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West vermont VOC contamination 12/6/11

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Greg Roussos	Weston (START)	513-604-4797
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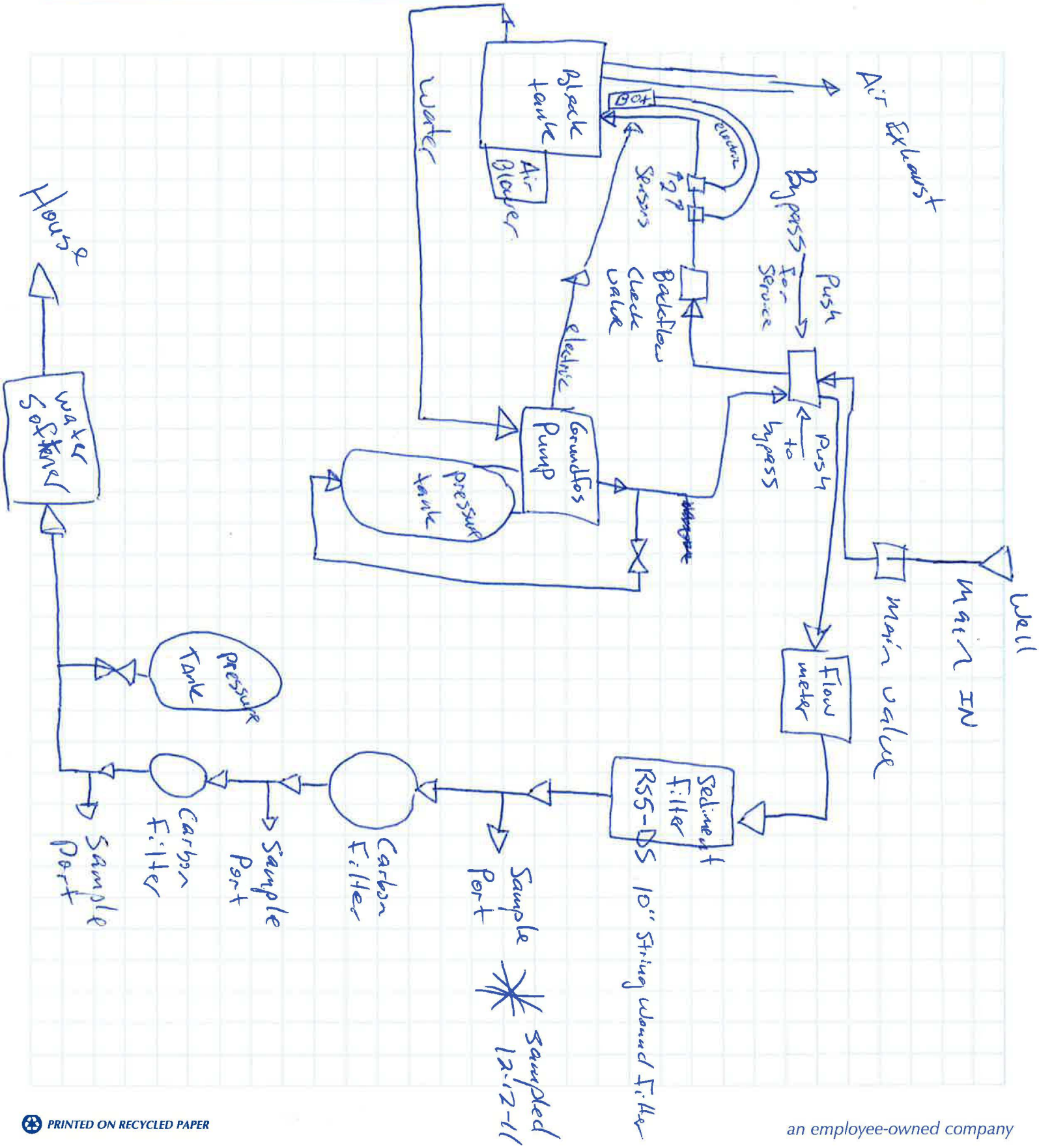
Chuck Goodman	ENVIRON	
Andrew Gremos	ENVIRON	
Andrew White	Mundell	
SARAH WEBB	MUNDELL	
Tom Kolb	ARCADIS	
SARAH Fisher	ARCADIS	
Shelly Lam	U.S. EPA	

12/07/11

David Sena	Weston (START)
Alex Schultze	"
Greg Roussos	"
Tom Kolb	Arcadis
Shelly Lam	U.S. EPA
Jason Sewell	"
Frank West	ENVIRON

Nick Zurweller	ENVIRON
David Sena	Weston START
Alex Schultze	"
Greg Roussos	"
Jason Sewell	EPA
Tom Kolb	Arcadis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Grundfos Pump
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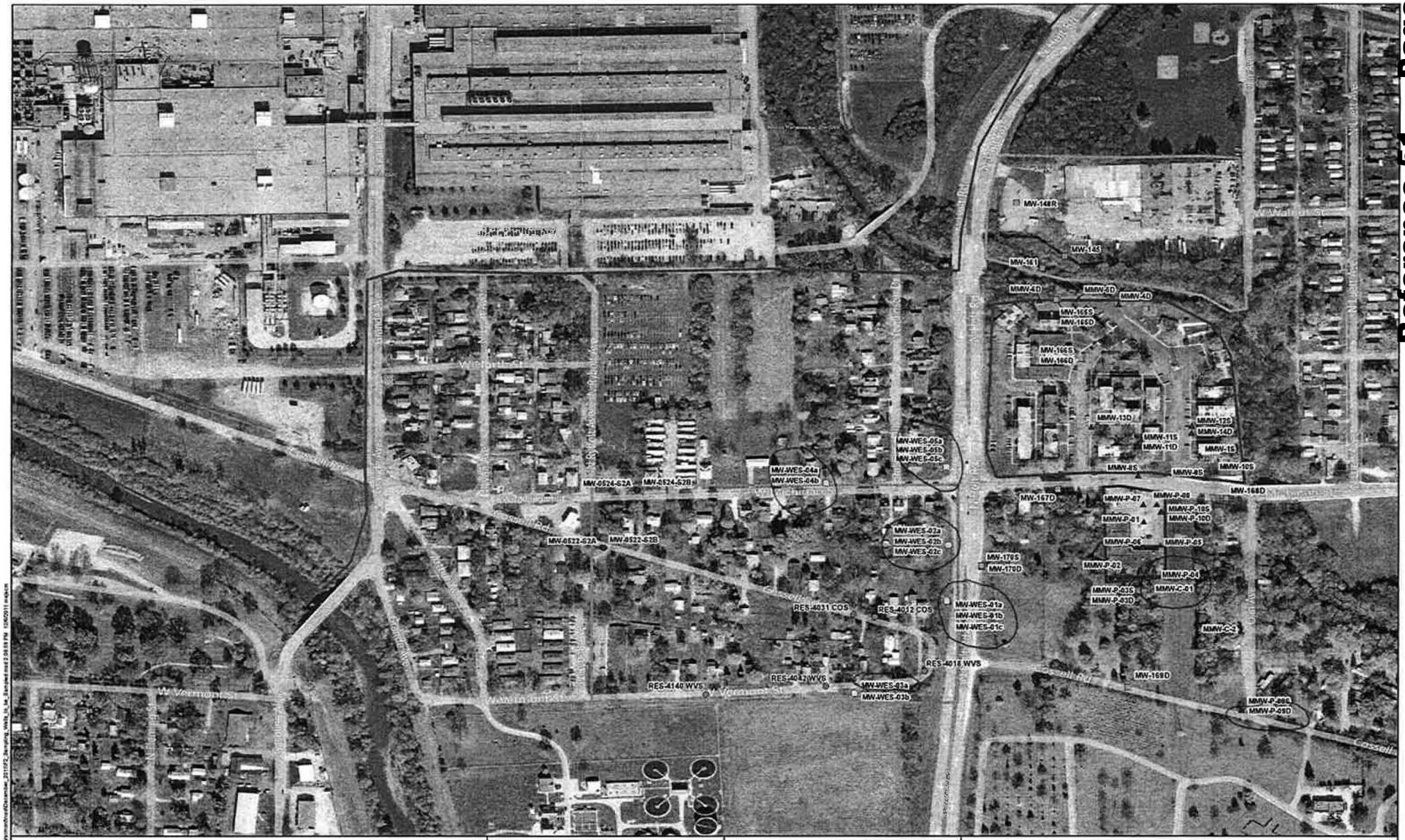
Push to bypass
Water
House
water Softener
Pressure Tank
Flow meter
Main Valve
Main IN
Well
Sediment Filter RS5-DS
10" String Wound Filter
Sample Port
Carbon Filter
Sample Port
Carbon Filter
Sample Port
Sampled 12-12-11



Legend

- GM Allisson Transmission Site
- Genuine Auto Parts Site
- Michigan Meadow Apartments
- Michigan Plaza Site
- Residential Area
- Not Specified
- GM
- Genuine Parts
- Mi Plaza
- U.S. EPA

Imagery Source: ESRI Bing Maps

Prepared For:
U.S. EPA REGION V
Contract No.: EP-S5-06-04
TDD:
DCN:

Prepared By:
WESTON SOLUTIONS, INC.
750 E Bunker Ct. Suite 500
Vernon Hills, Illinois 60061

Figure 2
Wells to be Sampled
West Vermont Street Contamination
Speedway, Marion County, Indiana

- we've done 4 dups, need 3 more
- mmw-c-2 & mmw-p-09S are not on table
- we've done 3 ms/msds, need 1 more, make sure only 6 vials

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Logbook 1 of 5

"Rite in the Rain"®
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No. 391

W. Vermont
Speedway, IN

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Name W Vermont Hydrogeological Investigation

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Lead START: Brett Coulter

Project 517-881-0208

START: Amanda Takacs

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PAGE	REFERENCE	DATE

11/9/11 W Vermont A. Takacs

0750 START Takacs arrives on-site to conduct oversight of air-knife operations. START Coulter will be conducting oversight of roto sonic drill operations today. —— AT.

0815 Air Knife subcontractor arrives on the SE corner of Michigan and Holt and begin setting up to locate utilities.

0830 Begin air knife, first location. Hit a 2" conduit communication line. Per START Coulter hole is offset a foot. This location is clear. START Takacs takes several pictures of hole and location. —— AT

- This is a GeoProbe location so whole is refilled & flagged —— AT

0930 Bloodhand crew mobilizes to second location on the south side of W Vermo and begins air knife operations. —— AT.

0945 START Takacs & Coulter determine Cossell Rd Geoprobe location and mark.

1045 Bloodhand crew reaches depth of 7 feet. here a layer of cobbles prevent the hole from going deeper. Crew checks that hole is 10". No utilities were found up to this

AT

11/9/11 W. Vermont A.T.

depth. START Takacs takes several pictures of hole at this location —AT

1130 After deconning equipment & flagging hole Crew breaks for lunch —— AT

1215 Bloodhand crew and START Takacs meet at 3rd location on Cossell Rd.

1340 Crew has probed with air knife past 7ft and found nothing. Air hose has exposed up to 6ft but due to sandy soil and unconsolidated fill the hole keeps closing in past that point — AT

- Note Utility locating service identified comm lines running along W Vermont St & marked them. He did not mark location of sanitary sewer line on cossell. START Takacs asked Bloodhand if they could ID the line. They said the radar probably wouldn't go that deep & a manhole could not be found to locate it —— AT.

1400 START Takacs tells Bloodhand they are done for the day. and gets USEPA Trimble from START Coulter — AT

- START Takacs marks with Trimble all VAS and geoprobe locations except for on E Michigan in front of Apartments

AT.

4

11/9/11 W. Vermont AT

1545 START Takacs returns to rotosonic location on S. Holt and observes groundwater sampling ops — AT.

1645 START Takacs off site — AT

5

11/10/11 W. Vermont AT

0750 START Takacs arrives at Geoprobe location on the NE corner of Holt and Michigan — AT

0800 Geoprobe subcontractor arrives at 1st location — AT

0830 PID calibration # REW21372 — AT

LEL 49 ppm — O_2 20.9% — AT

CO 50 ppm — VOC 99 ppm — AT

H_2S 24 ppm — AT.

0850 H&S meeting w/ Geoprobe subcontractor running the rig Justin. Main concerns are traffic and correct PPE around rig. He will bucket decon after each hole & then steam wash at WWTP at lunch.

- START Takacs briefs oversight Mundell of sampling activities & H&S. She will be taking split soil & water samples.

0900 Sample nomenclature includes WVS-SB01-(X-X)-111011-SS — AT

0935 Taking sample B/w 6-9.5 ft WVS-SB01-(6.5-9)-111011-SS — AT

Mundell oversight took split of this sample — AT

AT

6

11/10/11 W Vermont AT

10:20 Took 2nd soil sample between 16-19ft at end of boring — AT
~~START~~ WVS-SB01-(16-19)-111011-SS
- took 2 pictures of borings at this location — AT
- No water collecting 1" pump set in Screen 15-19 ft — AT.
START Takaco tells Justin after 15min to pull screen, it is dry so we will not be collecting a GW sample at this location — AT.
- Driller fills hole with Bentonite and closes
- START takes 3 pictures of drilling location & closed hole. — AT
10:50 Justin walks Geoprobe over to southeast corner of Holt & Michigan to 2nd Geoprobe location WVS-111011-SB02 — AT.
11:30 Drilling begins at location SB02 — AT.
12:15 Take sample between 13-15ft sand below highly compact/plastic clay layer. WVS-SB02-(13-15)-111011-SS — AT.
1245 After conversation w/ OSC Lam, START Takaco will take second sample at 13ft due to dark soil lens near possible sewer line location — AT
AT

7

11/10/11 W Vermont AT.

- WVS-SB02-(13-14)-111011-SS — AT
1400 Headspace readings from SB02 13-14 ft interval — AT
CO: 0 ppm VOC: 0.2 - 0.8ppm — AT
O_2: 20.7% H_2S: 0 ppm LEL: 0 ppm — AT.
Note* Broke for lunch from 1315-1345 — AT
1410 Begin drilling at third location Northwest corner of Holt & Michigan.
WVS-111011-SB03 — AT
1450 Took sample in 12-13ft interval between clay layers. — AT
WVS-SB03-(12-13)-111011-SS — AT.
1515 Took sample in 19-20ft interval when PID read 0.1 ppm VOC. all other nch detect. — AT
WVS-SB03-(19-20)111011-SS — AT
- took head space sample from around 19ft and placed in can to warm — AT.
16:10 Take headspace readings w/ PID of 19-20 ft interval — AT
VOC: 2.4-16.9ppm O_2: 20.9% — AT
CO: 0-2ppm H_2S: 0ppm — AT
LEL: 0 ppm — AT
16:30 Checked Temp well at location SB02 with water depth meter. The well
AT

8

11/10/11 W Vermont at.

is dry to boring depth of 20ft — at

- Since no water was found at SB01 or SB02 & soil was not saturing in SB03 boring, SW sample is not attempted at SB03. — at

- Crew mobilizes to 4th Grapevine location at the end of Cossell Rd.

1745 Took sample and chips at 14-15ft interval at SB04 — at

WVS-SB04-(14-15)-111011-SS — at

WVS-SB04-(14-15)-111011-SS-DUP — at.

1800 All holes for the day were filled w/ Bentonite and closed. — at

- Tomorrow Bloodhound will be out to clear Mich. St apartment locations.

1810 START Takes off site — at

9

11/10/11 W Vermont at

0800 START Takes on site at Michigan St. Apartments — at

- OSC Yam & START Coulter are on-site already. Locations for both site are determined now that access has been granted by property owner — at.

0820 Bloodhound Air knife crew sets up at first location SB05 directly across from Michigan Plaza property

0900 First airknife location SB05 is cleared to 10ft. START Takes takes several pictures and tells Bloodhound they can fill the hole. They did not bring a blacktop kit so the asphalt will be left open.

0910 PID calibration RFW21372 — at

VOC 100 ppm — H_2S 16 ppm — at

LEL 49 ppm — O_2 20.9% — at

CO 49 ppm — at

0915 Bloodhound moves to second location SB06 in front of W Michigan St apartments — at

0945 Crew completes hole to 9.5ft clear of utilities. START Takes at.

10

11/11/11 W. Vermont St. A. Takacs

takes photos of holes & per START Coulter tells Blondh and crew they are done for the day — at

1035 Justin w/ WDC Drilling Co. arrives at Michigan street apartments & sets up rig at location SB05 — at.

11:00 Drilling at location SB05 begins — at

12:00 Took sample at 14-15 ft interval WVS-SB05-(14-15)-111111-SS — at.

12:20 Took sample at 17-18 ft — at WVS-SB05(17-18)-111111-SS — at

12:30 Temporary well set at boring completion depth to attempt GW sample — at

- Crew breaks for lunch — aK

1325 Takes sample of ground water at SB05. Let pump run for 1-2 min then took 1 sample plus dup — at.

- WVS-SB05-111111-GW — at

- WVS-SB05-111111-GW-DUP — at.

1345 SB05 Air knife hole & Geoprobe hole are patched. Drilling hole is filled w/ Bentonite chips and both are patched w/ asphalt — at

1400 Geoprobe is moved to 2nd at

11

11/11/11 W. Vermont St. A. Takacs

location SB06 in front of W side of Michigan St. Apartments. — at.

1410 Begin logging boring from SB06.

1515 Sample from 13-14 ft interval of SB06 — ab

- WVS-SB06-(13-14)-111111-SS — at

1525 Sample from 19-20 ft interval

- WVS-SB06-(19-20)-111111-SS — at

- WVS-SB06-(19-20)-111111-SS-DUP — at

1545 Attempted to take a grab GW sample from temp well placed at SB06 but dry. no sample taken — at

Samples handed over to lab w/ signed COC — at

1600 START Takacs off site — at

11/14/11 W. Vermont A. Takacs

0720 START Takacs arrives on-site on the west side of Holt Rd — AT

0745 START Coulter arrives on-site. Today Bloodhand airknife crew and Drillers will be on-site w/2 crews — AT

- 2 more locations 5 feet south of Rotosonic VAS-1 location will be added and cleared w/ airknife and then wells set — AT

- No results back from VAS-2 location but wells need to be set there as well. — AT

0800 Bloodhand arrives on-site & sets up near VAS-1 location furthest South on Holt. — AT

- Brett receives word from drillers that only one crew will be on-site today to drill at VAS-3 locations on W. Vermont — AT.

0830 Drillers arrive at VAS-1 location. Since casings are still in at this location they will need to set the well here before moving to the W. Vermont St. location — AT

AT.

11/14/11 W. Vermont A. Takacs

- Bloodhand crew is moved to VAS-2 to add 2 holes so that drillers can work at VAS-1 — AT

0930 First hole 5ft north of VAS-2 is cleared of utilities to 10ft — AT

- Crew begins working on 2nd hole 5ft N from the first — AT

1000 2nd well is completed to 7.5ft and cannot be advanced further due to large cobbles — AT.

- Dirt is dumped near holes but they are left open — AT.

- OSC Lam, START Takacs & Coulter & Mundell rep identify location on Michigan Ave on N side of road in front of residence 4012 — AT.

1030 Bloodhand crew mobilized to Michigan Ave location & begins first hole — AT.

1110 First hole is cleared of utilities to 10 feet. Second hole 5ft to the east of the first is started.

1145 Second hole is completed to 10ft clear of all utilities. Third hole is started 5 feet east of 2nd.

AT.

14

11/14/11 W. Vermont AT

12:00 Third hole is cleared of utilities
- START Takaco has crew place cones on holes while at lunch and she will purchase stakes so they can be cautioned off overnight — AT
- Crew breaks for lunch — AT
13:00 Bloodhound crew begins at first hole just north of VAS-1 — AT
13:40 First hole is cleared to 8ft. a rock is blocking a majority of the hole & the remainder is probed w/ auger to 10ft. this hole is clear
- Crew begins work on second hole 5ft north of first. — AT.
14:20 Crew completes 2nd hole at this location down to 10ft it is clear — AT
- mobilizes to SB-03 location on corner of Holt & Mich Ave (NW) and begin first hole approximately 20ft North SB-03 location & 10-15ft off the road.
15:55 First hole can only go down to 3-4ft & then limestone layer is hit. A second hole is attempted several feet west and south of the
AT

15

11/14/11 W. Vermont AT

first. Same concrete/limestone layer is hit at 3-4ft. Sewer line is lower so it should not be a utility.
- START Takaco discusses options w/ START Coulter, he says to attempt a third hole since a water rig won't be available until thursday — AT
- A third hole is attempted several feet North and east of the first hole — AT
16:30 Same hard layer is hit 3-4ft deep in third hole. START Takaco confirms w/ Coulter & he says Bloodhound is done for the day, leave the holes open. — AT.
- START Takaco relays message to bloodhound & they commence cleanup for the day — AT.
- START Takaco checks in w/ Coulter at W Vermont location — AT
17:00 START Takaco off site — AT

16

11/15/11 W. Vermont AT

0730 START Takacs on-site at VAS-2 on Holt Rd. No drilling on-site yet. —— AT

0745 START Takacs checks w/ Coulter, no 2nd rig is coming today — AT

0800 After checking in at W Vermont location START Takacs demobilized from site w/ authorization from R. Kirkland & Coulter —— AT

17

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Location Indianapolis, Indiana Date 11/16/11

Project / Client West Vermont Ave / US EPA

0630 START Colomb leaves Chicago office —"
1125 START Colomb arrives at corner of —"
- Michigan and Holt; meets with START Coulter
1145 START Colomb tows site —"
1205 well MW-WES-02D set w/ 4' of chips; remainder
- grouted to surface —"
1220 OSC Lawn arrives on site; drill crew —"
- breaks for lunch and to buy portland —"
1230 Drill crew begins drilling at location —"
— on north west corner of Holt and —"
michigan. —"
1320 Drill crew on Southwest corner of intersection —"
- arrives on site. —"
1330 Drilling begins at location MW-WES-02I —"
- Depth to 35-40 ft —"
1420 TD of 40' reached; bottom 10 feet sampled —"
35-38 Fine to ~~medium~~ coarse sand and gravel;
- light brown; wet; no odor; some cobbles.
38-40 Till —"
- screen will be set at ~~31-36~~ 38' —"
1455 Begin placing screens —"
1535 Screen slips and bends; pulled out —"
- and new one added. —"

4

Location Indianapolis, In Date 11/16/11

Project / Client West Vermont Av / US EPA

1640 well chipped and sealed with bentonite
- to 2' above sand

1650 Driller leaves site to go buy Portland
- cement for completion.

1735 Driller returns w/ Portland; begins
- completing well

1800 well completed; well monument will be
- installed tomorrow

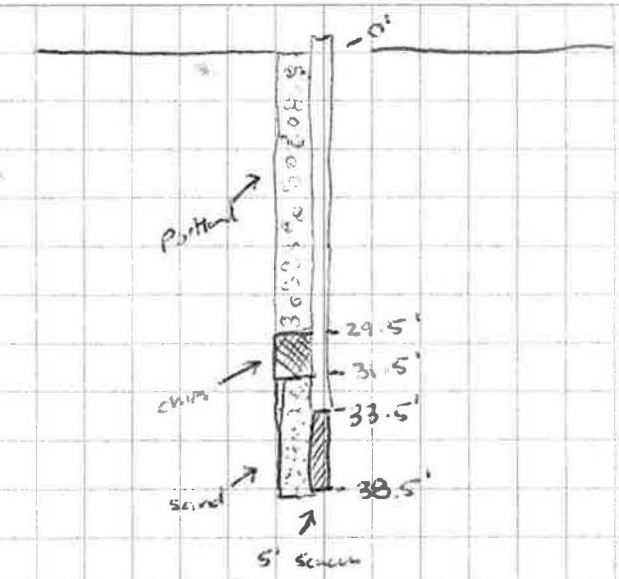
1835 All field personnel off site

5

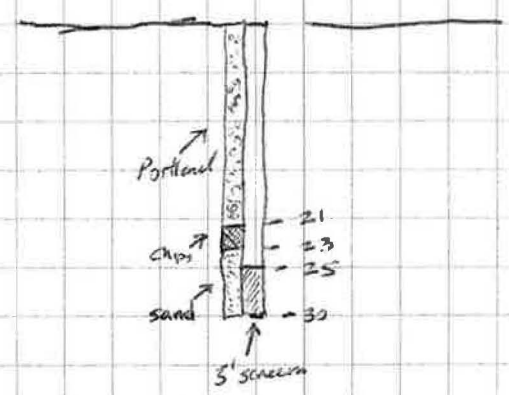
Location Date

Project / Client

well MW-WES-02I



well MW-WES-02S



Location Indianapolis, In Date 11/17/11

Project / Client West Vermont Ave / US EPA

Weather Approximately 33° F; clear and sunny — SC

0730 All field personnel on site, health and — SC

- safety tailgate conducted by START Colomb - SC

0745 Driller leaves site to get pipe cutter —

0830 Driller back on site; uses pipe cutter -

- to complete well casing at MW-WES-02I -

0840 water trailer refilled and staged near -

- location of MW-WES-02S —

0850 Begin drilling at MW-WES-02S —

0855 Piston breaks on drill; driller stops —

- work to replace it. —

1045 Begin drilling again at MW-WES-02S -

- to 30 feet; sampling the bottom 20-30 ft -

1145 Depth of 30 ft reached —

20-22.5 F→ Coarse sand and gravel; light brown

- saturated; no odor —

22.5-27.0 F→ coarse sand; gravel; some cobbles -

- light brown; saturated; no odor —

27.0-30.0 F→ coarse sand; gravel; light brown -

- wet; no odor —

1150 Break for lunch —

1230 Crew back on site; begin installing -

- monitoring well at MW-WES-02S —

Location Indianapolis, In Date 11/17/11

Project / Client West Vermont Ave / U.S. EPA

- to 21'; portland to top —

1325 Crew ~~to~~ relocates equipment to open —

- holes at MW-WES-01-I —

1400 Begin drilling at 01I to a depth of —

- 36' —

1427 Depth of 36' reached —

~~30~~ 25-30 Fine to medium to coarse sand; gravel —

- light brown; wet; no odor —

- 30-32 Fine to coarse sand w/ gravel; light -

- brown; saturated; no odor —

32-34 Safty Sand w/ gravel; light brown —

- saturated; no odor —

34-36 Clay fill —

1440 Begin installing monitoring well —

1530 Finish installing MW-WES-01I; crew -

- moves to MW-WES-01S. —

1605 Begin drilling at location to 29' —

1645 Depth of 29' reached; begin -

- installing monitoring well at location

1755 Complete well installation; begin clean up -

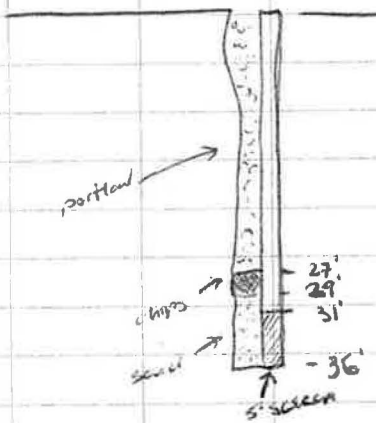
1835 All field personnel off site —

8

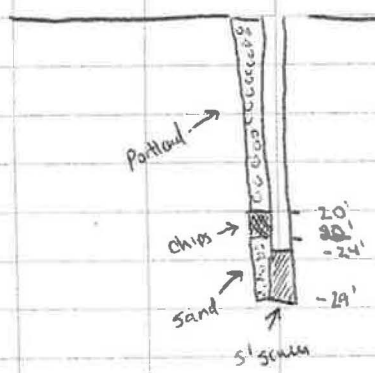
Location Indianapolis, In Date 11/17/11

Project / Client West Vermont Air / US EPA

MW-WES-011



MW-WES-015



Location Indianapolis, In Date 11/18/11

Project / Client West Vermont Air / US EPA

Weather: Approximately 27° F; clear and sunny

0730 START Columbia arrives on site

0740 Drilling crew arrives on site; health and safety tailgate meeting conducted

0750 Drillers begin cleaning up equipment and preparing to leave site.

0817 Drillers begins setting monuments on wells along Holt

0847 Begin developing well MW-WES-025

0909 Pump not functioning properly; developing stops

0925 Begin pumping again; water clears, surging

0940 Development done at MW-WES-025

0955 Begin developing at MW-WES-021

10.15 Pump breaks, new pump installed

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11-21-2011 W Vermont St Contam. Sena

0800 Arrived at the site at 4044 W Vermont Street and met with Scott Tarowski of WDC. weather: 45°F, calm, sprinkles. — DS

0805 WDC developing the upper aquifer in front of 4018 W Vermont. SWL about 85 feet, well depth ~~about~~ 30-35 feet. Using mini monsoon pump and surging well using pump periodically during ~~deve~~ pumping. — DS

0840 Finished development of upper aquifer well outside 4018 W Vermont. Removed approximately 50 gallons. Decontaminated pump. — DS

0845 WDC began developing deeper monitoring well outside 4018 W Vermont. — DS

0853 Well ran dry, approximately 20 gallons removed, surged with pump for about 5 minutes. — DS

0910 WDC began developing shallower well in front of 4012 Michigan Street. — DS

0933 WDC finished developing the shallower well. Decontaminated pump. Removed ~50 gal.

0940 WDC began developing deeper well in front of 4012 Michigan Street. — DS

1005 WDC finished developing deeper well, about 50 gallons removed. Deconned pump. — DS

1037 WDC set up on shallow well, 24 feet bgs at the NE corner of Michigan Street and

3

11-21-11 W Vermont Street Contam. Sena

Holt Road. — DS

1040 WDC began developing shallow well. Less than 5 feet of water believed to be in the well. — DS

1102 Finished developing the 24 ft well, removed about 50 gallons, deconned the pump — DS

1104 WDC began developing the intermediate, 37 ft well at the NE corner of Michigan St & Holt Rd. — DS

1120 Finished developing the 37 ft well, removed about 50 gallons, deconned the pump — DS

1123 WDC began developing the deep well, 50 ft, at the corner of Michigan St & Holt Rd. — DS

1155 Deeper well ran dry after removing about 30 gallons. Deconned pump. — DS

1220 WDC began pumping shallow well in southernmost well nest area on Holt Road. — DS

1250 WDC completed development, removed about 50 gallons. Will now go stage drums of purge water and purchase gravel. — DS

1400 Purchased pad locks and installed them on all 13 monitoring wells — DS

1500 WDC finished laying gravel in front of 4012 Michigan Street, flattening area on Holt Road with skid steer. — DS

4

11-21-11 W Vermont St Contam. Sena

1515 Demobilized from the Site. ——— DS

David Sena
11-21-11

5

12-06-11 W Vermont VOC Contamination Sena

0755 D. Sena, A. Schultze, and G. Roussos arrived at the Michigan Plaza site and met with OSC Lam. ——— DS

0800 Met with representatives from Arcadis, Mundell & Associates, and ENVIRON. ——— DS

0805 Conducted health and safety meeting. Weather is 34°F, cloudy, wind from NNE at 10 mph. ——— DS

0815 D. Sena paired with Andrew White of Mundell and Frank West from Environ. ——— DS

0830 Began opening each of Michigan Plaza's monitoring well lids & caps to allow for uniform equillibrium of wells ——— DS

1000 Finished opening all Michigan Plaza wells and began gauging. See gauging logs. ——— DS

1230 Gauged all wells on the south side of Michigan Street. ——— DS

1235 Took lunch ——— DS

1320 Began gauging ~~all~~ wells on the north side of Michigan Street. ——— DS

1445 Finished gauging wells on the north side of Michigan Street. Note: SWL meter was decontaminated using an alconox wash & distilled water rinse. SWL meter was deconed prior to initial use. ——— DS

1530 Began gauging the 13 U.S. EPA wells.

6

12-06-11 W. Vermont VOC Contam. Seng

DS after first opening and allowing to equilibriate for approximately 30 mins. See gauging logs for more information.

1635 Finished gauging U.S. EPA ~~logs~~ DS wells.

1500 Assisted G. Roussos team by gauging DS two wells on the Allision Transmission Property. — DS

1540 Demobilized from the site. — DS

David Seng
12-06-11

7

12-7-11 West Vermont Street VOC Contam. Seng

0745 D. Seng arrived at the M1 Plaza parking DS lot and met with A. Shultze & G. Roussos of Weston and S. Lam & J. Sewell of U.S. EPA. Weather: 1°C, sunny, calm. — DS

0755 Calibrated YSI Unit RFW25379 with pH 4, 7, and 10 buffer solutions. — DS

7 → 6.99 — DS

DS 4 → 4.00 — DS

10 → 9.99 — DS

All pH calibrations successful. — DS

0800 Calibrated YSI unit with 1000 µS/cm. — DS

DS solution: 1000 µS/cm → 998 µS/cm — DS

0805 Calibrated YSI unit with 225 ORP solution DS (1°C): 225 → 225.9. All calibrations — DS successful. — DS

0810 OSC gave morning health & safety DS meeting. — DS

0856 Began purging MW-174S, Frank West of ENVIRON DS shadowing & splitting sample. See sampling log

0950 Collected sample WVS-MW174S-120711-GW

1015 Began purging MW-174D, ENVIRON splitting. DS See sampling log. — DS

1050 collected sample WVS-MW174D-120711-GW

1150 Purging MW-145, see sampling log. — DS

~~18~~ DS 1220 collected ~~sample~~ WVS-MW145-120711-GW. — DS

8

12-7-11 West Vermont Street Sena

1258 Purging MW-148R. See Sampling log. — DS
1330 Collected sample WVS-MW148R-120711-GW.
1425 After dumping purge water at WWTP, purging
1455 MW-161. — DS
~~1500~~ DS Collected sample WVS-MW161-120711-GW
1500 Collected duplicate sample WVS-MW161-
DS 120711-GW-DP. — DS
~~176~~ DS 1600 Pace Analytical Services Courrier
DS arrived to pick up all samples collected
up to this point on 12-7-11. — DS
1645 Purging MW-170D. See sampling log. — DS
1725 Collected sample WVS-MW170D-120711-GW
DS ENVIRON collected split sample. — DS
1752 Purging MW-170S. See Sampling log.
1820 Collected sample ~~14~~ DS WVS-MW170S-120711-GW
1830 Demobilized from the site. — DS

David Sena
12-7-11

9

12-8-11 West Vermont Street Sena

0745 D. Sena arrived at the M1 Plaza parking lot
DS and met with G. Roussos & A. Schultze of Weston.
0750 J. Sewell of U.S. EPA, Nick Zurweller of
DS ENVIRON, and Tom Kolb of Arcadis arrived
at the M1 Plaza lot. — DS
0800 Conducted health and safety meeting.
0805 ~~Calib~~ DS Bump checked YSI Unit RFW25579
DS with pH 4, 7, and 10 buffer solutions.
All values within 10%. — DS
0830 Arrived at GM well nest MW-0524-S2
0845 Purging MW-0524-S2A. See sampling log.
0920 Collected sample WVS-MW0524S2A-120811-GW.
DS Nick Zurweller & Tom Kolb collected split.
1010 Purging MW-0524S2B. See Sampling log.
1105 Collected sample WVS-MW0524S2B-120811-GW.
DS Zurweller & Kolb collected split. — DS
1240 Purging MMW-P-13S. See Sampling log.
1345 Collected sample ~~WVS-MW~~ DS -MMWP13S-120811-GW
DS Zurweller collected split. — DS
1455 DS Purging MMW-P-13D. See Sampling log.
1455 Collected sample WVS-MMWP13D-120811-GW.
DS Zurweller collected split. — DS
1600 James Jones of Pace Analytical collected
DS Sena's and Schultze's samples. — DS
1634 Purging MMW-P-12S. See sampling log.
1705 Collected sample WVS-MMWP12S-120811-GW

10

12-8-11 West Vermont Street VOCs Sena

1728 ~~Zur~~ (DS) Purging mmw-P-12D. See Sam- ~~DS~~ pling log. —— DS

1805 Collected sample WVS-mmwP12D-120811-GW

1825 Departed from the site. —— DS

David Sena
12-8-11

11

12-9-11 West Vermont Street Contamination Sena

0735 D. Sena arrived at the M1 Plaza parking lot. Weather: 30°F, cloudy, wind from NW at 2 mph. Met with A. Schultze and G. Roussos of Weston. —— DS

~~DS~~ (DS) 0745 Calibrated YSI unit RFW25379 with pH standards 4, 7, and 10. All calibrations successful. —— DS

0755 Nick Zurweller of Arcadis and Jason ~~DS~~ Sewell of U.S. EPA arrived at the site. —— DS

0758 Conducted health & safety meeting. —— DS

0830 Arrived at mmw-1S in apartment ~~DS~~ complex north of M1 plaza lot. —— DS

0848 Purging mmw-1S. See sampling log. —— DS

0925 Collected sample WVS-mmw1S-120911-GW.

1008 Purging mmw-10S. See sampling log. —— DS

1045 Collected sample WVS-mmw10S-120911-GW.

1115 Purging mmw-9S. See sampling log.

1145 Collected sample WVS-mmw9S-120911-GW

1235 Purging mmw-11D, west well in nest. See ~~DS~~ sampling log. —— DS

1340 Collected WVS-mmw11D-120911-GW. Nick ~~DS~~ Zurweller of ENVIRON collected split. —— DS

1357 Purging mmw-11S, east well in nest. See ~~DS~~ sampling log. —— DS

1435 Collected sample WVS-mmw11S-120911-GW ~~Zurweller~~ (DS) —— DS

12-9-11 West Vermont Street Sena

1525 Purging mmw-P-05. See sampling log. —DS

1600 James Jones of Pace came to pick up Day's samples. All samples were placed onto one chain of custody because the team only had one trip blank. After each sample was collected, it was placed in D. Sena's single cooler with the trip blank. —DS

1605 Collected sample WVS-mmwP05-120911-GW ~~and~~

1608 Collected sample WVS-mmwP05-120911-GW-DP duplicate sample. —DS

1645 Purging ~~sample~~ well mmw-P-06. See Sampling log. —DS

1715 Collected sample WVS-mmwP06-120911-GW. —DS

1744 Purging well mmw-P-02. See Sampling log.

1810 Collected sample WVS-mmwP06-120911-GW

1830 Roussos will keep samples cold over the weekend and will keep equipment in van. —DS

1835 Demobilized for the weekend. —DS

David Sena
12-9-11

12-12-11 West Vermont Street Sena

0720 D. Sena arrived at the site, mi plaza lot, and met with G. Roussos and A. Schultze of Weston. Weather: 28°F, partly cloudy, wind calm. —DS

0725 Calibrated YSI meter RFW25379 with pH standards 7, 10, and 4. All calibrations successful. —DS

0735 Calibrated YSI with 225 ORP solution. Calibration successful. —DS

0745 Calibrated YSI with 4.49 mS/cm autocal solution. Calibration successful. —DS

0750 OSCs Lam and Sewell arrived at the Site

0755 OSC conducted a health and safety meeting. Traffic on Holt road major concern. —DS

0800 Frank West from ENVIRON arrived. —DS

0840 Purging MW-WES-02a (shallowest). See Sampling log. —DS

0910 Collected sample WVS-MWWES02a-121211-GW ENVIRON split sample. —DS

0942 Purging MW-WES-02b. See sampling log.

1025 Collected sample WVS-MWWES02b-121211-GW ENVIRON representative who had just replaced Frank West, Terry, split sample.

1058 Purging MW-WES-02c. See Sampling log.

1155 Collected sample WVS-~~WM~~ MWWES02c-121211-GW. ENVIRON collected split sample. —DS

1210 Dumped purge water at WWTP. —DS

14

12-12-11 West Vermont Street — Sena

1245 Arrived at 4031 Cossell Street. — DS

1315 Began purging well from spigot in basement prior to softener. — DS

~~1300~~ DS 1330 Collected sample [WVS-4031Cossel-121211-GW]. ENVIRON collected split sample. — DS

1333 ~~Colled~~ DS Collected duplicate sample [WVS-4031Cossell-121211-GW-DP] — DS

1350 Arrived at 4042 W Vermont. Home is abandoned & boarded up. OSC Cam observed the home's well was unlidded and the pump was removed. Requested START sample at that location. — DS

1410 Purging ~~A~~ DS well at 4042 W Vermont. See Sampling log. — DS

1525 Collected sample [WVS-4042WVermont-121211-GW]. ENVIRON collected sample, split. — DS

~~16~~ DS 1545 Pace arrived and picked up day's samples.

1615 Arrived at 4012 Cossell Street — DS

1655 Purging well, however, spigot located beyond air stripper system, could not bypass. — DS

1705 Collected sample [WVS-4012Cossell-121211-GW]. ENVIRON Collected a split sample. — DS

1745 Purging well at 4018 W Vermont from spigot prior to air stripper and carbon systems. — DS

1800 Collected sample [WVS-4018WVermont-121211-GW]. ENVIRON collected split sample. — DS

15

12-12-11 West Vermont VOC Contam. — Sena

1820 Gave my equipment and samples to G. Rousos. — DS

1845 Demobilized from the Site. — DS

David Sena 12-12-11

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12/8/11 West Vermont Street Roussos

0745 Arrived at Michigan Plaza with DS & AS. preformed bump check on YSi meter. —M

pH 7 → 7.41 Lot # 4104430 exp MAR 2015

pH 10 → 10.05 Lot # 4101717 exp July 2012

pH 4 → 4.51 Lot # 4102834 Exp Feb 2013

— pH 4 was out of range, it was calibrated along with pH 7. —M

0805 H&S briefing held by DS. —M

0815 departed Plaza to sample wells, refer to sampling data sheets for more information. —M

1140 pH readings seemed low on first well, full recalibration: —M

pH 4 → 2.86 lot # 4102834 exp Feb 2013

pH 7 → 6.60 lot # 4104430 exp. MAR 2013

pH 10 → 9.26 lot # 4101717 exp. July 2012

1200 took lunch —M

1230 resumed sampling activities —M

1815 departed from site —M

12/8/11

5

12/9/11 West Vermont Street Roussos

0750 Arrived at Michigan Plaza with DS & AS, calibrated YSi meter.

pH 10 → 10.07 lot # 9055 exp 6/24/12

pH 7 → 6.52 lot # 8977 exp 05/25/12

pH 4 → 4.38 lot # 9152 Exp. 8/9/12

0810 H&S briefing led by DS DWAS held. Chance of snow, stay dry. —M

0830 departed to wells to begin sampling. refer to log notes for more information.

1800 Packed the van with the team's equipment & all samples for the weekend. —M

1835 demobilized for the weekend —M

12/9/11

6

12/12/11 West Vermont Street Roussos

0740 Arrived at michigan plaza with
— AS & DS. Began calibration of YSI.
— pH 4 -> 4.38 Lot 9152 Exp 8/1/12
— pH 7 -> 7.20 Lot 8977 Exp 5/25/12
— pH 10 -> 8.85 Lot 9055 exp. 6/24/12
— Orp (225) -> 229.5 Lot 115100217 exp. 09/2013
— conductivity 449 lot 9298 Exp 11/11/12
0800 H&S briefing held by OSC Lam, traffic
— on Holt road — Use cones / signs. —
0820 Departed to wells to begin sampling
— for the day. —
— Refer to sampling data sheet for more
— information. —
1015 Collected samples from AS & DS,
— transferred some equipment to AS.
1030 demobilized from site. —

12/12/11

7

12/13/11 West Vermont Street Roussos

1430 Arrived at West Vermont Street
— with Randy Kirkland. —
1435 identified well MW-WES032 &
— prepared for sampling. Refer to
— sampling data sheet for more info
1600 Arrived at waste water treatment
— plant to assist RK in taking composit
— samples for waste characterization. —
2000 43 liquid drums present, 11 ~~liquid~~
— solid soil drums, & 1 PPE drum present.
— Composit samples were taken, Keith
— takes to deliver to lab. —
2030 Departed from site —

12/13/11

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12/08/11

0740 - Arrive at Michigan Plaza - Alex Schultz (Weston)

0748 - Begin to pump check YSI meter, fluids and meter are the same as 12/07/11

pH bump check

7.0 reads as 6.90

10.0 reads as 10.01

4.0 reads as 4.0

Conductivity bump - not enough conductivity fluid to get a reading

* See field logs for all information

5

12/09/11

0745 - Arrive at Michigan Plaza, Alex Schultz (Weston)

0758 - Begin bump check of YSI meter

SN = ~~[illegible]~~ 04M1481AD

- pH bump check

7.0 at 7.07, lot #8477, exp = 5/25/12

~~7.0~~ 4.0 at 3.97, lot # 9152, exp = 8/9/12

10.0 at 9.22, lot # 9055, exp = ~~[illegible]~~ 6/24/12

- 10.0 cal not with 7.0 cal

0810 - Begin to calibrate

7.0 set at 6.65

4.0 set at 4.22

10. set at 10.24

0830

1150 - go to home to pick up gloves

1205 lunch

1225 - Arrive back at Michigan Plaza and resume sampling

* See field logs for all information

6 [illegible]

0740 - Alex Schultze (Western) arrives at Michigan Plaza

0752 - Calibration of YSI meter

s/n = 04M1481 AD

- Cal solution

7.00 = batch # 8977 . exp: 5/25/12

4.00 = batch # 9055 . exp = 6/24/12

10.0 = batch # 9152 . exp = 8/9/12

- 7.00 set at 7.24
- 4.0 set at 4.0
- 10.0 set at 9.97

- ORP = 225 set at 222.2

lot # 15100217 , exp 9/13

- conductivity 4.44 mS/cm set at ~~[illegible]~~ 4485 mg/cm

See field logs for all information

7

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PAGE	REFERENCE	DATE
	Ken - Pace Analytical (317) 875-5894	
	Christina - Bloodhound Utilities (317) 716-7055	
	Dan Harrison - WDC (317) 872 1203 (office) (317) 964-3636 cell	

OSC - Lam

W. Vermont St. Cloudy 60's b. Coulter
11-8-11

0745 Arrive onsite b. Coulter Weston START. WDC (Drillers) on site. ——— BC

0800 Conduct breifing with ~~up~~ BC US EPA and PRP Consultants, Drillers. Bloodhound (utilities locators) not yet on site.

The following personel were onsite for the briefing:

Brett Coulter - START
Shelly Lam - OSC
Justin Mino - WDC
Russ Gordon - WDC
Sarah Johnson - IDEM
Sarah Fisher - Arcadis
Andrew Gremos - Environ
Sarah Webb - Mundell
Andy Dammeyer - Mundell
Frank West - Environ
Dwayne Ware* - Blood Hound (~~Arrive~~ BC

* Arrived after briefing. ——— BC

8:20 Bloodhound onsite. Discuss locating Sow and areas. ——— BC

Brett Coulter 11-8-11

W. Vermont St OSC - LAM
11-8-11 Cloudy 60's b. Coulter

8:25 Take Drillers around to VAS locations and discuss Sow for Roto Sonic and Geoprobe. ——— BC

8:55 Blood hound has all personel on site. Nick & Dwayne from bloodhound prepare to mark locations of utilities. ——— BC

9:20 Go with Nick (blood hound) to mark VAS locations so they can be Cleared. ——— BC

1005 Everyone leaves site except for Blood hound and OSC LAM. ——— BC

OSC LAM wants to have two newly installed wells on the Michigan Plaza site added to Sampling list. ——— BC

Wells are thought to be MMP-5-14? and MMP-5-15?

Bloodhound begins Clearing locations on Holt Rd w/ Air Knife. ——— BC

1020 Pic 1. Brett Coulter 11-8-11

4 W. Vermont St. OSC - LAm

11-8-11 Cloudy 60's b. Coulter

11:15 811 utilities arrives on site. We discuss locations for Clearance.

1130 Blood hound Continues working On Clearing 1st location on Holt Street with Air Knife. - BC

1140 Talk to OSC Lam, She also wants to clear locations in front of apartments with air knife. — BC

1150 Call Randy K. (weston) and get him to Set up PO for add'l work w/ bloodhound.

1205 Talk to Bloodhound about additional locations w/ air knife.

1215 Leave for lunch. — BC

1230 Return to Site. — BC

1250 Shelly Lam (OSC) and I go and mark out Several of the Geoprobe locations and the OSC addresses some potential access issues since the Sanitary is so far onto the Apartments property. — BC

1340 OSC and START Coulter go

— Brett W. Coulter 11-8-11

W. Vermont St. OSC: LAm 5

11-8-11 Cloudy 60's↑ b. Coulter

to the WWTP and meet with the plant Superintendant and view the Staging location.

1440 Go over additional air Knife locations with Blood-hound. — BC

1550 Blood Hound Continues to Air Knife locations. — BC

1700 Blood Hound Completes a total of 4 locations for drilling/GeoProbe (2/2).

1720 b. Coulter offsite; S. LAm off Site. — BC

Brett W. Coulter

Rite in the Rain

11-9-11 Cloudy/Rain 50° b.Coulter

0750 b. Coulter START on site. Bloodhound on site @ Michigan Plaza. They go to Setup Signage and begin Air Knife work. —— BC

0800 Move to first VAS Location. WES-VAS-1. About 600+' South of W. Michigan on the West Side of Holt Rd. —— BC

820 Drillers Set up Signage for traffic Control.

0840 Take drillers to WWTP where they can Setup decon pad and Staging area. —— BC

0900 Complete H&S briefing with drillers and mob back to WES-VAS-1 location. —— BC
Location will be designated WVS-01-~~VAS~~ BC 110911-VAS-(depth).

0925 Drillers are Still waiting on a bobcat to be delivered to the Site before they can begin. —— BC
b.Coulter goes and helps
—— B. Coulter 11-9-11

11-9-11 Cloudy 50's b.Coulter

Blood hound locate drilling and Geoprobe locations. —— BC

1045 Bobcat arrives from rental Company. —— BC
Drillers begin Setting up to Drill. —— BC

1140 Get Samples down to 20 feet. —— BC

1220 Leave Site for Lunch.

1310 Return to Site. —— BC

1335 Set First temp well at WVS-110911-VAS01-(25'-30') from 25'-30'. —— BC

1445 Begin purging 25'-30' VAS interval. QSI Parameters

Initial:	0min	5min	10min
Temp	16.40°C	16.17	16.19
Conductivity	1282 uS/cm³	1265	1269
DO	1.53 mg/L	1.33	1.30
PH	7.98	8.14	8.15

1510 Collect 25'-30' VAS Sample. @ WVS-110911-VAS01 location.

1530 Continue drilling. —— BC

B. Coulter 11-9-11.

Rain on the Rain

8 W. Vermont St. OSC - Lam

11-09-11 Cloudy 40s b. Coulter

1550 Will Set temp well @ 32.5'-37.5' (above till), 5" Screens, 10-Slot PVC. — BC

1615 begin purging 32.5'-37.5' Zone.

1630 YSI Readings:

	Initial	10min.	20 min.	25 min
Temp	15.33	15.33	15.27	15.33
Cond	2926	2877	2916	2927
DO	2.52	1.50	0.99	0.76
PH	8.00	8.11	8.20	8.21

1655 Collect WVS-110911-VAS01-(32.5-37.5') Sample. — BC

Collection time 1700 — BC

1700 Drillers pack up and Secure equipment. Leave Site. — BC

1710 Go and meet with utilities (811) on north side of W. Michigan, west of Holt Rd.

1730 Leave Site — BC

Brett Coulter 11-09-11

W. Vermont St OSC - Lam 9

11-10-11 Sunny ↓ 30's b. Coulter

0720 Stop by Lowes on way to the site for some supplies. — BC

0740 Arrive on site. — BC

0750 Drillers arrive on site. They begin warming up equipment.

0810 Conduct H&S Briefing w/ drillers.

0820 Drillers begin to drill the 40'-50' interval. — BC

0840 Picture 2 - Drillers @ VAS-01 location ≈ 50'. — BC

0848 Log the 40'-45' depth interval. till is very Stiff, Slow drilling.

0920 Set temp well at 41'-46' bgs.

0930 Begin purging 41'-46' Interval. ≈ 20 gallons of water used during drilling of this interval. Will remove ≈ 30 gallons prior to Sampling.

945 YSI Readings

	Initial	5 min	10 min	20 min
Temp	16.73	16.50	16.15	16.16
Cond	891	892	894	896
DO	1.69	1.58	1.15	1.16
PH	8.85	8.86	8.90	8.91

Brett Coulter 11-10-11

11-10-11 Sunny 30's B Coulter

1000 Collect VAS Sample #3 at VAS-01 Location. — BC

WVS-111011-VAS01-(41-46) and duplicate Sample (Dup). — BC

Will Contine down another 10 feet to 60' bgs. — BC

1055 Remove the 50-60 bgs interval.

1130 Begin Setting temp well at 50'-55'. — BC

1130 Removed ≈ 60 gallons from interval. Use WQ Parameters:

	Initial	5 min	10 min	20 min.
Temp	16.79	16.61	16.55	16.53
Cond.	912	913	912	911
DO	0.51	0.48	0.45	0.46
Ph	8.91	8.93	8.91	8.91

1150 Collect VAS01-04 Sample from 50'-55' Interval. — BC

1230 Leave Site for lunch. Picture 3 - Geoprobe BC

1310 Arrive onsite Check Geoprobe Status. They are at lunch.

1330 Drillers Continue down to Collect the 60'-65' and 65'-70' intervals. — BC

Brett W. Coulter 11-10-11

11-10-11 Cloudy 40 B. Coulter

1350 Drillers Remove the 60'-65' Interval.

1415 Drillers remove the 65'-70' Interval.

1435 " " " 70'-75' Interval

Continue drilling. — BC

1515 Reach 78', hit Shale bedrock @ 77.5, get refusal @ 78'. Will leave tooling in hole and move to next VAS location on Holt St. to the North ≈ 400'. — BC

1530 Drillers are directed to leave the rod in the hole at VAS01. Will get results back and determine MW depth/s. — BC

1600 Drillers Setting up at VAS-02 location. — BC

1625 Remove 10'-13' Interval. — BC

1640 Remove 13'-15' Interval. — BC

1700 Remove 15'-20' Interval — BC

1730 Remove 20'-25' Interval — BC

1735 " 25'-30' " — BC

Go Check w/ Geoprobe and Amanda. Help them Clean up. — BC

18:20 Leave Site — BC

Brett W. Coulter 11-10-11 Left in the Rain

W. Vermont St. OSC-Lam

11-11-11 Cold, Clear 20's↑ B. Coulter

0730 B. Coulter onsite. OSC Lam onsite.

0735 WDC drillers on site. —— BC

Prepare to set temp well from 25'-30' bgs. —— BC

0800 Go and mark additional geoprobe locations w/ OSC.

0835 YSI Readings for 28'-30' VAS02-01 Interval. —— BC

	Initial	5min	10min	20min
Temp	15.86 °C	15.90	16.09	16.10
Cond	1717 µS/cm	1709	1706	1705
DO	1.31 mg/L	1.10	0.89	0.86
PH	8.04	8.08	8.04	8.04

0855 Collect ~~WVAS-BC~~ —— BC

WVS-VAS02-11111-(25'-30') and

WVS-VAS02-11111-(25'-30') ms/msD —

QC Sample for Lab. —— BC

0910 Drillers Continue drilling after removing temp well. —— BC

0940 Set temp well @ 35'-40'. —— BC

	5min	10min	20min
Temp	15.82	15.90	15.91
Cond	1407	1401	1400
DO	0.63	0.63	0.62
PH	8.44	8.45	8.45

—— Brett W. Cone 11-11-11 ——

W. Vermont St OSC-LAM

11-11-11 Cold 30° B. Coulter

1020 Drillers Continue drilling. —— BC

1040 Drillers Hit a large cobble and only can drill to 42' (40')

VAS01 32.5-37.5 VC = 60.1 ppb
41'-46' VC = 40.9 ppb.
41'-46 Dup VC = 36.4 ppb
50'-55' VC = 32.4 ppb
Verbal Results from Lab 11:20
VAS 25'-30' - ND

11:10 Set temp well @ 45'-50'.

WQ Parameters

	~~Initial~~ 5min	10min	20min	20min
Temp	17.30	17.28	17.32	X
Cond	973	975	973	X
DO	0.43	0.41	0.38	X
PH	8.64	8.65	8.66	X

Initial reading was not obtained.

1150 Collect the 45-50 depth Sample from VAS02. —— BC

1210 Check on Geoprobe progress.

1220 Leave for lunch. —— BC

1245 Return to site. —— BC

1300 Drillers onsite. —— BC

Continue drilling. —— BC

—— Brett Cone 11-11-11

W. Vermont St. OSC-LAM

11-11-11 Cloudy 40's. B. Coulter

1345 Drillers remove the 50-55 & 55'-60' depth intervals from the VAS02 location. —BC

1350 Chuck Goodwin (Environ) onsite.

1420 Depth 50-60 SAME - Till from 50'-59', 59'-60' is Grey silt. ~~60-75 is~~ BC

1500 Remove 60-75, Till, Silty-Clay w/ Little f-m gravel, Dense, Med-High Plasticity.

1510 Help Amanda w/ Geoprobe.

1530 Pace picks up Samples

1600 B. Coulter offsite. —BC

Brett Coulter 11-11-11

W. Vermont St OSC-LAM

11-14-11 Cloudy Rain, 60° B. Coulter

0730 Arrive at Site. Amanda Tackas (Weston) onsite. —BC

Waiting on Drillers & Bloodhound.

0800 Bloodhound onsite, get them set up. Amanda will direct Bloodhound. —BC

0830 Bloodhound sets up to Clear two(2) additional locations —BC at VAS02 for well installation.

0900 Drillers are setting up at VAS01 location and will set the well in the VAS01 hole from 50-55' bgs w/ Stainless Steel Screen and Steel riser. —BC

0940 All VAS locations were drilled w/ Dual Casing Roto Sonic. The Outer Casing is left in place to Seal the Connection between formations and to stop any potential x-Communication of Contaminated water. —BC

Brett Coulter 11-14-11

W. Vermont St. OSC-LAM

11-14-11 Cloudy 60° b. Coulter

01000 WDC Continues setting well. — BC

Pace Lab Results

VAS02 25'-30' - Cis 1,2-DCE - 6.7 ug/L

35'-40' - VC - 23.0 ug/L ~~ppb~~ BC

45'-50' - VC - 5.5 ug/L ~~ppb~~ BC

SB-05-Water Cis-1,2-DCE - 5.8 ug/L

PCE - 9.7 ug/L

(Dup - Will Run) - 7.8 ug/L PCE

1130 Drillers Complete Setting VAS02 - 50'-55' interval.

MW-WES-01D — BC

1150 Drillers move equip. to VAS03 location on W. Vermont Street. — BC

1210 Leave for lunch. — BC

1245 Return to Site. Drillers are preparing to Drill VAS03. — BC

1320 Drillers Remove 0'-12' interval, @ VAS03. — BC

Brian Cole 11-14-11

W. Vermont St. OSC-LAM

11-14-11 Cloudy, Windy, Lt. Rain 60° b Coulter

1430 Continue drilling. Progress is slow due to V. Stiff till. — BC

1440 Remove the 20'-25' and 25'-30' Cores from VAS03. — BC

1510 Set temp well at 30'-35' bgs. Purge 55 gals prior to Connecting YSI. — BC

	Initial	5min.	15min	20min.
Temp	1640	1627	16.25	16.25
Cond	1557	1559	1557	1557
DO	1.37	0.90	0.75	0.69
PH	8.10	8.32	8.40	8.41

1615 Collect VAS03 @ 30'-35'. — BC Lab will come for Sample in the morning. — BC

1700 Set temp well from 40'-45' bgs and remove 60 gallons

	Initial	5min	15min	20min	25
Temp	15.59	15.51	15.64	15.85	15.91
Cond	946	945	944	944	942
DO	2.08	1.43	1.06	0.86	0.80
PH	8.16	8.17	8.30	8.35	8.35

1730 Collect 40'-45' bgs sample at VAS03.

Brian Cole 11-14-11

W. Vermont St. OSC-LAM

11-14-11 Cloudy 60's D. Coulter

1755 D. Coulter and drillers offsite.

11-14-11

W. Vermont St. OSC-LAM

11-15-11 Cloudy ↑40's D. Coulter

0730 D. Coulter onsite, Drillers on site. —BC

Drillers continue drilling.

0810 OSC LAM on-site —BC

~~0e~~ Go over site Status —BC with OSC. —BC

0830 Contact Lab to See if I Can get an early pickup.

0835 Talk to drillers Scheduler @ WDC to try and get a Second rig onsite. —BC

0839 Calibrate MultiRae, readings: 100 ppm Iso; 25 H_2S, 20.9 O_2, LEL = 24, All readings within normal Parameters. Each day MultiRae has calibrated with the Same readings. —BC

0900 Drillers Remove the 65'-68' Interval. —BC

0950 Remove 70'-75' Interval. —BC Will Set a well from 40'-45' bgs. —BC

11-15-11.

Rite in the Rain

11-15-11 Cloudy ↑40's b. Coulter

0950 Picture 3 - Drilling at VAS03. BC

0951 Picture 4 - VAS03, Core Samples from 60'-68' bgs BC

0952 Picture 5 - VAS03 Core Samples from 68'-75'. Sluff and blow-back from drilling resulted in additional material.

40'-45' Screened
75'-49' - bentonite
49'-37' - Sand
37'-35' - bentoninte
35-0' - grout

Flush mount well BC

1100 Drillers Continue well install, by grouting from 35' up to GS.

1130 Drillers Complete grouting of well. BC

1150 Leave Site for lunch. BC

1220 Return to Site. BC

1230 Drillers return to site BC

Prepare to Drill @ VAS04 location. BC

1430 Drillers remove 10'-15' and 15'-20' Cores

Brett W. Coulter 11-15-11

11-15-11 Cloudy ↑50's b. Coulter

1515 Remove 20'-25' core.

1525 " 25'-30' Core.

Set temp well @ 25'-30'.

1610 Remove ≈120 gallons from 25'-30' Zone prior to Connecting VAS. BC

Groundwater Parameters

	Initial	5min	10min	20min.	25min
Temp	15.24	14.89	14.87	14.88	14.86
Cond.	808	812	815	816	816
DO	3.21	1.94	1.62	1.44	1.39
PH	7.30	7.46	7.55	7.64	7.65

1635 Collect 25'-30' VAS Sample. Continue to 40' bgs. BC

1725 Remove 30-35 & 35'-40' Cores. BC

1740 Remove 40-45 and 45'-50' Core. BC

Set temp well from 39'-44' bgs. Will let it sit overnight.

1750 Drillers offsite, OSC offsite.

1805 b. Coulter offsite BC

Brett W. Coulter 11-15-11

11-16-11 Cloudy 40s b. Coulter

0730 b. Coulter on site, drillers on site.

0745 begin purging the 39-44' VAS Interval. BC

The well was set last night.

	Initial (5min)	10 min	15 min	20 min
Temp	14.58	14.55	14.57	14.58
Cond	803	802	802	802
DO	1.90	1.11	0.80	0.79
Ph	8.73	8.70	8.65	8.64

0830 Collect 39-44' VAS Sample.

0840 Collect RB (Pump blank) Sample following decon of pump after the collection of the 39'-44' VAS Sample from VAS04. BC

SAMPLE ID - WVS-VAS04-111611-FB. BC

0850 Collect Sample of water used for drilling (city water) WVS-111611-DW - SAMPLE ID. - BC

Continue drilling to 60' bgs.

Picture 6 (08:45) - Drilling at the WDC Location, VAS04.

Brett Cole 11-16-11

11-16-11 Cloudy 40 b. Coulter

0920 Remove the 50'-60' Interval.

0940 Well Construction for deep well at VAS02 -

Chips from 70-53

Sand from 53 to 42

Chips from 42 to 40

Grout from 40 to 65

Screen @ 50'-45' bgs with S.S Screen and riser. BC

Well NAME: MW-WES-02D

0955 LAB Results - Verbal from Pace

VAS03	30-35	VC	6.3
VAS03	40-45	VC	ND

1000 Remove the 60'-70' Interval. B.O.B. @ 70'. Drillers Clean up and prepare to move to next location VAS05. BC

1130 Drillers finish moving and setting up at VAS05, on the NW Corner of Holt and W. Michigan. BC

1135 Drillers leave site for lunch.

1137 Jon Columb (Weston) on site.

Brett Cole 11-16-11.

W. Vermont St. OSC-LAM
11-16-11 P. Sunny 40's B. Coulter

1155 B. Coulter off site for lunch.
1225 B. Coulter on-site. S. Lam
OSC onsite. —BC
Drillers Continue drilling @ VAS05. —BC
1330 Set temp well @ 20'-25' bgs @ VAS05 location —BC
Will purge a minimum of 30 gals
Water Quality Parameters (YSI) -

	Initial (5min)	10 min	15 min	20 min	25 min
Temp	17.74	17.55	17.42	17.37	17.41
Cond	1918	1937	1944	1950	1955
DO	1.80	1.12	1.01	0.84	0.82
PH	8.05	8.12	8.12	8.12	8.12

1410 Collect 20'-25' VAS interval. —BC
Continue drilling to 40'. —BC
1430 Set temp well from 32.5'-37.5', will remove at least 50 gallons prior to low-flow. —BC
1440 Water Quality Parameters —

	Initial	5min	10min	15min	20min
Temp	16.61	16.63	16.61	15.94	15.92
Cond	1320	1326	1333	1360	1357
DO	1.01	0.80	0.63	0.54	0.57
PH	8.54	8.57	8.53	8.35	8.39

Brett W. Coulter 11-16-11

W. Vermont St. OSC-LAM
11-16-11 P. Sunny 50's B. Coulter

1530 Drill down to 40'-50'. —BC
1545 Set temp well at 45'-50' bgs in VAS05 location. —BC
Will remove ~ 30 gallons. Driller used very little water. —BC
1548 YSI Readings —BC

	Initial	5m.	10m	15m	~~20m.~~ BC
Temp	15.78	15.78	15.76	15.74	
Cond	1518	1519	1518	1517	
DO	0.33	0.33	0.33	0.33	
PH	8.52	8.51	8.50	8.49	

1610 Collect the 45'-50' Sample. —BC
1700 Remove the 50'-60' interval
1725 " " 60'-70' interval.
Will Set a temp well to 68' (63'-68') in the Morning. Drillers will decon then Set the well in the morning due to the fading light and drilling near to the busy road.
1740 B. Coulter offsite. —BC

Brett W. Coulter
11-16-11

Rain on the Rain

W. Vermont St. OSC - Cam
11-17-11 Clear 30's b. Coulter

0725 b. Coulter onsite, drillers onsite, Preparing to Place temp well from 63'-68' bgs @ VAS05. —BC

Will purge ≈ 35 gallons prior to connecting YSI. —BC

YSI / WQ parameters.

	Initial (15min)	5min	10min	20min
Temp	14.82 °C	14.78	14.86	14.91
Cond	518 mS/cm	518	519	519
DO	0.90 mg/L	0.86	0.79	0.73
PH	9.30	9.27	9.23	9.19

0825 Collect the 63-68' bgs interval from VAS05. —BC

0900 Remove the 68'-73' Interval.

0910 " " 73'-75' "

0930 Drillers Clean up at VAS05 location. —BC

0935 Call lab to See if VAS04 results are ready. —BC

Still waiting on VAS04 results. Drillers are Cleaning up and Preparing to Set well. Also Changing Some parts on the rig. —BC

Brian Cam 11-17-11

W. Vermont St. OSC - Cam
11-17-11 Clear 30's b. Coulter

1030 Pace Analytical Results - Verbal

VAS04 -	25'-30'	ND
	39'-44'	ND
	39-44' Dup	ND
VAS05 -	20-25	ND
	32.5-37.5	ND
	45-50	ND

1040 Drillers begin installing the well at VAS04 from 38'-43' (MW-WES-04I). Second well will be from 24-29 (MW-WES-04S) ~~No~~ BC a deeper Saturated Zone wasn't encountered here (at VAS04) so a deep well will not be installed.

1150 Drillers leave to get portland and lunch. —BC

12:15 b. Coulter off site for lunch. —BC

1300 b. Coulter on site, Drillers on site. —BC

Drillers Setting well, grouting.

Brian Cam 11-17-11

11-17-11 Sunny 40 b. Coulter

1320 Drillers Completed VAS04 (mw-WES-04D
Set Screen @ 38-43
Sand @ 43-36
bentonite @ 36-32
Grout @ 32 - Ground Surface

1540 Drillers Setting VAS04 (mw-WES-04I.
Set Screen @ 30-35
Sand @ 28-35
bent @ 25-28
Grout @ 25 to G.S.

1610 Drillers move equipment to VAS03 location.

1630 Drillers begin decon of rods. BC

1655 Begin Setting the VAS03 (mw-WES-03Ia) to Monitor well. BC

1705 Picture 6 - Drillers installing monitor well at VAS03 location. BC

1805 Drillers complete the Shallow well @ VAS03 location.

1820 b. Coulter off site

Brian W. Coulter 11-17-11

11-18-11 Sunny 30° b. Coulter

0725 b. Coulter onsite. Drillers moving equipment to the VAS05 location from VAS03. Will Set Shallow location from 20-25, Int. @ 32.5-37.5 and deep from 45-50

0830 Drillers Continue working on placing pads and drilling down to 25'.
20-25 Screen
25-18 Sand
18-16 Bentonite
16-GS Grout

0930 Drillers begin Setting the Intermediate depth @ VAS05.
32.5-37.5 Screen
37.5-30 Sand
30-28 bentonite
28-GS - Grout

1115 Driller Complete the deepest well at the VAS05 location. BC

Brian W. Coulter 11-18-11.

Rite in the Rain

W. Vermont St. OSC-LAM

11-18-11 Sunny 40's b. Coulter

1210 Drillers Set VA505 deep well @ 50-45 Screen

50-43 Sand

43-41 Bentonite

41-GS - Grout

1245 b. Coulter off Site for lunch. —BC

1310 b. Coulter on Site. —BC

1420 Drillers Continue to Cleanup and Set pads and monitor well Covers.

1600 b. Coulter off Site —BC

Brett W. Coulter 11-18-11

Rite in the Rain