW-171]
   End Cap: 0.15' Screen 5.41' Riser: 10.0'
   Cut 2.67' off riser
   Top Sand: 4.0' B65 - 3 B65s
   Top Bend: 2.0' B65 - 1.5 B65s
   TOC: 2.14' above ground (plunk-up)
   MW-171 P1D: 178 P2L: 5.26 P3C: None
13:20 Mobilize to remediation Hill, decom HSA
13:45 Mobilize & settle at MW-147
13:58 MW-145 P1D: 0.66' P2L: 12.89' PL: None
14:00 MW-146 P1D: 0.00' P2L: 11.44' PL: None
14:17 Start Direct-Dash at MW-147
14:54 Hit refusal: 26.5' B65
   HSA to refusal & install well
   Install [MW-147]
   Riser: 0.46' Screen 20' (10+10'), Riser: 10.0'
   Cut off 1.4' of riser
   Top of sand: 4.5' B65 - 13 B65s
   Top of Bend: 2.0' B65 - 2 B65s
   TOC: 2.08' above ground (plunk-up)
   Label 2 soil 20W Drums
15:29 MW-147 P1D: 0.00' P2L: NA PL: NA
   NA: No to muddy for probe
16:25 Mobilize to MW-149
16:45 Start Direct-Dash at MW-144
17:13 Hit refusal at 23.6' B65
   HSA to refusal & install well
18:10 Install [MW-144]
   End Cap: 0.15' Screen 17.94' (16'+1.94') Riser: 10'
   Cut 2.54' off riser
   Top of sand: 4.0' B65 - 9 B65s
   Top of Bend: 2.0' B65 - 1.5 B65s
   TOC: 2.54' above ground
   Label 2 20W soil drums
1845 MW-144 PID: 0.0 ppm WL: NA PL: NA
NA: It was too muddy for probe
1905 RAZEK & BRED off-site

Wednesday October 22, 2014
Weather: Clear, Sunny, 50°-80°
Personnel: Chris Haysland
Task: Round of WLS, Install MW-151, 150, 149

0630 RAZEK truck won't start - call to get fixed. Paul will clean USA while waiting.
0710 Arrive on-site
0727 Paul (RAZEK) on site
0730 Bump Test Mini:RAE 2000 (NO) 96.7/100 ppm
Substitute
Bump Test URAE: O2 = 20.9/20.5% CO: 50/50 ppm
H2S: 26/25 ppm LEL: 59/50 ppm
0735 Tony (RAZEK) said he needs a new starter, may be a few hours.
0747 MW-172 PID: 863 ppm WL: 3.80' Toc PL: None
0746 MW-146 PID: 0.6 ppm WL: 7.90' Toc PL: None
0755 MW-152 PID: 423 ppm WL: 17.30' Toc PL: None
0803 MW-171 PID: 297 ppm WL: 4.32' Toc PL: None
0819 MW-173 PID: 16 ppm WL: 9.65' Toc PL: None
L5 TOC: 2.5' above ground
0825 MW-161 PID: 554 ppm WL: 12.77' Toc PL: 12.73'
L5 TOC: 2.17' above ground
0931 MW-165 PID: 196 ppm WL: 14.62' TOC PL: None
0935 MW-164 PID: 527 ppm WL: 13.02' TOC PL: None
0940 MW-167 PID: 197 ppm WL: 6.43' TOC PL: None
0947 MW-168 PID: 1.36 ppm WL: 0.72' TOC PL: None
0952 MW-170 PID: 4.6 ppm WL: 5.11' TOC PL: None
0910 MW-169 PID: 4.7 ppm WL: 4.96' TOC PL: None

By orangish red soil on probe

0924 MW-166 PID: 283 ppm WL: 10.60' TOC PL: None
0933 MW-145 PID: 0.00 ppm WL: 12.80' TOC PL: None
0936 MW-146 PID: 0.00 ppm WL: 11.85' TOC PL: None
0940 MW-147 PID: 0.00 ppm WL: 11.35' TOC PL: None
0947 MW-144 PID: 110 ppm WL: 1.97' TOC PL: None
0944 MW-143 PID: 499 ppm WL: 8.31' TOC PL: 8.21'
1006 MW-162 PID: 0.9 ppm WL: 8.12' TOC PL: None
1040 Ian (RAEER) onsite with
1056 Mobilize & Start at MW-151
1035 Tyler emptied 1.5 drums of decayed 11.2 140
polytank to send through remediation B/g.
1130 Start backfill at MW-151
1210 Hit refusal at 29.5' 065

HSA to refusal & install well

1306 Instill MW-151

End Cap: 0.15' Gerton 14.66' (10'+4.66') + 20' 1/4
Cut off 3.67' of riser
Top of sand = 12.5' 065 = 9 Bags

Top of Bunker = 2.0' 065 = 4 Bags
TOC = 0.45' Bgs (fum-marl), after cutting 7.4' off riser
Two (2) 3.98' soil drums - labeled
MW-151 PID: 96.2 ppm WL: NA PL: N/A
LID: 29.0' TOC, NA - Hot to muddy

1346 City going through approach at MW-149 to
verify no utilities (gas line)

1350 City parked 9.0' - cleared
1357 Start direct Push at MW-149
1435 Hit refusal at 30.0' 065

HSA to refusal & install well

1528 MW-151 PID: 95.8 ppm WL: 22.98' TOC PL: NA
1537 Instill MW-151

End Cap: 0.15' Gerton 14.96' riser: 20'
Cut 4.2' off riser
Top of sand = 13.0' 065 = 9 Bags
Top of Bunker = 2.0' 065 = 2.5 Bags
Cut of 2.45' off riser
TOC = 0.35' Bgs

Lable two (2) 3.98' soil drums
1615 Mobilize & Start at MW-150
1635 Start direct Push at MW-150
1723 Hit refusal at 28.0' 065

HSA to refusal & install well

1839 Instill MW-150
Thursday, October 23, 2014

Weather: Overcast - Mostly Cloudy, 60's-70's
Personnel: Chris Hosland

Task: Install MW-154, 155, 156, 157, 158
Surface Completion

0730 Arrival on-site, RAKE & Decr. USA

0750 Mobilize & Setup at MW-154

0755 Start Direct Push at MW-154

0818 Hit refusal at 20' BOS

USA to Refusal & Install Well

0850 Install MW-154

End cap: 0.15' screen: 14.92' (10' + 4.92')
Riser: 10'
Top Sand: 4.0' BOS - 8.6 BPS
Top Base: 2.0' BOS - 1 BPS
Cut 5.25' off riser
TGC: 0.4' BOS

2 IDW Drums soil loaded

0900 Mobilize to MW-155

0915 Begin Direct Push at MW-155

0946 Hit refusal at 24.5' BOS

USA to Refusal & Install Well

1111 Install MW-155

End cap: 0.15' screen: 14.96' (10' + 4.96')
Riser: 10'
1925 Hit refusal at 24.75' OCS
HSA to refusal + install MW-157
End cap = 0.15' Screen = 14.9' (10' + 4.9')
Riser = 10'

1945 Paul (RAZER) gets inside from Tyler (AECC) to
make concrete blocks to complete wells.
Top Sand = 6' BGS - 6' BGS
Top Bentonite = 11.6' BGS - 7 BGS

1130 Tore off to decen HSA

1150 MW-154 PID = 190 mm W.C. too muddy

1150 MW-155 PID = 194 mm, W.C. 23.02% PLC None

1205 MW-150 PID = 21.3% PLC = None

1300 MW-149 PID = 95.5% PLC = None

1220 Mobilite & setting at MW-156

1230 Have City come by to confirm MW-156 is clear of utility

1230 Start Direct-Pull at MW-156

1300 Hit refusal at 22.5' OCS

1330 HSA to refusal install MW-156
End cap = 6.1' Screen = 12.4' (10' + 2.4')
Riser = 10'
Cut 0.7' off riser
Top Sand = 7.5' BGS - 6 BGS
Top Bentonite = 2.6' BGS - 2 BGS
TOC
Two (2) IDW drums placed

1350 Mobilite to MW-157

1401 Start Direct Pull at MW-157
RAZEEK ordered 2 ey concrete and
compiled 12 wells: MW-147-152, 144, 163,
172, 157, 156, 154
1935 RAZEEK v BMED off-8.4

Friday, October 24, 2014
Weather Clear, Sunny, 50's - 70's
Personnel: Chris Nogland
Task: Install MW-159 o-153, round of wells, more a
stage DWW soil driving, surface completions

0720 Arrive on-site, RAZEEK on-site
RAZEEK delivering HSA
Bury Test AVR4AE MD 2600; 100/100 ppm
Bury Test VRAE 4-609.1 H2S: 24/25 ppm,
CO: 40/50 ppm, O2: 20.9/20.9.
CE: 47/50 %
0805 Setup at MW-159
0817 Start Direct Push at MW-159
0835 Hit refusal at 16.8' OD5
HSA to refusal & install well
Install MW-159
Bend Cap: 0.46' screen: 10' riser: 10'
Cut off 0.61' from riser
Top Send: 7.5' OD5 - 5.5 Boss
Top Bender: 3.0' OD5 - 2 Boss
Tool:
2' Code Two(s), IDW soil drum
0940 Mobile setup at MW-153
0953 Start Direct Push at MW-153
1012 Hit refusal at 18.0' OD5
11:54A to reflect & install well
Install \[ \text{MW-153} \]
End Cap: 0.15'
Screen: 10.4' (6'A') Risers: 10'
Cut off 4.04' of riser
Top of sand: 4.0' BSL - 6.0'Beg
Top of benter: 2.0' BSL - 5.0' BGL
TOC = 0.3' BSL (Flash point).

135' mobilize to MW-40 to abandon
MW-40: WL= 12.96' TOC TD= 32.7' TOC Planed
Pull 14" tubing from well.

1349 Phv 3 ballasts out

1202 Break up, remove well pad

1230 Drop Pain (RAKE) off at remediation field so he can meet with concrete truck to do well cementing.

1236 overdrrill MW-40 5° BSL, bcteril in well with one day of bctctile, lock fill bctctle to surface.

1240 RAKE doing well cement & parking /moving FMW soil drum to stage at remediation field.

1453 Clear decoen pit, generate 3 drums of decoen 50

1506 MW-148 PID=0.04' WSL=3.18' TOC PC= None

1615 MW-172 PID=352 ppm WSL=3.9' TOC PC= None

1629 MW-171 PID=256 ppm WSL=4.45' TOC PC= None
1810 MW-153 10/0.0 WL: 8.33' FC: PL: None
1835 RAZEK has all drums with exception of remediation areas
getting there now.
1920 RAZEK getting last 10 DDW soil drums.
Drum inquiry: Drums staked on gravel lot
west of remediation bldg.
3 Decon soil cuttings + 1.20 from decon trench
1 Drum w/ concrete (b3 fail)
47 Drums - soil cuttings so far
4 Empty Drums
2000 Drop off final 10 drums for total DDW
soil drums = 57
2050 RAZEK a BMed off site
2255 Arrive in KC

Wednesday October 22, 2014

WEATHER: 50's - 60's, SUNNY, CT. WINDS
Personnel: Chris Noglesd

Task: COLLECT WL, DEVELOPT WECS MW-171,
172, 148, 149
0630 Depart BMed KC, MO
0650 Arrive on site
0658 MW-147 WL: 12.46' FC: PL: None
0902 MW-148 WL: 12.77' FC: PL: None
0905 MW-145 WL: 13.72' FC: PL: None
0910 MW-144 WL: 4.18' FC: PL: None
0920 Susan Yeager (BMed) on-site, met with
remediation bldgs.
1000 Unload decons at remediation bldg. Dylan
provided trash pump to use after 3:30 PM
to transfer DDW development into
remediation bldg tanks.
1045 Meet Kendall & Tony Ferrell and
Garber Surveying Service, PA to discuss
locations
1051 MW-171 WL: 5.0' FC: PL: None
MW-172 WL: 4.54' FC: PL: None
MW-148 WL: 8.72' FC: PL: None
1104 Pick up pump at remediation bldg
10/29/14

1108 MW-131 WC: 23.00% Tor PL: None
MW-130 WC: 21.62% Tor PL: None
MW-149 WC: 23.33% Tor PL: None

1131 Set up at MW-171 for well development
Well casing volume = 1.3 Gallons
Saturation factor Purtz 90 Gallons
6.5 Gallons
5 Borehole + Well volume = 31.6 Gallons

1159 Begin well development
Initial pH = 6.6 Cond = 970 uS Temp = 17.9°c
10 Gal pH = 6.6 Cond = 920 uS Temp = 17.5°c
Purged water went from very turbid to lightly turbid, Purged dry at 10 gal

1225 Decov pump move to continue well collection

1245 MW-152 WC = 17.66°c PL: 17.6°c
MW-154 WC = 14.56°c PL: None
MW-160 WC = 13.83°c PL: None
MW-168 WC = 7.19°c PL: None

1304 Check/sign in at CBU Services to get badges

1311 MW-170 WC: 5.94°c PL: None
MW-169 WC: 3.29°c PL: SHEEN

1329 Sign out, return badges at CBU Services
MW-144 WC: 14.01°c PL: 14.0°c
MW-165 WC: 15.10°c PL: SHEEN

10/29/14

MW-161 WC: 13.77°c Tor PL: 13.73°c
MW-173 WC = 13.19°c Tor PL: None
MW-160 WC = 14.65°c Tor PL: 14.67°c
MW-167 WC: 7.00°c Tor PL: SHEEN
MW-159 WC: 15.08°c Tor PL: None
MW-158 WC = 19.54°c Tor PL: None
MW-157 WC = 19.70°c Tor PL: None
MW-156 WC = 15.98°c Tor PL: SHEEN
MW-165 WC: 18.41°c Tor PL: None
MW-153 WC: 8.57°c Tor PL: None

1441 Check in at NEC

1448 MW-162 WC: 9.35°c Tor PL: None

1530 Set up at MW-172 for well development
1530 Cal pH Cond Temp Turbidity
1535 2 7.1 1040 18.2 Dirk Brown
1530 10 7.0 1000 17.4 Matt Brown
1540 15 7.0 990 12.3 Matt Brown

Purged dry at = 18 Gallons

1850 Decov pump & tubing

1600 Set up at MW-148 for well development
1600 Cal pH Cond Temp Turbidity
1604 2 7.1 2.80 mS 17.7 Dirk Brown
1606 6 6.7 3.00 mS 17.2 Dirk Brown
1607 10 6.7 2.70 mS 16.5 Dirk Brown
1610 15 6.7 2.70 mS 16.6 Dirk Brown
Thursday, October 30, 2014

Weekly: 40's to 70's, Sunny. Winds 5-15 mph

Personal: Chris Holgland and Jason Kuyper

Task: Well Development at MW-144, 147, 146, 145, 170
109, 167, 162, 153, 168, 166, 165, 173, 157, 155, 156, 150, 151
6700 Arrive on-site, Jason Kuyper on-site
0705 Mobilize to MW-144

0710 Set up for well development at MW-144

<table>
<thead>
<tr>
<th>Gallons</th>
<th>pH</th>
<th>Cond.</th>
<th>Temp.</th>
<th>Turbidity</th>
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<td>7.5</td>
<td>740 us</td>
<td>15°C</td>
<td>Clear</td>
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<td>0723</td>
<td>7.6</td>
<td>740 us</td>
<td>13.7°C</td>
<td>Dark Brown</td>
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<td>14.8°C</td>
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<td>0728</td>
<td>7.3</td>
<td>760 us</td>
<td>14.5°C</td>
<td>&quot;</td>
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<td>0755</td>
<td>7.5</td>
<td>770 us</td>
<td>13.4°C</td>
<td>Light Yellow</td>
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<tr>
<td>0751</td>
<td>7.5</td>
<td>790 us</td>
<td>14.5°C</td>
<td>Light Cloudy Yellow</td>
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</tbody>
</table>

Stop Development - Decant Pump & tubing

0800 Setup at MW-147 for well development

<table>
<thead>
<tr>
<th>Gallons</th>
<th>pH</th>
<th>Cond.</th>
<th>Temp.</th>
<th>Turbidity</th>
</tr>
</thead>
<tbody>
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Stop Development - Decant Pump & tubing

10/24/14 80435

C. Holgland
J. Kuyper

Gallons  pH  Cond.  Temp.  Turbidity
1611  20  6.7  2.66 mS  16.7  Dark Yellow, Brown
1612  25  6.7  2.66 mS  16.1  "          |
1618  35  6.7  2.66 mS  16.4  "          |
1622  45  6.16 2.50 mS  16.2  Light Yellow, Brown
1626  55  6.6  2.50 mS  16.5  "          |
1630  65  6.8  2.60 mS  16.5  "          |
1634  75  6.7  2.50 mS  16.5  Cloudy Yellow Brown
1643  100 6.7  2.60 mS  17.1  "          |
1646  110 6.8  2.50 mS  16.5  Cloudy White

Step Development - Decant Pump & tubing

0721 Set up to develop well MW-149

Gallons  pH  Cond.  Temp.  Turbidity
1710  17  1030 us  16.2°C  Dark Brown, Gray
1711  34  6.7  1100 us  17.3°C  "          |
1719  5.0  6.9  1140 us  16.8°C  "          |
1718  10.0 7.0  130 us  16.9°C  "          |
1720  12.0 7.0  1140 us  16.0°C  Light Brown, Gray
1722  15.0 7.0  1120 us  16.6°C  Light Brown
1725  20.0 6.9  1170 us  16.2°C  "          |

Stop Development - Decant Pump & tubing

1800 Empty - 160 gallons of development stage H2O +
Decant H2O into AECA Pig Tank (325 gal.) at
removal site.

1830 Off-side

C. Holgland 10/24/14
82 10/30/14 60435 C. Hoglund T. Reger

0845 Setup at [MW-146] for well development
Gal pH Cond Temp Turb.
0847 1 7.9 9410 vs 12.9°C Dark Yellow Brown
0855 20 7.2 920 vs 13.0°C Yellow Brown
0902 40 7.3 910 vs 14.2°C 
0911 70 7.3 910 vs 13.9°C Light Clumpy White
Stop Development - Decan Pump & Tubing

0920 Setup at [MW-145] for well development
Gal pH Cond Temp Turb.
0923 1 7.4 1060 vs 15.6°C Dark Yellow Brown
0931 20 6.9 1140 vs 15.3°C 
0936 40 6.9 1150 vs 15.1°C Light Clumpy Brown
0944 60 7.0 1180 vs 14.9°C 
0951 80 7.1 1190 vs 14.6°C Light Clumpy Gray
Stop Development - Decan Pump & Tubing
1004 Arsen at remediation study to unload DW Purge & Decan H2O.
1025 Setup at [MW-150] for well development
Gal pH Cond Temp Turb.
1033 1 7.0 1220 vs 16.3°C Black Sheen
1036 60 6.9 1300 vs 16.7°C Dark Gray
1045 20 7.0 1380 vs 19.0°C Light Gray (Clumpy)
1051 25 7.0 1460 vs 19.4°C 
Well Dry @ 25 Gal - Stop Development - Decan Pump & Tubing

10/30/14 60435 C. Hoglund T. Reger

1110 Setup at [MW-169] for well development
Gal pH Cond Temp Turb. Sheen
1120 1 7.3 1360 vs 17.6°C Dark Yellow Brown
1122 7 7.0 1140 vs 20.0°C Greenish Brown Sheen
1125 11 7.0 1070 vs 19.8°C 

1129 15 7.0 1060 vs 19.5°C 

1132 25 7.1 1060 vs 18.9°C Light Clumpy Gray
Well Dry - Stop Development - Decan Pump & Tubing
1145 Setup at [MW-167] for well development
Gal pH Cond Temp Turb. Sheen
1148 1 6.7 1060 vs 18.6°C Clear

1151 6.0 6.7 1040 vs 18.7°C Greenish Brown
1157 8.0 6.7 1000 vs 19.7°C Light Clumpy Brown
Well Dry - Stop Development - Decan Pump & Tubing
1200 Setup at [MW-162] for well development
Gal pH Cond Temp Turb.
1222 1 7.7 860 vs 19.4°C Dark Yellow Brown
1225 2.5 7.9 850 vs 21.0°C Yellowish Brown
1231 5.0 7.5 770 vs 20.2°C Light Yellow Brown
1236 7.0 7.5 750 vs 20.8°C 

Well Dry - Stop Development - Decan Pump & Tubing
1250 Setup at [MW-153] for well development
Gal pH Cond Temp Turb. Sheen
1253 1 7.5 940 vs 20.8°C Yellow Brown
1257 5.0 7.5 810 vs 20.6°C
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**Well Dry - Stop Development - Ocean Pump & Tubing**

**Setup at [MW-166] for well development**

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**Well Dry - Stop Development - Ocean Pump & Tubing**

**Setup at [MW-173] for well development**

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**Well Dry - Stop Development - Ocean Pump & Tubing**

**Setup at [MW-154] for well development**

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**Well Dry - Stop Development - Ocean Pump & Tubing**

**Setup at [MW-155] for well development**

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### Wells

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### Deco Drum Inventory:
- 64 total Drums w/ 5 gal. 2014 + H₂O + Lungs + Concrete
- 47 1 Concrete (5 gal.)
- 3 Decom H₂O + Mud from Decom Pit/Pit
- 60 Soil 2014 Drums
- 64 total, 4 Empty Drums

C. Horley OFF-SITE

J. Yeager OFF-SITE
<table>
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<th>Temp</th>
<th>Cond</th>
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**Stop Development, Decon Pump + Tubing**

*12:05 PM - Setup on MW-164* for well development

**GAL pH Cond Temp Remarks**

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**Stop Development, Decon Pump + Tubing**

*13:05 PM - Setup on MW-152* for well development

**GAL pH Cond Temp Remarks**

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**Stop Development, Decon Pump + Tubing**

*13:57 PM - Setup on MW-160* for well development

**GAL pH Cond Temp Remarks**

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**Stop Development, Decon Pump + Tubing**

*14:45 PM - Unload 10kW Development Water and Decon Water at Remediation Building, Dispose of all Remaining Trash in Dumpster*

**GAL pH Cond Temp Remarks**

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<td>J. YEAGER</td>
<td>OFF-SITE TO OFFICE</td>
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MONDAY NOV. 3, 2014
WEATHER: 50's - 60's, CLOUDY W/ CHANCE OF RAIN
PERSONNEL: J. YEAGER
TASK: COLLECT WL, PL AND TD FROM WELLS,
BEGIN SAMPLING WELLS
0630 DEPART FOR SITE
0941 ARRIVE ON-SITE
0958 BEGIN COLLECTING WL/PL/TP

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<tr>
<td>MW-174</td>
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1406 FINISH COLLECTING WL/PL/TP.
1425 CALIBRATE TURBIDITY METER = OK
CALIBRATE pH/TEMP/CONDO = OK
CALIBRATE YSI DO/OXY = OK
1445 PICK UP ICE FOR SAMPLES
1502 SET UP ON MW-171 VOL = 3.75 GAL
TIME CAL 8H GOOD TEMP DO OKR TURB
1517 L 7.80 796 17.22 30.0 -49.4 1000
1520 1.25 6.33 7.62 16.94 29.1 -28.3 42.2
1534 2.50 6.33 7.86 16.92 18.3 -54.5 12.7
1544 3.75 6.51 7.57 16.88 16.8 4.7 74
11/3/14  80435  J. Yeager

Time  CAL  PH  COND  TEMP  DO  SAP  TURB
1553  5.0  466  754  16.73  21.8  -83.0  6.87
1603  456  6.72  756  16.74  27.4  -85.5  5.64
1605 COLLECT [MU-171/GW-01] FOR VOC, SVOC, PAN, RCRA-B, TPH
  LC= 6.72
1622 J. Yeager OFF-SITE
Late entry 1617 COLLECT [FIELD BLANK-01]
  FOR VOC, SVOC, PAN, RCRA-B, TPH

11/2/14

11/4/14  80435  J. Yeager

TUESDAY, Nov. 4, 2014

Weather: 90°-50°, cloudy

Personnel: J. Yeager

Task: Continue sample collection from new mud

0716 ARRIVE ON-SITE

0718 CALIBRATE 451 METER/TURB METER

0731 SET UP AT MU-152 VOC: 2.5 CAL

Time  CAL  PH  COND  TEMP  DO  SAP  TURB
0737  7.21  437  15.01  285.75  3  2.48
0746  0.8  7.01  492  15.86  21.7  -79.1  48.2
0754  1.6  7.00  448  15.97  22.4  -81.2  22.0
0803  2.5  6.99  684  15.89  22.7  -78.9  16.2
0812  3.8  6.98  633  15.77  25.9  -85.4  10.1
0821  4.1  6.98  630  16.77  21.8  -82.6  5.62
0830  4.9  6.97  620  15.85  22.6  -80.5  2.41
0832 COLLECT [MU-152/GW-01] AND [MU-152/GW-02]
  FOR VOC, SVOC, PAN, RCRA-B, TPH
  LC= 17.74 TOC

0928 COLLECT [FIELD BLANK-02] FOR VOC, SVOC
  PAN, RCRA-B, TPH

1000 MARKET (KONE) ON-SITE TO COLLECT
  SPIT SAMPLES MU-154 + MU-152/155
  CONTINUED
  ON NEXT PAGE
SET UP ON MW-154 VOL: 2.7 GCL

TIME GAL pH CONO TEMP DO ORP TURB
1022 1 7.30 852 17.23 28.4 10.2 4.41
1028 0.9 7.11 840 18.12 45.7 -52.6 118
1038 1.8 7.05 757 18.24 57.0 -81.5 8.94
1046 2.7 7.05 751 18.40 42.9 -100.2 3.65
1052 3.6 7.05 749 18.49 44.5 -98.8 2.99
1059 4.5 7.03 747 18.29 40.1 -102.8 2.46
1107 COLLECT [MW-154/GW-01] FOR VOD, SVOC
PAH, RCRA-8, TPH KOHE SPLIT
SET UP ON MW-155 VOL: 2.9 GCL

TIME GAL pH CONO TEMP DO ORP TURB
1154 1 7.65 890 16.56 52.8 39.0 00A
1203 0.9 7.35 831 16.92 61.5 52.2 00A
1211 1.9 7.19 907 17.13 56.7 56.5 00A
1221 2.9 7.07 988 17.24 55.2 49.6 184
1229 3.8 6.96 1012 16.99 51.6 32.0 34.8
1237 4.7 6.92 1083 16.99 52.1 37.6 17.1
1245 5.6 6.89 1043 17.01 60.5 28.8 14.8
1251 6.6 6.86 1045 14.99 64.3 28.1 12.1

WCL: 18.59
FOR VOD, FVOC, PAH, RCRA-8, TPH KOHE SPLIT
CONTINUED ON
NEXT PAGE
11/4/14
80435
J. YEAGER

1710 SET UP ON MW-149 VOL = 1.5 GAC
TIME GAC pH COND TEMP PD ORP TURB
1725 I 6.18 893 15.40 51.9 -80.3 2.49
1729 0.5 7.04 905 16.21 50.9 -90.1 32.5
1733 1.0 7.05 905 16.29 48.3 -90.7 7.12
1736 1.5 7.04 908 16.36 44.6 -91.7 4.78
1739 2.0 7.02 908 16.29 46.3 -96.0 2.81
1742 2.5 7.03 910 16.31 50.8 -96.4 1.89
1747 3.0 7.03 910 16.30 46.4 -98.5 1.52
1750 3.5 7.02 912 16.29 47.3 -97.8 4.06
1754 COLLECT [MW-149/Ow-0] FOR VOC
SWOC, PAH, RCRA-8, TPH
1813 SET UP ON MW-144 VOL = 2.9 GAC
TIME GAC pH COND TEMP PD ORP TURB
1829 I 7.33 633 17.46 76.0 -98.9 2.13
1836 1.3 7.54 638 18.30 59.4 -63.5 10.33
1843 2.0 7.69 691 18.48 59.5 -41.7 1.00
1850 2.8 7.70 723 18.61 78.1 -26.3 1.00
1857 3.2 7.76 727 18.44 53.2 -21.8 0.83
1904 4.0 7.77 742 18.43 48.5 -23.2 0.94
1911 7.8 7.83 755 18.43 46.8 -24.9 0.98
1917 COLLECT [MW-144/Ow-0] FOR VOC, TVOC
SWOC, PAH, RCRA-8, TPH
1940 J. YEAGER O/S SITE

11/5/14
80435
J. YEAGER

WEDNESDAY NOV. 5, 2014
WEATHER: 35° to 60°, Partially Cloudy
Personnel: J. YEAGER
TASK: CONTINUE COLLECTING SAMPLES FROM
NEW MW
0630 ARRIVE ON SITE
0634 CALIBRATE 451 METER / TURBIDITY METER
0644 SET UP ON MW-154 VOL = 2.8 GAC
TIME GAC pH COND TEMP PD ORP TURB
0647 I 7.15 1028 16.05 62.8 -64.2 6.07
0708 0.9 7.10 1027 16.35 90.7 -104.9 4.12
0709 1.8 7.07 1042 16.31 43.1 -109.3 18.5
0715 2.8 7.04 1071 16.34 43.6 -111.3 11.6
0721 3.7 7.05 1089 16.53 39.2 -114.6 6.37
0726 4.7 7.05 1081 16.83 37.8 -116.0 7.11
0732 5.6 7.05 1047 16.34 34.5 -115.4 6.38
0734 COLLECT [MW-154/Ow-0] FOR VOC, TVOC
SWOC, PAH, RCRA-8, TPH
SHEEN ON BAILER AND PROBE
0735 STOP TO GET FUEL AND ICE FOR SAMPLES
0811 SET UP ON MW-153 VOL = 4.6
TIME GAC pH COND TEMP PD ORP TURB
0823 I 7.81 839 18.24 61.7 -120.1 0.0R
0833 1.5 7.97 822 19.37 60.6 -99.4 0.0R
0840 3.0 7.89 791 19.65 73.8 -41.1 47.7
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0945 Meet up with Garber surveying to get access to wells MW-110 and MW-119.

0946 Sign in at office / get badge

1025 Set up on MW-170 Vol: 5.7 GAL

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1141 Collect [MW-170/GW:0] for VOC, SVOC, PAH, ERCR-8, TPH

1201 Set up on MW-119 Vol: 5.4 GAL

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1225 [MW:119/GW:0] for VOC, SVOC, PAH, ERCR-8, TPH

1313 Set up on MW-142 Vol: 7.0 GAL

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1357 Collect [MW-162/GW:0] for VOC, SVOC, PAH, ERCR-8, TPH

1420 Pick up ice to pack samples for FedEx pickup

1500 Finish packing samples for FedEx

1510 Set up on MW-159 Vol: 2.25 GAL

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1556 COLLECT [MW-159/GU-01] FOR VOC, SVOC
PAH, RCRA-8, TPH

14/17 SET UP ON MW-158 VOL = 3.2 GAL

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1703 COLLECT [MW-158/GU-01] FOR VOC, SVOC
PAH, RCRA-8, TPH

1722 SET UPON MW-157 VOL = 2.3 GAL

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**Notes:**
- **Weather:** 40°-50°, Sunny, Windy
- **Personnel:** J. Yeager
- **Task:** Continue sampling wells
  - 0639 Arrive on-site
  - 0643 Calibrate YSI and turbidity meters
  - 0645 Set up on MW-172 vol. = 8.9 gal
  - Time, pH, Cond, Temp, DO, ORP, TURB
  - 0707 7.0 7.06 773 15.14 42.4 92.0 23.7
  - 0720 7.04 7.07 765 15.18 37.8 68.8 13.7
  - 0735 5.9 7.02 826 15.18 34.7 21.2 4.87
  - 0749 8.9 7.00 812 15.46 32.8 -10.3 2.45
  - 0803 11.9 6.98 804 15.55 34.1 -33.8 2.93
  - 0817 14.8 6.99 763 15.51 30.8 -37.6 2.78
  - 0831 17.8 7.00 760 15.54 29.7 -36.2 2.95
  - 0833 Collect (MW-172/24) for VOC, SVOC, PAN, CRCA-8, TPH
  - 0843 Collect (field blank-05) for VOC, SVOC, PAN, CRCA-8, TPH
  - 0850 Set up on MW-148 vol. = 10.5
  - Time, pH, Cond, Temp, DO, ORP, TURB
  - 0901 7.46 7.00 785 -17.7 572
  - 0916 3.5 6.82 2180 16.26 45.6 15.9 10.1
  - 0921 7.0 6.71 2068 16.41 33.6 40.7 4.13
  - 0946 10.5 6.68 2073 16.28 30.7 -47.4 4.75
  - 1016 8.2 6.56 731 14.41 28.6 -21.3 9.6
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**Notes:**
- pH, Cond, Temp, ORP, Turb are measurements.
- Vol is the volume in gallons.
- ORP and Turb are units of measurement.
- SET UP记录了设备的设置情况。
- COLLECT表示收集样品。
FRIDAY NOV. 7, 2014
WEATHER: 30's to 50's, SUNNY, WINDY
PERSONNEL: J. YEAGER
TASK: FINISH MW SAMPLING
0628 ARRIVE ON-SITE
0630 CALIBRATE 451 & TURBIDITY METERS
0642 SET UP ON MW - 144 VOL = 10.2 GAL
TIME GAL PH COND TEMP DO ORP TURB
0645 T 7.86 571 1410 34.7 83.1 84.4
0712 3.4 7.18 557 14.73 23.8 64.2 96.8
0732 4.8 7.16 559 14.77 14.7 55.5 49.2
0748 10.2 7.16 559 14.70 19.5 29.4 39.8
0804 13.6 7.16 556 14.78 18.7 33.1 34.8
0822 17.0 7.17 554 14.77 14.8 36.7 34.1
0825 COLLECT [MW - 144/GW - 01] FOR VOC, FVOC, PAH, RCRAB - 8, TPH
0827 SET UP ON MW - 163 VOL = 39 GAL
TIME GAL PH COND TEMP DO ORP TURB
0842 T 7.11 989 14.69 28.8 -96.5 00.4
0852 1.1 7.22 1014 17.69 21.4 -106.5 81.8
0859 2.2 7.23 1007 17.36 19.2 -123.1 31.5
0907 3.3 7.26 1021 17.40 14.5 -124.0 17.5
0915 4.4 7.27 1029 17.44 15.9 -121.7 17.6
0923 5.5 7.27 1027 17.39 14.8 -131.2 16.4
0925 COLLECT [MW - 163/GW - 01] FOR VOC, FVOC, PAH
1018 SET UP ON MW - 164 VOL = 3.3 GAL
TIME GAL PH COND TEMP DO ORP TURB
1023 T 7.21 1180 16.29 25.1 -115.1 00.0
1031 1.6 7.13 1040 16.47 18.5 -125.7 00.0
1039 2.2 7.14 978 16.32 15.0 -124.5 58.9
1047 3.3 7.13 984 16.27 15.5 -125.8 31.6
1055 4.4 7.11 956 16.40 18.8 -127.9 83.1
1103 5.5 7.12 955 16.31 14.3 -128.4 7.95
1111 6.0 7.10 952 16.24 14.9 -128.7 7.73
1119 COLLECT [MW - 164/GW - 01] FOR VOC, FVOC, PAH, RCRAB - 8, TPH
1131 SET UP ON MW - 161 VOL = 5.9
TIME GAL PH COND TEMP DO ORP TURB
1138 T 7.12 1190 16.58 23.6 -117.5 95.8
1147 1.3 7.16 1188 14.32 19.8 -123.0 38.5
1156 2.6 7.12 1111 16.22 16.6 -124.2 25.1
1205 3.9 7.14 1099 16.49 15.9 -127.4 11.4
1214 5.2 7.14 1107 16.59 2.5 -129.9 9.29
1223 6.5 7.15 1090 16.50 16.8 -126.7 8.82
1232 7.8 7.14 1098 16.59 15.1 -128.4 8.97
1235 COLLECT [MW - 161/GW - 01] AND [DFP - 03] FOR VOC, FVOC, PAH, RCRAB - 8, TPH
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1400 Collect [MN-173 (GW-O)] for VOC, SVOC, PAH, BCR-2, TPn
1417 Set up on MN-140 Vol = 4.5 gal
1450 FedEx pick up samples
1700 J. Yeager off-site to office
1930 Arrive at office
1530 Park samples for FedEx pickup
1630 OMNIPurge water at AECDM remediation building