Appendix I

Excavation Geologist Field Notes

PROJECT NFSS BOF Field Invest. (Mobilization)

Notebook No. —

Continued From Page —

WRS: [redacted] (personal vehicle) (personal vehicle) (personal vehicle) (rental SUV)

USACE: [redacted]

Wx: Overcast, 34°F, occasional snow showers, slight breeze

07:55 Arrived at NFSS site, waited for [redacted] to let us in the gate. [redacted] gave us 2 remotes for main gate. He said that there is a security system that must be disarmed in the morning and rearmed at night (by a USACE person).

* We start offloading supplies into Bldg. 429 and a Conex Box west of Bldg. 42[illegible]

→ After further discussions with [redacted] → he wants us off site before 6:00 PM

We can start at ~ 7:00 AM.

10:00 Went out and checked/relabelled/flagged IE1 → IE7.

Continued on Page

Read and Understood By

[redacted] 11-5-2012

Signed Date Signed Date

10:30 Checked inside of valve house, there is ~18"-2' of water inside concrete vault; only 1 valve near steps is accessible, other (blue) valves are under water. Bees are no longer a problem due to colder temps.

[redacted] said (USACE) they have never tried to open or closed any of the valves and they have sat for ~30 years unexercised (some may be cracked); it is unlikely the valves will budge.

11:30 Checked location PE2, few inches of puddled standing water near stake. Water Valve on north side of fence reads "OPEN". I'll ask [redacted] if he can turn valve to "CLOSED" when he attachs wire to valve for geophysical survey. There is a large Masterlock on the valve box that will probably need to be cut off to manipulate valve.

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Read and Understood By

[redacted] 11-5-2012

Signed Date Signed Date

12:15-13:15 LUNCH (in Lewiston)

13:15-14:30 Discussed Radiation screening & decon procedures with [redacted]

14:30 Left site to return to Buffalo URS Office to pickup rental equipment and supplies deliveries.

[redacted]

Continued on Page

Read and Understood By

[redacted] 11-5-2012

Signed Date Signed Date

~~10:30 Checked inside of valve house at south end of~~ [redacted]

personal vehicle personal vehicle personal vehicle

URS: [redacted]

USACE: [redacted]

Wx: Overcast, 30°F, breezy

07:30 [redacted] and [redacted] arrived onsite, offloaded equipment to Conex box and into Bldg. 429.

Field checked rental equipment received from Pine Environmental: MultiRAE Plus appeared to operate O.K. (we won't receive CAL GAS until today); Peristaltic Pump did not operate properly → appears to be a cord problem. Notified Pine Env. of problem → they'll get back to me.

09:45 Spoke with [redacted] by phone →

Continued on Page

Read and Understood By

[redacted]

11-6-2012

Signed Date Signed Date

→ he indicated that FSP does not say we have to use "GPS-enabled camera", but it does say we will record GPS locations of each photo taken (direction photo taken; 2 relocatable features in each photo; etc.).

10:15 [redacted] said we could use any of the poly tanks (onsite) that are onsite for Decon Water/IDW water storage.

10:45 [redacted] will try to assist us with hooking up a wire to the water valve on the WM side of the fence at PE2.

[redacted] used my grinder with cutting wheel to remove lock from valve and turned valve in closed ("SHUT") direction until "OPEN" disappeared and valve would turn no further in closure direction. He then clean a spot with wire brush on valve housing to expose bare metal & attached a copper lead wire to valve housing and passed wire through fence at oblique angle to anticipated water line direction.

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Read and Understood By

[redacted] 11-6-2012

Signed Date Signed Date

11:15 Went to MH41 and checked for manhole lid with metal detector. Got hits at 3 locations; staked locations. We'll come back later with shovels to check locations that were staked.

12:00-13:00 LUNCH

13:00 [redacted] will start gamma surveys of proposed well locations at south end of landfill cell (IWCS); [redacted] will accompany them. [redacted] will access valve bldg. at SE corner of landfill cell and wire brush valve handle to prepare for tomorrow's geophysical survey.

14:00 Spoke with Pine Env., they

Continued on Page

Read and Understood By

[redacted] 11-6-2012

Signed Date Signed Date

will overnight a new cord for the peristaltic pump and a 2nd MultiRAE Plus

CONFINED SPACE ENTRY — URS & USACE CSE Forms completed

14:15 Performed air Monitoring with MultiRAE Plus in valve house (pit) → no CO/H_2S/PID/LE readings above "0", 20.9% O_2 for all readings inside valve house. Connected a copper wire to valve handle nearest to door (after wire brushing valve handle → handle metal did not clean up well, appeared to be greenish painted → possibly brass?)

Did not have to actually enter valve house, just reached inside door to reach valve handle (but was still treated as a CONFINED SPACE ENTRY)

* Pipe exiting to NE from valve house appeared to be more like 18" ø. There is what appears to be a ~10" ø cast iron pipe coming out north side of valve house, but it is broken off inside valve house.

15:15 Went back to Bldg. 429 to receive radiation training from [redacted]

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Read and Understood By

[redacted] 11-6-2012

Signed Date Signed Date

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PROJECT NFSS BOP Field Invest. (Mobilization)

Notebook No.

Continued From Page 7

17:15 Left site for the day.

[redacted]

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Read and Understood By

[redacted] 11-6-2012

Signed Date Signed Date

PROJECT NFSS Bop Field Invest. (Geophysical Survey)

Notebook No. _____

Continued From Page —

URS: [redacted] (personal vehicle / personal vehicle / personal vehicle SUV)

USACE: [redacted]

Hager-Richter: [redacted] (Green Dodge Van, New Hampshire Plate [redacted])

Wx: Mostly clear, 32°F, breeze from east (become very breezy from E-NE for most of day)

06:55 Arrive at NFSS, personnel from [redacted] are at gate. [redacted] (USACE) said we don't have to SIGN IN-OUT on USACE Vis. to Log, just use a URS sign in-out sheet.

07:00 Enter NFSS site. [redacted] does H&S orientation for Hager-Richter personnel and they review the URS APP/SSHP/RPP.

07:45 Mobe to area of excavations IE1 → IE8 and proposed borings around OW11B. Geophysicists walkover areas to be surveyed and start marking out grid for surveys.

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Read and Understood By

[redacted] 11-7-2012

Signed Date Signed Date

09:20 [redacted] starts EM61 survey in grit chamber/decon pad grid area. [redacted] starts utility location (PUL - Precision Utility Locator RD4000) of security system buried electric/comm. cables (spray painted RED on ground) → locations match areas of greener grass/obvious previous trench-backfill areas on ground.

[redacted] says PUL indicates security system elec./comm. at ~24" depth. [redacted] says water line east of IE8 may be only 3-4' deep. Water line adjacent to staked location of IE7 (~5' deep maybe). Line also runs next to OW11A (~33" deep?). At IE5 → line connecting decon pad to grit chamber at staked location (~6' deep?).

11:00 Moved to valve pit to hook up PUL to copper wire & locate water line 10".

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Read and Understood By

[redacted] 11-7-2012

Signed Date Signed Date

NFSS SUP Field Invest.

PROJECT (Geophysical Survey)

Notebook No. _____ Continued From Page 10

10" water line runs within ~8' southeast of proposed boring location MW957 (~7' deep)

At east fenceline (IWCS landfill cell), 10" water pipe may be 11' deep.

At valve pit, 10" water pipe may only be ~3' bgs.

At drainage ditch/sanitary manhole, 10" water line is about 15' SE of manhole (maybe 9' deep).

At anticipated PE1 excavation location (west of east fenceline (IWCS)), 10" water line is ~14'-15' deep. Appears to be enough room to do excavation, but if depth estimate is correct sloping/trench box will be necessary to access pipe. No real standing water in drainage to west ~~and north~~ of [redacted] proposed PE1.

12:00-13:00 LUNCH (Hager-Richter does EM3 over same sampling grid & GPSs coordinates of grid & utilities markouts)

13:15 Started wearing my dosimeter badge

Continued on Page

Read and Understood By

[redacted] 11-7-2012

Signed Date Signed Date

14:00 Hager-Richter personnel move to south end of IWCS landfill cell to markout grid locations around proposed MW-boring locations and start geophysical surveys.

14:45 [redacted] went back to do magnetometer survey at grids east of landfill cell, (IWCS) [redacted] is doing EM61 surveys at well locations (proposed) south of landfill cell.

15:30 - 17:30 Hager-Richter performed EM31 and magnetometer surveys at proposed boring locations south of IWCS landfill cell. They also collected GPS coordinates on grids, utility markouts, and other salient features.

17:40 All URS personnel left NFSS site for the day. I go to Buffalo Office to pick up rental equipment.

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Read and Understood By

[redacted] 11-7-2012

Signed Date Signed Date

PROJECT NRJJ Boy Field Invest. (Geophysical Survey)

Notebook No.

Continued From Page 12

URS: [redacted] - personal vehicle - personal vehicle - personal vehicle

USACE: [redacted] (rental SUV) [redacted] late

Hager-Richter: [redacted]

10:42-12

Wx: 21° F, slightly overcast, calm, very heavy frost

06:55 Arrived on site, gate open, entered NFSS [redacted] is onsite.

07:05 Hager-Richter arrives on site. I do Tailgate Safety Briefing. [redacted] arrived onsite.

07:15 Hager-Richter personnel & [redacted] go to do recon at PE2 and PE3. Hager-Richter decides to stay at PE3 and start pipe-locate geophysical surveys.

They marked out grid & starts PUL survey. Only found one signal (E→W), ⊥ to concrete structure on Modern landfill side of fence

Continued on Page

Read and Understood By

[redacted] 11-8-2012

Signed Date Signed Date

07:50 [redacted] said signal was broad, so it could be multiple pipes. Approx. depth to pipes is 9' bgs (could be shallower if multiple pipes).

single pipe on map Fig 2

E→W

[redacted] found a second possible pipe to north of first pipe (~13' depth?)

⊥ to yellow concrete block on Modern landfill side of fence

* Distance between two blue markouts is 28'.

08:10 Hager-Richter starts geophysical surveys at PE3: EM31, magnetometer, EM61

09:20 Geophysicists have finished surveys at PE3, move to PE2 to do surveys there.

10:00 Met with [redacted] and [redacted] (Site Maint. Super.) and Bobcat operator. Tries clearing area around MH41. We didn't find MH41, but Bobcat will continue to clear/push brush back in area.

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Read and Understood By

[redacted] 11-8-2012

Signed Date Signed Date

PUL &
10:15 EM61 surveys completed at PE2. One N→S water feature line, maybe 9' deep (in depression south of stickup valve on WM side of perimeter fence, as expected).

10:30 Geophysicists continue with EM31 & magnetometer surveys and GPS coordinates for grid/features, taking photos.

11:00 Moved to proposed well locations MW944 & MW945 to do geophysical surveys.

11:15 Met with [redacted] & [redacted] at PE1 and IEs area to do review of utility markouts. We'll do PE1 excavation inside IWCS fenceline NE of valve pit. (Excavate ⊥ to pipeline)

12:00 We went to MH41 location and actually located the manhole. We excavated soil & removed vegetation/debris from around lid. Manhole contains several feet of water Continued on Page →

Read and Understood By

[redacted] 11-8-2012

Signed Date Signed Date

water in manhole up to ~2' bgs

it appears to be 6'-7' deep (3 steel steps leading down); 2.8' in diameter for lid, inside of manhole may be ~4' ø. Could only see 1 pipe entering west side of manhole (but heavy manhole lid was only slightly ajar).

12:15 Geophysicists have finished surveys at MW944 & MW955 and have moved to MW946 proposed locations (2 A&B) for surveys.

12:45-13:45 LUNCH (Rob stayed with geophysicists)

13:45 Geophysicists are doing surveys at MW948 & MW949. Also start surveys at MW947 (EM61).

15:20 Geophysicists have complete surveys at MW948, MW949, and MW947. We'll move back to southern end of IWCS to completed survey at PE 1 excavation (inside west side of fence along east side of IWCS) and PUL check at proposed MW951 & MW950 locations.

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Read and Understood By

[redacted] 11-8-2012

Signed Date Signed Date

* At swale along east side of IWCS that we would have to cross with excavator to get to proposed PE 1 excavation location, depth to security system wiring at bottom of swale is only about 8" bgs (CRANE MATS ?? to protect wires)

17:20 Geophysicists complete surveys at PE 1. They pack up their gear.

17:35 Left IWCS fenced area, secure fence at SW corner with padlock.

17:50 Leave NFSS for the evening.

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Read and Understood By

[redacted] 11-8-2012

Signed Date Signed Date

URS: [redacted] (personal vehicle)

USACE: [redacted]

Wx: 64°F, partly overcast, breezy from S to SW

Russo Development: [redacted] (laborer) [redacted] (Supervisor) } box support truck, trailer, [redacted] 200 LC Excavator

07:45 I arrive onsite (stopped for ice at Sunoco and for clamps at Home Depot en route to site). Start sorting bottle sets for excavation/pipeline sampling-plugging work. I don't have any 1 L amber glass bottles for pipeline/MH water samples or any 120 ml. glass straight side bottles for pipeline/MH soil/sediment samples.

10:24 I call [redacted] to inform him of sample bottle shortage and to request a chemist to sort bottle sets and to label sample bottles.

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Read and Understood By

[redacted] 11-12-2012

Signed Date Signed Date

10:00 Russo Development arrived on site. There excavator came directly from another job and was quite muddy. Rather than decon on site, they will take excavator back to their shop to decon and will return later.

Excavator was on lowboy trailer towed by tractor: John Deere 200LC Russo 33

They also have a support truck ([redacted]) towing a trailer loaded with plywood (6 sheets) & the platform for straddling the trencher for screening access.

Platform is 24" W x 20' L aluminum with handrails

[redacted] does H&S orientation with [redacted] and [redacted]

10:40 Test America Courier arrived onsite with cooler delivery (9 coolers).

10:45 Take Russo to view MH41 and PE3 locations.

We pull the lid on MH41 → depth to water is 3' bgs, about 7.0' total depth bgs. Probably about 4"-6" of sediment on bottom of manhole →

see pg. 51

Continued on Page

Read and Understood By

[redacted] 11-12-2012

Signed Date Signed Date

probed bottom of manhole with 1" PVC rod. Could see ~8" to 10" lines coming into manhole from west and SE, could not see line entering manhole from NE. We discussed possibly just filling the manhole with cement after sampling is completed → we'll run concept by URS management and USACE.

11:00 View PE3 excavation location (proposed).

11:20 [redacted] leave site to go back to their shop to get trench shield.

12:30-13:30 LUNCH

13:30 [redacted] (URS Chemist) onsite sorting & labelling sample bottles.

15:20 Light rain started.

16:30 Russo arrives back on site with

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Read and Understood By

[redacted] 11-12-2012

Signed Date Signed Date

(20'L x 8'H x 5'W)
trench box on a flatbed trailer towed by a dump truck. ([redacted]
([redacted]

16:55 [redacted] excavator (John Deere 200LC) arrives on site, it is clean this time.
Heavy Rain, 50°F
Tractor is ([redacted]
Peterbilt towing low boy trailer.

17:00 [redacted] off loads trench box, excavator, and excavator accessories (2 extra buckets for excavator).
Equipment must be scanned by RAD Tech's tomorrow
17:15 [redacted] has equipment staged in area south of Bldg. 429. They demob dump truck & trailer & tractor with low boy trailer (all Rusco personnel leave site for the day).

17:30 I leave site for the day.

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Read and Understood By

[redacted]
Signed

11-12-2012
Date

Signed

Date

PROJECT NFSS BoP Field Invest. (Excavations)

Notebook No. 1

Continued From Page —

personal vehicle personal personal

URS: [redacted]

USACE: [redacted]

Wx: 35°F, overcast, breezy from SW, light snow

Russo Development: [redacted] box-support truck, trailer, John Deere 200 LC Excavator

0705 I arrive on site. Start loading my truck with sample bottle coolers.

0750 Russo Development arrives on site. [redacted] starts scanning in their equipment.

1030 Snow has stopped. [redacted] is still scanning Russo's equipment.

1040 [redacted] moves catwalk, plywood, and hand tools to PE3 location. Goes back to Bldg. 429.

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Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

1100 [redacted] starts moving excavator & trench box to location PE3.

1120 Have equipment at PE3, discuss planned excavating and soil staging activities.

* Background MiniRAE Plus readings in BZ
CO = 0.0 ppm
VOC = 0.0 ppm
H_2S = 0.0 ppm
LEL = 0 %
O_2 = 20.9%

1125 [redacted] stages excavator at PE3, places plywood sheets under tracks.

1213 [redacted] starts excavating a northerly pipe markout at PE3. No MiniRAE Plus readings in BZ differing from bkgrd.

0-4' bgs: dark brown loamy silty clay with some gray gravel to cobble size pieces angular (broken concrete or slag?), moist, firm, sl. plastic

Soil wet at surface from rain/snow

see pg. 24 for better description

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Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

Stockpiled soil from 0-4' → no PID readings above 0.0 ppm, no unusual staining

Excavation is staying open well to 6.5' with no sidewall caving.

Lots of the angular gravel/cobbles in top 3' (fill) (40-50%)

southernmost 12" ID pipe in group of 3

12:40 Found a water line, ~6.5' bgs to top of water line, appears to be black cast iron pipe in very good condition.

Stockpiled soil from 0-6.5' → no PID readings above bkgrd., no unusual staining or odors.

some appears dolomitic, some slag-like

* Top 2.5' at north end is dk brown silty clay with some intermixed angular sand → cobbles; this layer thins to south & become grayer.

Excavated material comes out in 6"-12" blocks

Below this layer is reddish brown silty clay (much firmer, more blocky); trace gravel-sand, more rounded

Continued on Page

Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

Operator says previous trench (less firm material) extended north of uncovered pipe. No apparent backfill around pipe. A little water in excavation around pipe & previous trench to north (~1" in places); otherwise, no real GW seepage into trench to 6.5' bgs.

13:30 Installed trench box in trench
trench is currently 4.2' W x 20' L x 6.5' deep.

[redacted] enters excavation and started hand digging around pipe. He uses a probe to see if additional pipes are in trench. He found a second smaller pipe north of the first pipe (also appears to be cast iron). Found a third pipe about ~3' further north.

about 3' north

No real bedding around any of the pipes. Some water in trench around pipes is making clay wet, plastic, sticky (reddish brown to brownish black silty clay, trace rounded gravel

Continued on Page

Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

~11.5" OD

13:50 Northern 2 cast iron pipes are 10" ID and southern pipe is 12" ID cast iron pipe.

1.1' O.D.

14:10 Collected clayey soil sample beneath northern most 10" cast iron pipe

DEPTH 8.0'-8.5' bgs

I.D: PE3SB1 8.0-8.5-0101

Sample Time: 1410

Description: Dark brown to dk. gray silty clay, trace rounded gravel

Analyses: gamma/ISO U/ISO Th; SVOC/Pest./PCB; Total U; TAL metals; VOCs

14:20 Collected clayey soil sample beneath second 10" cast iron pipe towards south

DEPTH 8.0'-8.5' bgs

PE3SB2 8.0-8.5-0102

Sample Time: 1420

Description: same as above (PE3SB1)

Analyses: same as above (PE3SB1)

Continued on Page

Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

* Labeled 2 x 40 ml. VOA vial trip blanks provided by TestAmerica as

I.D.: TB 1-111312

all soil & GW samples collected for VOC analyses will be placed in cooler with these trip blanks.

14:30 Ruiso tried to drill into saddle clamp/tapping unit installed on northern most 10" cast iron pipe, but bit is not penetrating pipe (using cordless drill). They switch to electric drill & get through pipe, upon penetration we got a natural gas-type odor. Pipe appears to be only ½ full of water, but may contain gas. [Gas discharged and water level in pipe came up to about bottom of valve]

methane/H2S combo smell

— Put MultiRAE plus downhole, no readings above bkgrd., O_2 is 20.9% in BZ.

* At top of pipe valve, VOCs read 7.8 ppm max, 1% LEL, methane odor. With valve opened, water came up to top, but not out of valve. Gas odor dissipated.

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Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

15:10 Collected pipe liquid sample from northernmost tapped 10" cast iron

Sample I.D.: PE3 PIPE 1 7.0-7.5-0103
PE3 PIPE 1 7.0-7.5F-0103

Time: 1510

Description: Mostly clear water, maybe slight yellowish tint, no noticeable odor or sheen

(Also Filtered for Iso U/Iso Th/Ra-228, Total U, and Ra-226 analyses) $TAL Metals

Unfiltered Analyses: VOA; SVOA; Pest; PCB; TAL Metals; Anions/Alk/TDS; Total U; Ra-226; Iso U/Iso Th/Ra-228

15:20 Collected soil sample from beneath pipeline towards south (southernmost third 12" of 3 at north end of trench)

Depth 8.0-8.5'

PE3SB3 8.0-8.5-0104

Time: 1520

Description: Dark brown to reddish brown wet to moist very firm, slightly plastic silty clay, trace rounded gravel

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Analyses: same as pg 26

Read and Understood By (PE3 ~~PIPE~~ SB1) S.M.

[redacted] 11-13-2012

Signed Date Signed Date

Also Duplicate at this location
Sample I.D.: PE3SB38.0-8.5D-9101

15:30 Russo has southernmost 10" cast iron line tapped with saddle clamp setup, water in pipe-but not under pressure. [Had to adjust tubing several times to keep water flowing during peristaltic pump sampling]

15:50 Collected liquid sample from southernmost 10" cast iron pipe
PE3PIPE2 7.0-7.5-0105
Sample I.D. PE3PIPE2 7.0-7.5F-0105

Time: 1550

Description: Clear, no noticeable odor or sheen

(Filtered for ISO U/ISO Th/Ra-228, Total U, and Ra-226)

Unfiltered Analyses: same as on pg. 28 PE3PIPE1

16:20 Russo had 12" pipe saddle clamp/tap delivered by [redacted], they tap 12" cast iron pipe at south end of group of 3. Gas vented from pipe upon opening valve (methane odor), but dissipated quickly and water came up to bottom of valve.

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Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

16:30 Russo secures area around excavation, loads or secures equipment, and leaves NFSS for the day.

16:50 We load up our equipment and go back to Bldg. 429 to do paperwork.

17:55 [redacted] and [redacted] leave NFSS for the evening.

NOTES

* Todays water samples collected from the pipelines were collected from the tapped valves using a peristaltic pump with new, dedicated silicone (rotor head) and LDPE tubing at each location (direct fill into sample bottles).
* Soil samples beneath pipelines were collected by Russo personnel using a shovel and placed into clean stainless steel bowls, and then transferred from the bowl to sample containers using disposable, sterile, prewrapped plastic scoops.

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Read and Understood By

[redacted] 11-13-2012

Signed Date Signed Date

personal vehicles

URS: [redacted]

USACE: [redacted]

Russo: [redacted] box support truck, trailer, John Deere 200 LC excavator

Wx: Overcast, 37°F, calm

0700 Arrived on site. Sorted sample bottle sets for today and placed labels on yesterday's sample bottles.

0750 Russo personnel arrived on site.

0844 [redacted] finish with sample bottle labelling/sorting, we move to location PE3 to complete pipe excavation/sealing.

0900 We were performing air monitoring in the trench box: 5.7 ppm peak VOC, 35% LEL, 1 ppm CO ← at 12" pipe tap valve; readings in BZ were at bkgrd. (20.9% O_2, 0 for CO, LEL, H_2S, PID)

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Read and Understood By

[redacted] 11-15-2012

Signed Date Signed Date

Water started to spew from opened 12" pipe valve tap (fountain about 2' into air) → closed valve, probably about 100 gallons water in bottom of trench. Methane/H_2S odor from air that came out of valve.

0920 We can't get peristaltic pump tubing inside valve to sample PIPE 3 (12" cast iron pump) without significant water seepage into trench. Russo attaches 2" blue poly tubing to valve at PIPE 3 ~~and will try to fill 5 gallon bucket (relatively clean)~~ [redacted]. Instead, we snaked peristaltic pump tubing inside 2" blue poly (no water is coming out of it because it extends about 5' above top of water pipe) and we'll use peristaltic pump to collect liquid sample from PIPE 3.

I.D.: PE3PIPE37.0-7.5-0106
PE3PIPE37.0-7.5F-0106

Time: 0930

Description: Clear, no sheen

Continued on Page

[redacted] Read and Understood By [redacted]

Signed [redacted] Date 11-15-2012 Signed Date

Same analyses as PE3PIPE1 on pg. 28.
Also collected duplicate:

ID.: PE3PIPE37.0-7.5D-9102
PE3PIPE37.0-7.5FD-9102

(Completed filling bottles at about 10:30.)

0935 Russo starts excavating trench southward of trench box to find 4th water pipe. They find a huge water pipe (~40" ϕ ??) Top of pipe measured ~7' bgs. (36" cooling water pipe?)

1000 [redacted] starts doing RAD scans of new south end of trench. Excavated material is same as north end of trench, no PID readings over bkgrd. (0 ppm) on excavated material. (No staining or odors.)

1050 Jeff digs a sump at southern end of 3 pipe group to relieve water around these pipes in anticipation of starting pipe opening/plugging activities at these pipes.

1100 Russo hooks up ventilator to trench to vent any escaping gases. Open saddle valve on PIPE 1 and take instrument reads (top of valve)

LEL = 53%
VOC = 2.5%
O_2 17.5%
} max.

1105 Russo removes saddle from PIPE 1, water is at top of pipe, but no seeping from pipe.

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Read and Understood By

[redacted] 11-14-12

Signed Date Signed Date

1124 Russo has square hole cut in top of pipe 1, uses gloved hand to collect sediment sampling from bottom of PIPE 1 → limited volume.
Sample placed in deconned SS bowl and processed with plastic disposable scoop into sample jars

I.D.: PE3PIPE1SED-0107

TIME: 1130

Description: Dark gray silty-clayey size sediment, saturated, slight methane/H_2S odor (decayed organics)

Bkgrd. RAD readings on sediment Amy's scan

Analyses: Filled a 16oz. poly & 1 x 2oz. glass jar (limited volume) (gamma spec/ISO U/ISO Th; Total U)

1140 Russo has PIPE 1 filled with bricks & hydraulic cement. Sealed inside & over hole in pipe.

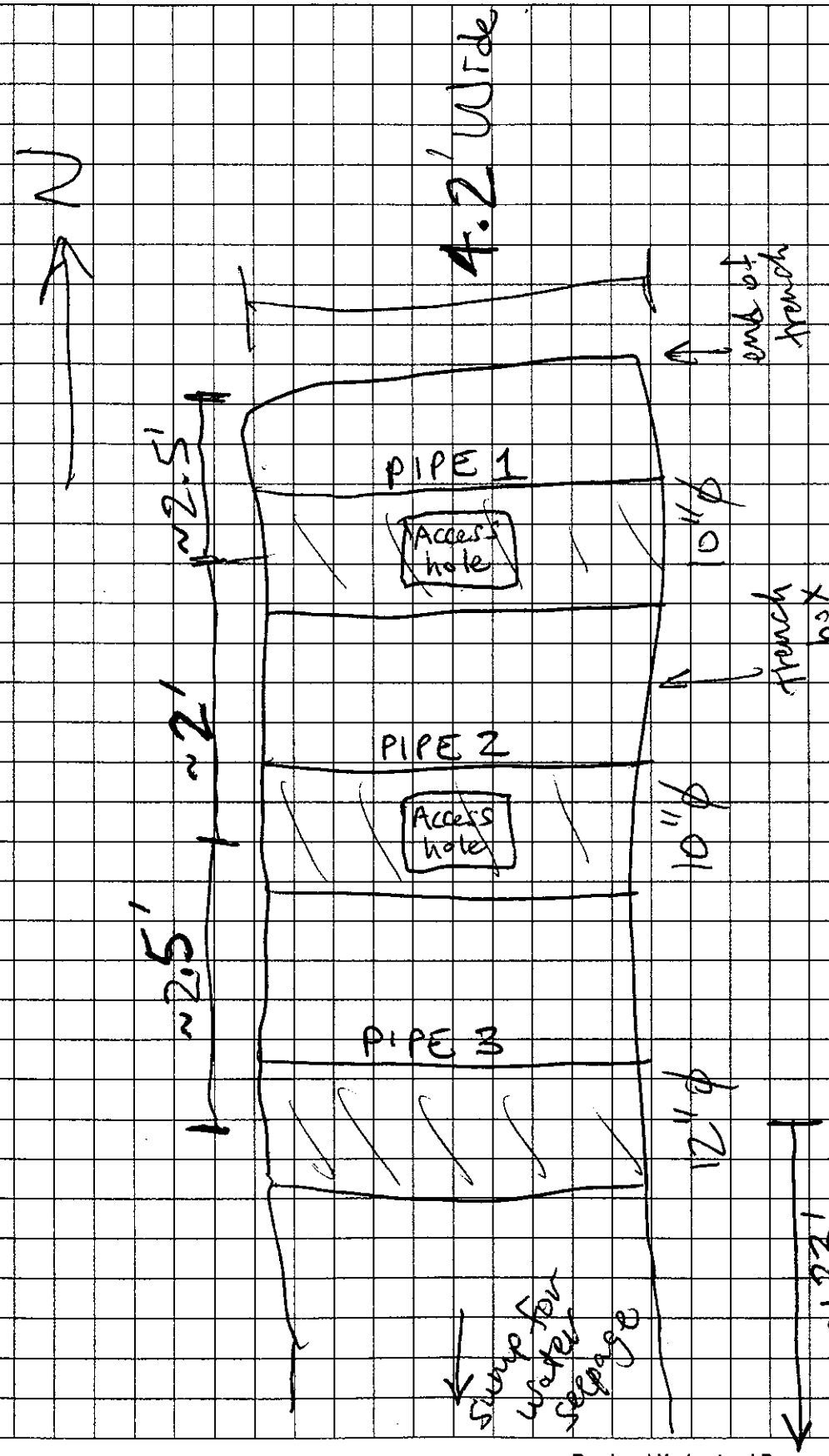
1155 Russo has cut hole in PIPE 2, we collect a black scale sample from inside pipe (no real sediment).

Continued on Page

Read and Understood By

[redacted] 11-14-12

Signed Date Signed Date



Total overall trench length on 11-16-12 is ~50' (north end is backfilled)

About 8' deep at deepest point, ~6.5' bgs to top of pipes

Up to 11' deep bgs around bottom of PIPE 4

Continued on Page

Read and Understood By

[redacted]
Signed

11-14-2012
Date

Signed

Date

I.D.: PE3PIPE2SED-0108

TIME: 1155

DESCRIPTION: hard clumps of black scale (1"-3" angular)

No rad readings over bkgrd.

ANALYSES: filled about 1/3 of a 16 oz. poly jar (limited volume) (Iso U/Iso Th/gamma)

12:00 [redacted] is filling PIPE 2 with bricks and hydraulic cement (Speed Crete Red Line) (used 3 x #50 bags and 11 x 2"x4"x8" bricks).
total for PIPE 1 & PIPE 2

12:20-12:50 LUNCH

13:00 Russo will attempt to remove saddle valve at PIPE 3. Water did come out of pipe when saddle was removed.

Continued on Page

Read and Understood By

[redacted] 11-14-2012

Signed Date Signed Date

13:00 Water continues to come out of PIPE 3, Russo puts saddle back on pipe → they'll try pumping out some water from pipe with diaphragm pump.

Trench at southern end of trench box & 15' south of that:

0-2.5' bgs - dark brown silty loamy clay, many roots, granular structure, some gravel & cobbles (fill/regrade?)
some natural, some slag (angular & rounded) →

excavated material comes out in blocks

2.5-5' bgs - brown silty clay, more massive, trace gravel (more rounded); some orangish mottles

5'-7.5' bgs - reddish brown silty clay, firm, plastic, trace gravel (more rounded)

13:30 Water level in saddle clamp valve assembly has come down a little (~200 gallons pumped into green poly 1500 gal. tank on trailer).

13:42 [redacted] removes saddle clamp, no seepage from pipe while diaphragm pump is on.

13:47 [redacted] starts making cuts into PIPE 3 for access port using gas-powered chop saw with diamond blade.

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Read and Understood By

[redacted] 11-14-2012

Signed Date Signed Date

Got sediment sample from PIPE 3

I.D: PE3PIPE3SED-0109

TIME: 1355

Description: inky, dark black silty-clayey saturated material
maybe slight hydrocarbon odor
slight sheen in spots (could be biological)
sticks to stuff (inky, staining)

Analyses: Full soil/sed. set (see PE3SB1 on pg. 26) collected

14:15 Russo has PIPE 3 filled with hydraulic cement (1½ x #50 bags SPEED CRETE RED LINE cement & 6 bricks).

* ~450 gallons of water pumped from PIPE 3 into green poly tank on trailer.

14:30 Russo makes clay dam at south end of 12" PIPE 3 to contain concrete backfill to go over/around 3 pipes at north end of trench (Cement truck coming @ 15:00)

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Read and Understood By

[redacted] 11-14-2012

Signed Date Signed Date

15:00 Went with Joe Russo to tour areas in NE area of NFSS where additional water lines will need to be cut & capped. Southern location → access like PE3; northern location → access not so good for a truck (have to go through woods -- soft ??), could cutoff location be moved closer to road

Conveyor (NYS Plate 54173KA)

15:30 Cement truck (LaFarge 0444) arrives at PE3 location. Russo adds 10 gallons of bentonite chips to concrete mix. Russo covers the 3 pipes (10", 10", 12") at north end of trench PE3 with concrete/bentonite mix (~3 yards). Concrete brought up to about 5' bgs over top of pipes.

15:55 Russo pulls trench box southward in trench over large water line (PIPE 4)

16:10 Russo secures excavation for the evening.

16:34 Russo personnel leave site for the day. I unload coolers at Conex box, offload my equipment and do paperwork in Bldg. 429.

Continued on Page

17:50 I leave site for the day

Read and Understood By

[redacted] 11-14-2012

Signed Date Signed Date

PROJECT NFSS BOP Field Invest- (PE Excavations)

Notebook No. 1

Continued From Page —

URS: [redacted]

Wx: Mostly clear, 32°F, slight breeze

USACE: [redacted]

Russo Development: [redacted] } box support truck, trailer, John Deere 200LC Excavator

0705 Arrive on site. Load sample sets into my truck. I go over my COCs and sample bottles requiring labelling/shipping with [redacted]

0745 Russo Development ([redacted] arrives on site.

0800 Russo crew and I mobe to location PE3. They remove a little soil around PIPE4 (trench box over pipe) to prepare to go down into hole & measure pipe Ø. We'll do some downhole air monitoring before [redacted] enters excavation.

Continued on Page

Read and Understood By

[redacted] 11-15-12

Signed Date Signed Date

Some sidewall collapse at north end of excavation where 3 PIPEs were covered with concrete. We'll backfill & compact this area after pipe 4 ϕ measurement (SAFETY → to secure trench with no trench box).

0830 Downhole air monitoring readings are at bkgrd levels. PIPE 4 measures about 40" O.D., black cast iron in good condition. (Mark Graham said this DUCTILE IRON)

0840 Russo preps to pull trench box & backfill north end of excavation.

0845-0910 [redacted] backfills excavated soil into north end of trench, generally in reverse order of removal. He compacts clayey soil with excavator bucket.

0910 Northern ~25' of trench PE3 is backfilled and compacted. Jeff enlarges the trench to the south to make room to reinsert trench box over 40"ϕ PIPE 4.

0940 Some angular gravel (2"-3½") bedding material was probably beneath and around PIPE 4, but it has become intermixed with surrounding clay (probably not a conduit for contaminant migration → no GW in hole) maybe a few inch zone, only in places around pipe (mostly beneath)

NO GW seepage into excavation

Also some wooden cribbing pieces in trench around pipe.

Continued on Page

Read and Understood By

[redacted] 11-15-12

Date Signed Date

0945 Collected a soil sample beneath PIPE 4 using reverse mounted excavator bucket. 10 - 11 [redacted] 0110

Sample I.D.: PE3 SB4 ~~9.5-10.5~~ (also collected MS/MSD aliquots [triple volume])

SAMPLE DEPTH: 10' - 11'

TIME: 0945

Transferred soil from excavator bucket to SS bowl & used disposable plastic scoop to fill sample containers (and also gloved hand)

no odors, no PID readings above bkgrd.

Description: Brown to reddish brown firm, plastic silty clay; some orangish mottles; Trace rounded gravel

Some areas of silty-loamy dk. brown to black soil with roots 1/2" - 1" thick (reworked? fall in?)

Analyses: VOCs; TAL Metals; SVOCs/Pest/PCB; gamma; Iso U/Iso Th; Total U

* Assume Top of pipe 4 is ~6.5' bgs, bottom of pipe 4 is ~9.8' bgs, soil sample came from below pipe (I removed any angular gravel that might have been old bedding material)

10:40 [redacted] puts on PPE and enters excavation to try and drill small diameter hole into PIPE 4 to see if any water is inside and if it is under pressure. (using step bit on electric drill)

Continued on Page

Read and Understood By

[redacted] 11-15-2012

Signed Date Signed Date

Water was under pressure and squirted from hole in pipe.

10:52 Inserted sample tubing into hole in PIPE 4, water level in tubing rose up about 3' above top of pipe (under head).

10:55 Started collecting water (liquid) sample from PIPE 4.

Collected sample with peristaltic pump & dedicated, new silicone & LDPE tubing

PE3PIPE4-6.6-7.0-0111
SAMPLE I.D: PE3PIPE4-6.6-7.0F-0111
TIME: 1055 (to 1120)

Description: Clear water, no sheen, no odor

Analyses: same as PE3PIPE1, pg. 28

1120 Water is flowing from hole when tubing is removed. Russo puts wooden plug in hole. [redacted] arrives on site. Also [redacted]

1130 Discussion as to what to do next. [redacted] will try to order a 40" ø saddle clamp/valve setup.

1140 We're on hold at PE3 until we hear about saddle clamp for PIPE4. Shawn & I will go MH41 and collect water & sediment samples.

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Read and Understood By

[redacted] 11-15-2012

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (MH41 Sampling)

Notebook No. 1

Continued From Page 43

12:10 Setup to sample with peristaltic pump at MH41 (dedicated silicone & LDPE tubing) & new

MH41 MH4.0-4.5-0112

SAMPLE I.D.: MH41MH4.0-4.5F-0112

TIME: 1215 (to 1340)

Also collected MS/MSD - triple volume

Description: Clear water, no sheen, no odor

Analyses: Same as PE3PIPE1 on pg. 28

Top of Water in MH41 is at ~2.5' bgs, peristaltic pump tubing intake is set at about 4' bgs.

13:00 [redacted] from Russo have secured PE3 excavation site for the day and they are taking green poly tank of water to staging area by Bldg. 429 to pump into another tank. Then they will leave for the day.

Continued on Page

Read and Understood By

[redacted]

11-15-2012

Signed Date Signed Date

13:45 Take morning samples back to Pete Fairbanks at Conex box to label and process.

14:10 Went back to Manhole 41 to collect a sediment sample from the bottom of the manhole with an extendable pole sampler with 16 oz. poly sample container attached to end. Placed sample in SS bowl, decanted water & removed large organic pieces and brick pieces.

Transferred sample from SS bowl to sample bottles with disposable plastic sample scoop

SAMPLE I.D.: MH41SED5.5-6.0-0113

should be 6.5'-7.0'

TIME: 1430

SAMPLE DEPTH: ~~~5.5'-6.0'~~ (S.M.) bottom of manhole

see pg. 51

DESCRIPTION: SATURATED Brown organic detritus (decayed leaves, branches, acorns), brick fragments, silty loam soil (all material probably fell into manhole from surface since lid was ajar when we found it on 11-8-12, pg. 15) In a silty matrix, tr. clay & fine sand

no odor

Analyses: VOCs; SVOC/Pest/PCB; TAL metals; gamma/isoU/isoTh; Total U

Continued on Page

Read and Understood By

[redacted] 11-15-2012

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (MW #1 Sampling)

Notebook No. 1

Continued From Page 45

15:00 Returned to Conex box with samplers, helped Peter Fairbanks process samples.

16:50 Went to help [redacted] sample new wells MW950 and MW951.

17:55 Left site for the evening.

[redacted]

Continued on Page

Read and Understood By

[redacted]

11-15-2012

Signed Date Signed Date

URS: [redacted]

Wx: 25°F, mostly clear, calm

USACE: [redacted]

Russo Development: [redacted] loader) } box truck, trailer, John Deere 200LC excavator

06:55 I arrive at gate, await entry to NFSS.
0700 [redacted] arrives, we enter NFSS. We do timesheets.

0800 Russo crew ([redacted]) arrives on site. They load a 1500 gal. green poly tank on their trailer and move to PE3.

0900 Maybe 6" of water in bottom of excavation around PIPE 4. [redacted] starts to excavate more soil around/beneath this 40"Ø pipe to try to access for installing saddle clamp/valve around the pipe. After air monitoring, Mike enters excavation →

0910 The saddle clamp bands Russo has are too small to fit around pipe.

Continued on Page

Read and Understood By

[redacted] 11-16-2012

Signed Date Signed Date

They may use a ratchet strap or chain w/ binder to hold valve assembly on pipe 4 since pressure in pipe is low.

They decide to try chains with binders to secure valve seat at top of pipe.

0950 [redacted] will try drilling through PIPE 4.

1000 He successfully penetrated pipe and valve is installed. They prep to pump water from PIPE 4 with diaphragm pump.

* Head in blue poly pipe hooked to valve was initially 2'-2.5' above top of PIPE 4.

1030 Russo starts pumping w/ diaphragm pump.

1100 Russo has about 400 gallons pumped from PIPE 4 in green poly tank on trailer.

1120 ~650 gallons pumped into tank.

1200 ~1200 gallons pumped into tank.
[redacted] wants to order a FRAC tank for water storage. I call Kevin Connare → he would rather utilize all onsite storage tanks first before we order a FRAC tank.

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Read and Understood By

[redacted] 11-16-2012

Signed Date Signed Date

Other available poly tanks for water storage near bldg. 429:

by Conex box:
- 425 gal. white poly (pickup tank)
- 1000 gal. white poly
- 1500 gal. green poly

In staging area by Igloo:
- 1500 gal. green poly
- 1500 gal. green poly (~100 gallons of drilling water)
- 550 gal. white poly (already full with 450 gal from PIPE 3)

move 1000 & 1500 gal. tanks here

(~6475 gallons total storage capacity)

1201 Russo box truck/trailer got stuck trying to haul water tank out; they pull truck out using [redacted] truck.

1230 Russo transfers PIPE 4 water from trailer poly tank to 1000 gal. white poly tank & 1500 green poly tank in staging area by Igloo.

1230-1300 LUNCH

1300 I label tanks that have been filled with PE3 PIPE 4 water by Igloo.

Continued on Page

Read and Understood By

[redacted] 11-16-2012

Signed Date Signed Date

1320 I return to PE3 trench, [redacted] (USACE) had told Russo to stop pumping from PE3PIPE4 due to concerns over water generation & disposal (per [redacted]). We finally came to a concensus that we'll pump one more 1500 gal. poly tank full from pipe and see what head is at end of pumping.

1330 I spoke with [redacted] & [redacted] [redacted] re issue, they will call [redacted] [redacted] to discuss.

1345 After pumping ~600 gallons, head in stickup pipe has not come down from previous mark. We will stop pumping.

1350 I call [redacted], they say plan is to stop pumping & fill bottom of hole to top of pipe with concrete today (We'll also fill MH41 with concrete)

Continued on Page

Read and Understood By

[redacted] 11-16-2012

Signed Date Signed Date

They're going to talk with [redacted] about plan after initial concrete pour.

1400 [redacted] uses excavator to adjust bottom profile of trench to reduce concrete intake away from PIPE 4.

1415 Spoke with [redacted] → [redacted] OK'd plan to fill bottom of hole with concrete, slope sides of excavation down toward pipe, crack out top of pipe and fill with concrete → BUT, [redacted] wants inflatable balls inserted into pipe to limit concrete needed to fill pipe. I tell [redacted] about "ball" plan.

1430 Russo will try to put wood plug (manufactured onsite from a tree branch) into PIPE 4 so they can save chain/binders/saddle valve.

No leaks

They remove saddle clamp & successfully inserted wood plug!! Also covered wood plug with some SPEEDCRETE.

1445 Move to MH41, Bob at Longyear used Bobcat with forks to remove manhole lid.

Water level in manhole is 2.5 bgs

Accurately measured depth to bottom → 7' bgs. [redacted] (USACE) is trying to get a sediment sample with a Ponar Dredge before MH41 is filled with concrete.

Continued on Page

Read and Understood By

[redacted] 12-15-2012

Signed Date Signed Date

Material brought up by dredge same as we got (see pg. 45) → organic detritus & brick fragments that fell from surface into manhole. Mark didn't bother collecting a sample for analysis.

1500 Russo is set up to pump water from MH41 with trash pump into 1500 gal. poly tank on trailer while cement truck ~~pumps~~ pours cement into MH41.

1506 LaFarge Cement truck arrives at MH41 (same truck and driver as on 11-14-12 (pg. 39). Russo added bentonite chips to concrete mix prior to pouring (~15 gallons chips). + 5 more gallons [20 gallons total]

Russo uses a concrete vibrator to vibrate concrete into pipes (pipes looked to be ~8" diameter, inverts at bottom of manhole.

1520 Put about 1.5 yds. of concrete into manhole, concrete level in manhole is ~4' bgs (about 3.7' of concrete added to manhole).

[redacted] 3.3' (see pg. 59)

[redacted] 11-16-2012 (see pg. 59)

Signed Date Signed Date

Did not need to pump any water out of manhole.

1525 Mobe cement truck to PE3 PIPE4 trench. Will use extended conveyor boom to fill area around PIPE4.

Poured concrete under and around PIPE4, vibrated in with electric vibrator.
~2.5 yds. added to hole (4 yd. total load).
(also see pg. 60)

1545 Russo secures excavation at PE3 with caution tape and they lay a sheet of 3/4" plywood over MH41 for the weekend.

1600 Lafarge cement truck leaves site.

1600 Russo pumps 600 gallons of water from green poly tank on trailer to green poly tank in staging area near igloo (about 2250 gallons total IDW water from PE3 excavation work thus far).

1630 Russo personnel leave site for the day. I remove equipment from my truck and do paperwork.

17:30 Leave site for the day.

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Read and Understood By

[redacted] 11-16-2012

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (Task Order #4 Rinse Blank Sampler)

Notebook No. 1

Continued From Page

personal vehicle

URS: [redacted] already on site → [redacted]

USACE: [redacted]

Wx: Clear, few high cloudys, slight breeze, 55°F

12:40 I arrive on site to do equipment rinse blank samples for Task Order 4 soil and sediment sampling equipment. I called [redacted] this morning regarding whether an EB was necessary for pipeline water sampling equipment (peristaltic pump with new, dedicated silicone & LDPE tubing used at each PE3 excavation location and MH41) → QAPP Table #20 says EBs not necessary for dedicated sampling equipment. [redacted] concurred that an EB for the silicone/LDPE sampling tubing was not necessary.

Continued on Page

Read and Understood By

[redacted] 11-18-2012

Signed Date Signed Date

* Using laboratory supplied Rinse Blank water, poured a rinse blank over disposable sampling scoop and foil, & Stainless steel sampling bowl and stainless sampling trowel and then poured this water into sample containers (represents EB for sampling equipment used to collect Pipeline Excavation soil & sediment samples).

Sample I.D.: EB1-111812
Time: 1400

Parameters: VOCs; SVOCs; Pest; PCB; Total U; Ra-226; Iso U/Iso Th/Ra-228; TAL Metals
(10 total containers)

* Using laboratory supplied Rinse Blank water, poured a rinse blank over disposable sampling scoop, Stainless steel bowl, and swirled out & 16oz. poly sampling jar on extendable pole sediment sampler to represent equipment used to sample sediment at bottom of Manhole 41.

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Read and Understood By

[redacted] 11-18-2012

Signed Date Signed Date

Sample I.D.: EB2-111812

TIME: 1500

Parameters: same as EB1-111812 on pg. 55 (10 total containers)

Also included Trip Blank with cooler of EB1 & EB2 sample bottles

Sample I.D.: TB1-111812

1 x 40ml. HCl pres. vial for VOC analysis (no other TB vials in trailer for use)

16:00 I leave gate at NFSS for the day.

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Read and Understood By

[redacted] 11-18-2012

Signed Date Signed Date

URS: [redacted] (rental SUV)

USACE: [redacted]

Wx: ~~34~~ 27° F, calm, mostly clear (warmed up to mid-50°F later in day) (S-M)

Russo Development: [redacted] (supervisor, operator) [redacted] (laborer) } box truck, trailer, John Deere 200LC excavator

0704 I arrive on site. Load bottle sets and equipment in my truck. Using Pine Env. #07799 rental MultiRAE Plus, calibrated this morning by [redacted] for air monitoring.

0805 Russo crew arrives on site ([redacted]). [redacted] calls vendor re inflatable bags to plug 36"ϕ pipe at PE3.

The cost for air bags (only inflatable to 1 psi) are ~$1400/each. The cost for inflatable pipe plugs (probably will work) is ~$8000/each.

probably won't work

Continued on Page

Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

0820 I call [redacted] and give him the estimated costs for inflatable bags/plugs. He will call USACE to discuss options for plugging PE3 PIPE4.

0840 We make to Manhole 41 to pump out water in manhole, as requested by [redacted] (USACE) on 11-16-12.

0845 Water level in MH41 is approximately 2.3' bgs (water was at top of manhole on 11-16-12 after cement was added). Water level in manhole has dropped since 11-16-12 (leakage into pipes or through manhole walls ??)

Russo sets up to pump water out of MH41 with a submersible pump into green poly tank on trailer (about 75 gal. of water still in tank from PE3 PIPE4).

MH41 is about 2.2' ø at top and tapers to about 3' I.D. at bottom.

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Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

Top of concrete in MH41 is at about ~3.3' bgs. We pumped about 75 gallons of water out of MH41. (~150 gallons total in green poly tank)

also see pg. 52

0900 Some water flowed back into MH41 when submersible pump was turned off (water from hose & inside pump). Russo will use diaphragm pump to thoroughly remove water from MH41 so we can more accurately gauge any reinfiltration.

0910 Bottom of MH41 is reasonably dry. top of concrete at ~3.3' bgs. [redacted] (USACE) arrived on site at MH41.

0915 [redacted] checked inside of MH41 with piece of conduit. He said he was satisfied that MH41 pipes were plugged. We recover MH41 with its lid.

0920 We move to PE3 PIPE4 trench location.

0930 Water level in excavation PE3 is at about 6' bgs (about 6" above top of PIPE4). Russo will pump water out of excavation so top of PIPE4 is accessible. (Pumped out about ~125 gallons from excavation bottom → about 275 gallons total in green poly tank)

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Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

1040 We've been discussing options for plugging PIPE4 with USACE ([redacted]).
[redacted] contacted [redacted] and she has given us approval to do "score top of pipe, break top with excavator, fill pipe with concrete" option. Russo will investigate pricing for other options for future locations.

I inform [redacted] by phone of USACE approval.

1100 Russo prepared to enter excavation to score top of pipe with chop saw. They put ventilator hose into trench box.
[redacted] will perform downhole air monitoring prior to [redacted] entering trench.
Air monitoring readings at bkgrd. levels.

1110 [redacted] enters excavation & scores a ~18" x 18" square in top of pipe with chop saw (maybe 3/4" to 1" deep scoring cuts).
w/ diamond blade

NOTE - Concrete appears to be up to top of pipe +
(poured on 11-16-12, see pg. 53)

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Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

on both north & south sides of pipe (based on where Mike is standing).

[redacted] performed continuous downhole air monitoring during entry.

1130 Russo will attempt to pull trench box from excavation PE3.

1137 Trench box pulled from excavation, sidewalls are remaining vertical (no slumping yet).

1145 [redacted] will do some sidewall radiation scans from catwalk while excavation is open.

1200 [redacted] in backfilling and sloping north & south ends of trench PE3 toward PIPE4.

1225 Russo will offload green poly tank on trailer into a tank in staging area by igloo. Cement truck will not arrive until 15:30 -- [redacted] ordered "Caisson Mix" which hopefully will work well in water.

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Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

1230-1330 LUNCH

1330 [redacted] said cement truck delivery has been moved up to ~14:30, we mobe back to PE3 Pipe 4 excavation.

[redacted]

1415 LaFarge Cement truck #0444 has arrived at PE 3 Excavation (same driver & truck as previous deliveries)

1420 [redacted] hit scored window in top of pipe -- some of window broke out & water flowed up into excavation (about ~1'-1.5' of water above top of pipe). Russo hit window area a few more times to make sure window is large enough for concrete to enter. They center conveyor truck chute over window and start filling with concrete.

14:45 About 4 yds of concrete in pipe 4 & excavation -- concrete level is about 1' above top of PIPE 4 currently.

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Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

We'll put about another 2 yds. into this excavation, then put the remaining concrete (8.5 yd. total load) into MH41.

* We'll pump out water from PE3 excavation tomorrow and allow to sit until Wednesday to check for reinfiltration. If no reinfiltration, we'll backfill PE3 trench on Wednesday morning.

1500 Maybe an inch or two of GW reinfiltration into MH41. Filled MH41 completely to the surface w/ concrete. We used ~6.5 yds total of the 8.5 yd. load. [redacted] escorts [redacted] truck to gate.

1515 Russo personnel dry decon excavator buckets and trench box to remove gross soil. [redacted] checks excavator buckets and trench box for rad.

1600 [redacted] has been given clearance by [redacted] to move to PE2. They load equipment on trailer and will track excavator to PE2.

1652 We have equipment moved to location PE2.

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Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

1710 Russo crew leaves site for the day.

1730 I leave site for the day.

NOTE

A sediment sample was not collected a PE3 PIPE4 since the water in the pipe was under pressure and when the pipe was opened the trench box had been removed from the excavation and the sidewalls were potentially unstable ([redacted] unsafe to collect a sediment sample).

[redacted]

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Read and Understood By

[redacted] 11-19-2012

Signed Date Signed Date

URS: [redacted]

USACE: [redacted]

Wx: 32°F, overcast, light fog, calm

Russo Development: [redacted] (operator) [redacted] (laborer) — box truck, trailer, John Deere 200L excavator

Equip.: rental MultiRAE Plus ([redacted]) and rental Geopump 2 Peristaltic Pump

0700 I arrive on site, load sample bottle sets & equipment in my truck.

0810 Russo crew arrives on site ([redacted]). They load empty green poly tank on trailer and we move to PE3 to pump water out of excavation.

0830 Depth to water in excavation PE3 is still about 3' bgs. Russo will pump water out of excavation — they start with electric submersible pump and will finish off with diaphragm pump. Remove ~200 gallons from excavation. Top of concrete is at ~3.4' bgs. Russo to add plywood on trailer.

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Read and Understood By

[redacted] 11-20-2012

Date Signed Date

0900 We mobe to PE2.

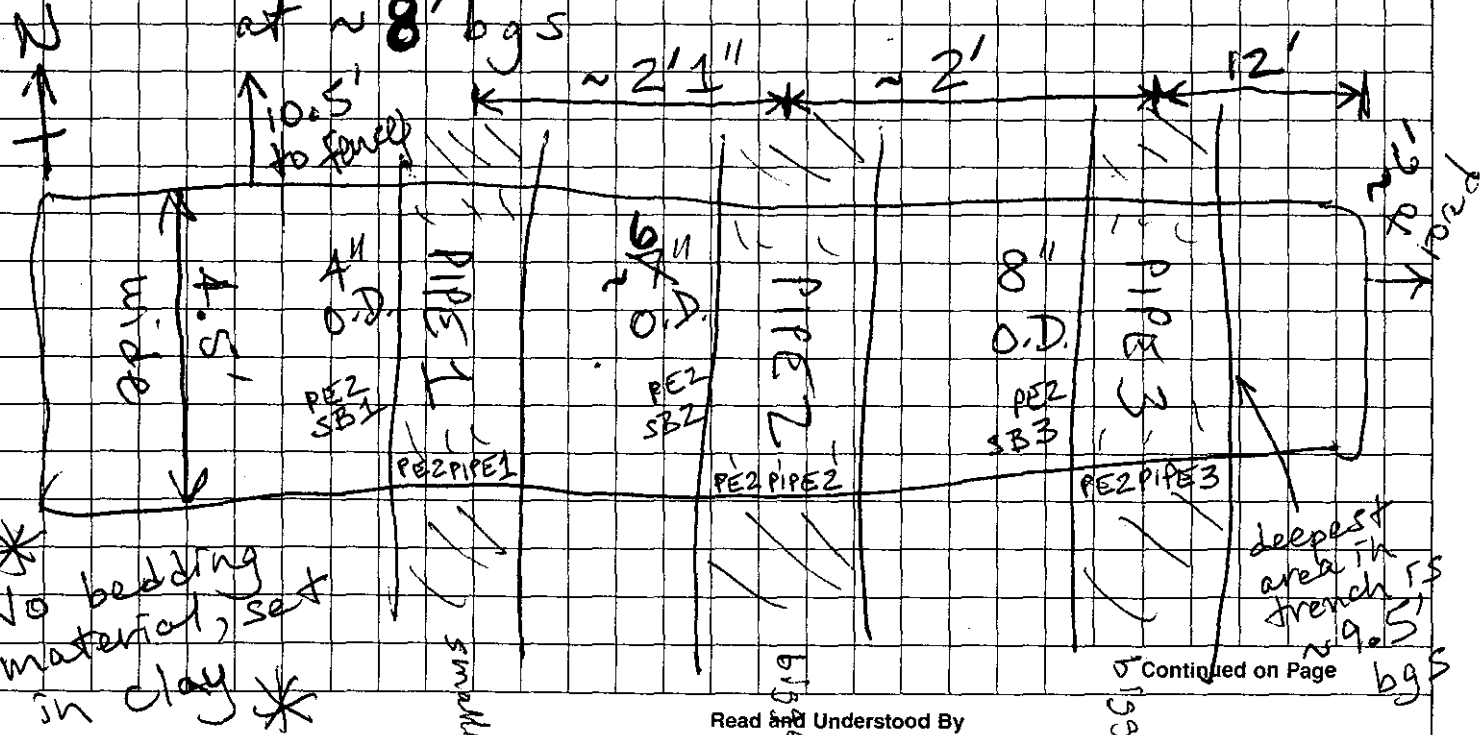
0918 Russo starts excavating soil at PE2.

- Top 12" is dark brown (granular structure) clay loam to pro M with many fine roots (grass at surface), trace gravel & cobbles (FILL/BACKFILL/REGRADE ??)

- Then brown to reddish brown silty clay, tr. rounded gravel & cobbles more blocky structure upon excavation

0930 Found 3 cast iron pipe (bell & hub connections visible in trench south side), top of pipes at ~8' bgs

parallel at same depth on 4"Ø & 7"Ø pipes



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Read and Understood By

[redacted]
Signed

11-20-2012
Date

Signed

Trench is about 21.5' [illegible]

0940 No PID readings over bkgrd. (0 ppm) on excavated soils, no visible or olfactory signs of contamination thus far.

[redacted] is enlarging excavation to accommodate trench box & build benches at ends of trench at level of top of pipes to set trench box on.

0950 [redacted] will do sidewall rad. scans prior to trench box installation.

0955 No PID readings (i.e., all 0 ppm) on excavated soil pipe placed to south of excavation on poly sheeting.

With depth in excavation, reddish brown clayey soil became slightly moist, very firm, probably plastic, some grayish partings; some thin brown fine sand partings/lens up to 1/2" thick (not wet, only moist

1035 Russo inserts trench box into excavation PE2.

on east side of pipe 3 → Some oily material appeared to be in soil from around PIPE 3 - dark gray, oily odor, but no PID reading [0.0 ppm]

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maybe thin film adjacent to pipe

[redacted] 11-20-2012

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1048 [redacted] does downhole air monitoring & [redacted] enters trench box

Soil sample from beneath PIPE 1 (4"ϕ pipe) western of PE2

Sample I.D.: PE2SB19.0-9.5-0114

TIME: 1058

No odors, PID=0.0ppm

DESCRIPTION: Reddish brown silty clay, moist, plastic, trace gravel & orange mottles trace black silty partings

ANALYSES: VOA; SVOC/PEST/PCB; gamma/Iso U/Iso Th; Total U; TAL Metals

---

Soil sample from beneath PIPE 2 (6"ϕ pipe) in center of 3 pipe group

Sample I.D.: PE2SB29.0-9.5-0115

TIME: 1050

DESCRIPTION: same as above

No odors, PID=0.0ppm

ANALYSES: same as above for PE2SB1

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Sample from beneath PIPE 3 (8"ø pipe) at east side of PE2
SAMPLE I.D.: PE2 SB39.0-9.5-0116
TIME: 1054
DESCRIPTION: same as SB1 & SB2, some of the gray to black silt-er material with slight oily odor (PID = 0.0 ppm)
biased sample toward darker silt-er material
brown fine sandy parting in clay (1/16" thick)
ANALYSES: same as for PE2 SB1 (pg-68)

1125 [redacted] has a saddle clamp valve assembly on PIPE 1 (4"ø pipe), but have not drilled pipe yet.

1137 [redacted] has a saddle clamp valve assembly on PIPE 3. They have PIPE 1 drilled and a little water comes out top of valve (slight pressure). Russo installs a 4' blue poly stickup on PIPE 1 valve so we can sample it.

1148 Start collecting water sample from PIPE 1.
Russo starts drilling through PIPE 3 valve assembly. Some pressure in PIPE 3 (looks turbid black). With 4' blue poly on pipe, water still flows out top.

1150 Drilled hole (1/2"ø) in PIPE 2, it is under pressure, they inserted wooden plug. They'll order a saddle clamp for this pipe.

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1200 Russo attaches larger blue poly stickup to valve on PIPE 3. Still flows out the top of stickup. Russo uses diaphragm pump to remove some water head from PIPE 3.

1220 After pumping about 175 gallons from pipe 3, head dropped enough that we could insert sampling tubing into blue poly stickup and collect sample. (375 gallons total in green poly tank on trailer)

1230 Put silicone & vinyl tubing over LDPE tubing and insert it into PIPE 2.

1230 Russo starts pumping water from PIPE 1 to reduce head so pipe can be cut.

NOTE 6 1/4" ø PIPE 2 seems to line up with fire suppression yellow valve on WM side of fence that was connected to for geophysical survey.

Pumped ≈525 gallons from PIPE 1

1330 Russo has stopped pumping on PIPE 1 (total gallons in green poly tank = 900 gal.), head has dropped enough to cut pipe open.

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Water sample from PIPE 1

PE2 PIPE 18.2-8.4F-0118

Sample I.D.: PE2 PIPE 18.2-8.4-01187

Time: 1148

used peristaltic pump with decontaminated new silicone & LDPE tubing

Description: Clear, maybe a little decayed organic/methane/H_2S odor

Analyses: VOA; SVOA; Pest.; PCB; Iso U/Iso Th/Ra-228; Ra-226; Total U; TAL Metals (also filtered for Iso U/Iso Th/Ra-228; total U; Ra-226; TAL Metals)

Anions/U
TDS/
Alk.

also

Water sample from PIPE 3

PE2 PIPE 38.3-8.7-0118

Sample I.D.: PE2 PIPE 38.3-8.7F-0118

Time: 1225

Description: clear, no odor

Analyses: same as above

* All pumping at PE2 from pipes have been done with diaphragm pump.

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Water Sample from PIPE 2 (center pipe)

Sample I.D: PE2 PIPE 28.3-8.6-011
PE2 PIPE 28.3-8.6F-011

Time: 1300

also sampled with peristaltic pump & dedicated tubing

Description: Clear, no odor

Analyses: same as PE2 PIPE 1 (pg. 71)

1335 Russo switches to pumping PIPE 3 to lower head.

1344 Russo cuts a square window into the top of PIPE 1 (4" Ø pipe).

* Not enough sediment in bottom of PIPE 1 to collect a sample for analysis.

1350 Mike fills PIPE 1 with SPEED CRETE RED LINE hydraulic cement (~ 3 gallons). Pushed cement into pipe 1, added another gallon of cement -- pipe is filled to top & rounded off.

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1400 PIPE 3 head is almost pumped down to top of pipe.

1412 Stopped pumping at PIPE 3 (~1350 total gallons in green poly tank -- we pumped about an additional 450 gallons from PIPE 3).

1415 Still too much head in pipe 3, pumped another ~50 gallons → then Russo went to off load nearly full green poly tank into tanks at staging area south of Bldg. 429.

~1400 gals. in green 1500 gallon poly tank

Wx.: overcast, mostly calm, 54°F

NOTE Geophysical pipeline markout for this location was about 2' east of PIPE 3 (they had guessed 9' bgs for pipe depth, actual was 8' bgs to top of pipe).

1510 Russo crew back with empty green poly tank. They also have the saddle clamp for PIPE 2.

1515 Continue pumping PIPE 3 to get head down. Having problems with diaphragm pump. They take it apart to get sediment out of it.

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1533 Back to pumping at PE2 PIPE 3.

1540 Russo installed 6" saddle clamp on PIPE 2.

1554 Have pumped about 300 more gallons from PIPE 3; Russo removes saddle clamp/valve assembly → water level is below top of PIPE 3. Russo will starting cutting window into top of PIPE 3 (while still pumping from hole in pipe). (~8" x 12" window)

Stihl chop saw with diamond blade

* Get a sample of black scale from inside of pipe.

Sample I.D.: PE2PIPE3SED-0120

TIME: 1600

Description: Black scale from sides of inside of PIPE 3, hard chunks (no odor or sheen) (like black peanut brittle)

sampled by gloved SS into bowl

Analyses: Limited volume (about 1/8 of 16 oz poly) for gamma/150 U/150 Th unpres.

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1605 Russo jambed a sandbag into south end of PIPE 3 and inserted some speed crete, but pipe is still leaking water. They push sandbag into north end of pipe and insert more speed crete.

1614 North end of pipe appears sealed, but south end is still leaking. (Clear water)

1620 Russo puts electric submersible pump into bottom of excavation to control water seeping in from PIPE 3. [redacted] slowly builds up speed crete patch on south end of window.

1640 [redacted] tries using a rosebud propane torch to speed cure of speed crete.

1640-1740 [redacted] are in trench box trying to patch leak in PIPE 3. We are holding flashlights over the trench box so they can see. They finally jam enough material (rags, concrete bags, Speed Crete) into PIPE 3 to stem most of the leakage.

However, I doubt that USACE will fully accept that PIPE 3 is adequately sealed.

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[redacted] 11-20-2012

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1740 Russo loads up some equipment and secures other equipment at the excavation.

They used an electric sump pump to pump ~500 gallons of water that leaked from PIPE 3 into excavation (green poly tank on trailer has about 800 total gallons of PIPE 3 water since it came back empty at 1510).

1750 Russo crew leaves site for the day. I offload equipment at Conex box & Bldg. 429.

1755 I leave site for the day.

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[redacted] 11-20-2012

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URS: [redacted]

USACE: [redacted]

Wx: 28° F, calm, pea-soup fog (~200' vis visibility)

Russo Development: [redacted] box truck, trailer, John Deere 200LC Excavator

on site to pickup excavator grading bucket → [redacted] (Will only stay in truck, will be escorted) [redacted] Ford single axle dump truck

0700 I arrive at NFSS gate, ask someone to let me into site.

0710 Site Maint. crew lets me in.

0730 Checked water in excavation PE3, depth to water is ~3.3' bgs, about 0.2' water in excavation on top of concrete.

0735 Checked excavation PE2: about 6" of water in bottom of excavation, can see under all 3 pipes and no signs of water leakage (water in bottom of hole is calm, like glass).

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[redacted] 11-21-2012

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0745 Russo crew arrives on site. [redacted] is on site in separate truck to pick up excavator grading bucket ([redacted] will have to frisk/test bucket before it can be removed from site).

0800 Mobe to excavation PE2 location. Russo uses diaphragm pump to pump water out of bottom of excavation prior to entry. (~840 gallons now in green poly tank on trailer)

0813 Initial MultiRAE Plus ([redacted]) readings downhole are at bkgrd. levels.

CO = 0 ppm
H_2S = 0 ppm
LEL = 0 %
PID = 0 ppm
O_2 = 20.9 ppm

0815 [redacted] enters excavation to reinstall saddle clamp/valve on 8"ø PIPE 3 to the north of previous window/concrete patch to see if plug is preventing flow from S → N.

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[redacted] 11-21-2012

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0820 First, [redacted] opens valve on saddle clamp/valve assembly on 6"ø PIPE 2 to drill through pipe to gauge head in PIPE2. Water did come out of top of valve assembly, so [redacted] attaches stickup blue poly pipe to PIPE2 and starts pumping PIPE2 with diaphragm pump. (~840 gallons in green poly tank before pumping started). Water being pumped looks dark, murky in clear diaphragm pump hose.

0835 [redacted] attaches saddle clamp/valve assembly to PIPE3, north of concrete plug. [redacted] drills through PIPE3. He opens valve → no water flow, looks like pipe is full of concrete below valve body. I request that a USACE rep come out to view hole in pipe.

0850 [redacted] viewed hole in pipe, he would like to see pipe cut open to better verify that flow isn't occurring below/around concrete plug we can see in current hole

0855 Russo sets up ventilator and gets ready to use chop saw to cut PIPE3.

Water level in PIPE 2 is almost down to top of pipe.

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0900 [redacted] uses chop saw to cut a new window in the top of PIPE 3, north of yesterday's plug. (8" x 8" window)

No leakage from pipe, can see end of orange sand bag in window.

0910 [redacted] gave clearance for excavator grading bucket to leave site. Russo loads bucket on dump truck, [redacted] will escort truck out gate.

0915 [redacted] gave O.K. to use excavation concrete filling with cement truck to fill window in PIPE 3 (we'll have Russo shovel/push cement down pipe)

0915 [redacted] cuts window in PIPE 2 (~8" X 12" window) (water level in green poly tank is at ~1150 gallons).

* Not enough sediment in bottom of PIPE 2 for a sample -- the little material in the bottom looked like debris from saw cut.

No flow from PIPE 2.

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0930 [redacted] fills PIPE 2 with SPEED CRETE mix (2 x #50 bags). RED LINE

0930 I call [redacted] & give him an update on our progress.

0935 Pumped a little more water from north end of PIPE 3 at USACE request (total in green poly tank is ~1175 gallons). Can see down into PIPE 3 pretty well now.

0940 Russo cleans and loads up equipment, waits for cement truck to arrive (scheduled for 10:30).

1030 [redacted] backfills and compacts some soil at east end of excavation to reduce excess concrete volume necessary to encase 3 pipes.

1035 Russo goes to staging area to offload green poly tank water (~1175 gallons) to tanks on ground

1057 [redacted] truck (#0444, same truck & driver as previous deliveries) arrives on site & is escorted to PE 2 trench. Russo added 10 gallons bentonite chips to concrete truck mix.

1110 Russo starts by putting concrete into PIPE 3 window (shovels and stomped it into pipe). Then placed concrete under, around, and over the 3 PE 2 pipes. 2 yds. total in truck were used.

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1120 Russo is done filling concrete over pipes and exits trench.

1130 We secure PE2 excavation site for the weekend. Russo goes back to staging area to complete off load of water in green poly tank.

1135 [redacted] escorts [redacted] cement truck off site.

1200 [redacted] leave site to go to airport.

1200 Inventory of water storage tanks at staging area south of Bldg. 429:

550 gal. white poly (full ≈450 gal. from PE3 PIPE3)
1500 gal. green poly (full ≈1500 gal. from PE2 & PE3 & MH41)
1500 gal. green poly (full ≈1500 gal. from PE3 PIPE4)
1000 gal. white poly (full ≈1100 gal. from PE3 PIPE4)
1500 gal. green poly (≈625 gal. from PE2 & drilling decon)
1500 gal. green poly (empty - used for trailer)

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[redacted] 11-21-2012

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NFJJ BOT Field Invest.

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1210 Russo crew & [redacted] leave site for the day.

* We generated ~ 5175 total gallons from work at MH41 (25 gal.), PE2 (2525 gal.), and PE3 (2575 gal.).

1230 [redacted] & [redacted] leave site for the day.

[redacted]

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PROJECT NFSS Bop Field Invest. (PE2 Backfill)

Notebook No. 1

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URS: [redacted]

USACE [redacted]

Russo Development: [redacted] box truck, trailer, John Deere 200LC excavator

Wx: 30°F, overcast, slight breeze from SW (no snow on ground) occasional light snow

0700 I arrive on site. [redacted] lets me in gate. I load equipment in my truck. Fill out sample labels & COCs for future sampling.

0815 Russo crew arrives on site. H&S briefing from [redacted]

0830 Mobe to excavation PE2 location. Approx. 5" to 1' of clear water in bottom of east west excavation above concrete (water is calm, no ripples) -- groundwater infiltration from long weekend?

0840 Russo attempts to pull trench box from PE2. Trench box pulled fairly easily.

0845 Russo starts backfilling excavation PE2 with previously excavated soil from stockpile. Compacts soil with excavator bucket.

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[redacted] scrapes soil from trench box (manual, dry decon).

0910 Frac tank delivery arrives at gate, shawn goes to let them in. We go to staging area to find a place to park tank.

21,000 gallon tank

Drillers moves their equipment so frac tank (E-tank #523B Buffalo, N.Y.) can be parked adjacent to poly tanks in staging area.

[redacted] need to perform baseline rad. scan on frac tank before we can pump into it. ([redacted] gets E-Tank tractor driver out of gate)

0930 Russo heads back to PE2 to continue backfilling.

1035 Russo has completed backfilling excavation PE2, soil is mounded up to about 1.5' max. above surrounding ground level. Soil will settle over the winter.

1045 Russo does dry decon on excavator bucket. [redacted] does rad. scans on Russo's equipment.

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1105 [redacted] clears Russo to track excavator from PE2 → PE3 to backfill that excavation.

1120 Excavation PE3 has about 1' of water in trench over top of concrete. We'll start backfilling PE3 and see if water is somewhat absorbed by relatively dry stockpiled clayey soil from excavation.

1240 Russo has completed backfilling excavation PE3 (clay absorbed water in excavation). Russo cleans up plastic sheeting & dry decons excavator bucket for Amy to scan & clear.

I marked the four corners of PE3 with wood stakes. I also went back and staked four corners of PE2 with wooden stakes.

At PE3, Russo did backfill in 2'-3' lifts and compacted the soil with the excavator bucket, but the soil above the excavation is mounded up to ~15 ags.

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* Generated 9 contractor trash bags of plastic sheeting from PE2 & PE3 → transported to staging area & labelled

1315 Russo moves back to PE2 to load trench box on trailer and get smaller excavator bucket for transport to PE1.

1345 Russo has equipment loaded up and we mobe to PE1.

1400 Wx.: Partly sunny, 41°F, breezy from west

1405 Russo transfers bucket (wider) from east side of IWCS fence over to west side (PE1 proposed location). They prepare to transfer trench box over fence to PE1 location. The trench box was lifted over the fence without incident.

1420 Russo goes back to PE2 to load catwalk on trailer & bring back to PE1.

1440 Russo transfers cat walk over fence to PE1 location.

1445 Russo mobes excavator to location PE1.

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1500 [redacted] has excavator staged at PE1.

1515 [redacted] goes to staging area & starts pumping water from poly tanks into frac tank using electric submersible pump. (PE2/PE3/MH41)
Water from these tanks pumped into frac tank:

See pg. 82

550 gal. white poly (~450 gal. from PE3 PIPE3)
1500 gal. green poly (~1500 gal. from PE2, PE3, & MH41)
1500 gal. green poly (~1500 gal from PE3 PIPE4)
1000 gal. white poly (~1100 gal. from PE3 PIPE4)

1700 Russo has pumped the contents of the 4 tanks above (north end of staging area) into frac tank, load up hose & pump & generator. Done for the day, they sign out and leave site for the day.

1730 I leave site for the day.

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NFSS BOP Field Invest.

PROJECT (PE 1 Excavation) Notebook No. 1

Continued From Page

URS: [redacted]

USACE: [redacted]

Russo Development: [redacted] box truck, trailer, John Deere 200LC excavator

Equipment: Pine Env. rental peristaltic pump and MultiRAE PIDs [redacted]

Wx: 34°F, overcast, breeze from SW

0705 I arrive on site, follow [redacted] into site. I load equipment into truck. I fill out sample label sets for upcoming TO #5 sampling.

0800 [redacted] called to say they would be a little late.

0830 Russo crew arrives on site. We do H&S briefing and discuss proposed excavation course of action at PE 1.

0845 We go over to PE 1 to set up.

1000 Russo starts excavating at PE 1.

grass at surface Top 1'-1.5' is brown loamy, granular silty clay soil, tr. rounded gravel (many fine roots) (moist) (dry at surface)

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below surface layer, it becomes reddish brown silty clay with some gray & orange mottling, more angular blocky structure, trace rounded gravel & fine roots (no PID readings above bkgrd. [0.0 ppm] on material excavated to 3' bgs. (~~Trace~~ cobbles, rounded occasional)

(moist, firm, plastic)

At about 5' bgs, ~~some~~ trace gray clay intermixed with reddish brown clay (gray partings (≤ 1/16") silty/fine sandy)

In area of pipe backfill, some blackish-dark brown more loamy material that had rad. readings slightly above bkgrd. (PID readings have all been all bkgrd.).

top soil intermix? due to regrade or separate fill?

1030 Same material to 9' bgs

1040 * At ~~~11'~~ 10' to bgs, gray (pinkish to brownish gray) silty clay, ~~moister~~ sticky & more plastic appearance (comes out in excavator bucket-size blocks).

1045 Found top of water pipe at ~14' bgs.

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In excavated material
A tan well graded (F-C) sandy parting is present in gray clay (1/16"-1/8" thick) moist, but not wet

1050- We take a break so [redacted] can do rad. scan
1150 on sidewalls using catwalk. Total excavation depth is ~14.5' around pipe, ~10' bgs at SE end and ~8' bgs at NW end. No GW seeps in excavation yet, although gray clay was moister.

* No real bedding visible around water line. (appears to have been backfilled with excavated clayey soils [native])

1150 Russo starts excavating soil on sides of trench for benching since excavation bottom is 14.5' bgs, but trench box is only 8' high ([redacted] discussed benching particulars with [redacted] the Russo onsite excavation Competent person).

NOTE: Excavation sidewalls had stayed open to 14.5' bgs with no evidence of caving/slumping or groundwater seepage

1200 Wx.: 39°F, overcast, very windy from SW

1230 Russo checks fit of trench box and sloping benches (4'x4' bench on each side).

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1253 [redacted] enters excavation to measure pipe ϕ and to get soil sample beneath pipe. Pipe is black cast iron(?), 11" O.D. (assumed 10" I.D.). [PIPE 1]

1300 [redacted] collects a soil sample from beneath the pipe.

1305 Russo installs saddle clamp/valve assembly on pipe and prepares to penetrate the pipe (they have a hand-ratcheting tool to penetrate pipe instead of drill w/hole saw used on previous pipes).

1345 Russo had to put a large stickup on valve to top of trench box (they first tried a 6' stickup & it overflowed).

1352 Start collecting water sample from PE1 PIPE 1. (Pushing LDPE tubing down blue poly stickup pipe as far down as it would go)

1427 Complete water (liquid) sample collection at PIPE 1.

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Sample I.D.: PE1SB115.0-15.5-0121
Depth: 15.0'-15.5' bgs
Time: 1300

Analytes: VOCs, SVOCs, Pest., PCBs; TAL Metals, gamma spec/iso U/iso Th; Total U

Description: Pinkish gray silty clay, moist, very plastic, somewhat firm

no PID above bkgrnd. (0.0 ppm), no odor, no staining or visible signs of contamination

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Sample I.D.: PE1PIPE114.0-14.5-0122
PE1PIPE114.0-14.5F-0122
TIME: 1352

Sample collected using peristaltic pump & new, dedicated silicone & LDPE tubing

Analytes: same as PE2PIPE1 on pg. 71

Description: Clear, slight sulfury odor (difficult to tell since it's very windy)

no PID reading above bkgrd. (0.0 ppm)

TRIP BLANK - 2 laboratory provided HCl pres. 40 ml. VOA vials

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I.D.: TB1-112812

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[redacted] 11-28-12

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PROJECT NFSS Bop Field Invest. (PE1 Excavation)
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1430 Russo starts pumping water from pipe stickup at PE1 PIPE 1. to green poly tank on trailer on east side of IWCS fence (trailer on access road).

1544 Russo has pumped ~875 gallons from PE1 PIPE1 (they have been having some freezing problems with diaphragm pump). Russo removes about 5' of blue poly stickup pipe and continues pumping.

1615 Russo says head in stickup is down inside the 10" water line (about 1150 gallons pumped).

1430 Russo removes stickup & water level is half-down into PIPE 1. Approx. 1300 gallons pumped. [redacted] closes valve for the night, secures equipment, and head back to staging area to pump water into 1500 gallon poly tank on ground. I labelled the tank.

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[redacted]

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Date Signed Date

1720 Russo has completed pumping and is leaving for the day. [redacted] will let them out & also leave for the day.

1730 I leave site for the day.

[redacted]

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PROJECT NFSS BOP Field Invest. (PE1 Excavation)

Notebook No. 1

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URS: [redacted]

USACE: [redacted]

Russo Development: [redacted] box truck, trailer, John Deere 200LC excavator

Equipment: Pine. Env. rental MultiRAE Plus ([redacted]

Wx.: 36°F, overcast, windy from WSW

0705 I arrive on site, pack yesterdays samples all into 1 cooler for lab courier pick up today.

0740 Russo crew arrives on site.

0745 Mobe to PE1 excavation location. No groundwater seepage into PE1 overnight.

I perform downhole air monitoring with MultiRAE Plus

CO = 0 ppm
VOC = 0 ppm
H_2S = 0 ppm
LEL = 0 %
O_2 = 20.9%

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[redacted] 11-29-12

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Russo sets up ventilator hose and preps equipment for trench box entry to check water level in PE1 PIPE 1.

0815 Upon opening the valve, a lot of gas came out of pipe. Readings on venting gas were

CO = 2 ppm
LEL = 4 ppm
VOC = 0.9 ppm
O_2 = 20.7
H_2S = 0

Water then started to come out of valve.

0820 Russo attaches blue poly stickup to valve and will continue pumping to reduce head in pipe.

0821 Discharge hose on diaphragm pump sprung a leak. Russo stops pumping.

0835 Russo removes damaged hose, checks other lines, and then resumes pumping

0845 Russo still having issues with frozen lines.

0850 Back to pumping.

NOTE [redacted] (USACE) gave us permission to use old concrete decon pad in area of IE trenches as base for our decon pad when we start IE trenching. We need to do rad. scans on pad before & after use.

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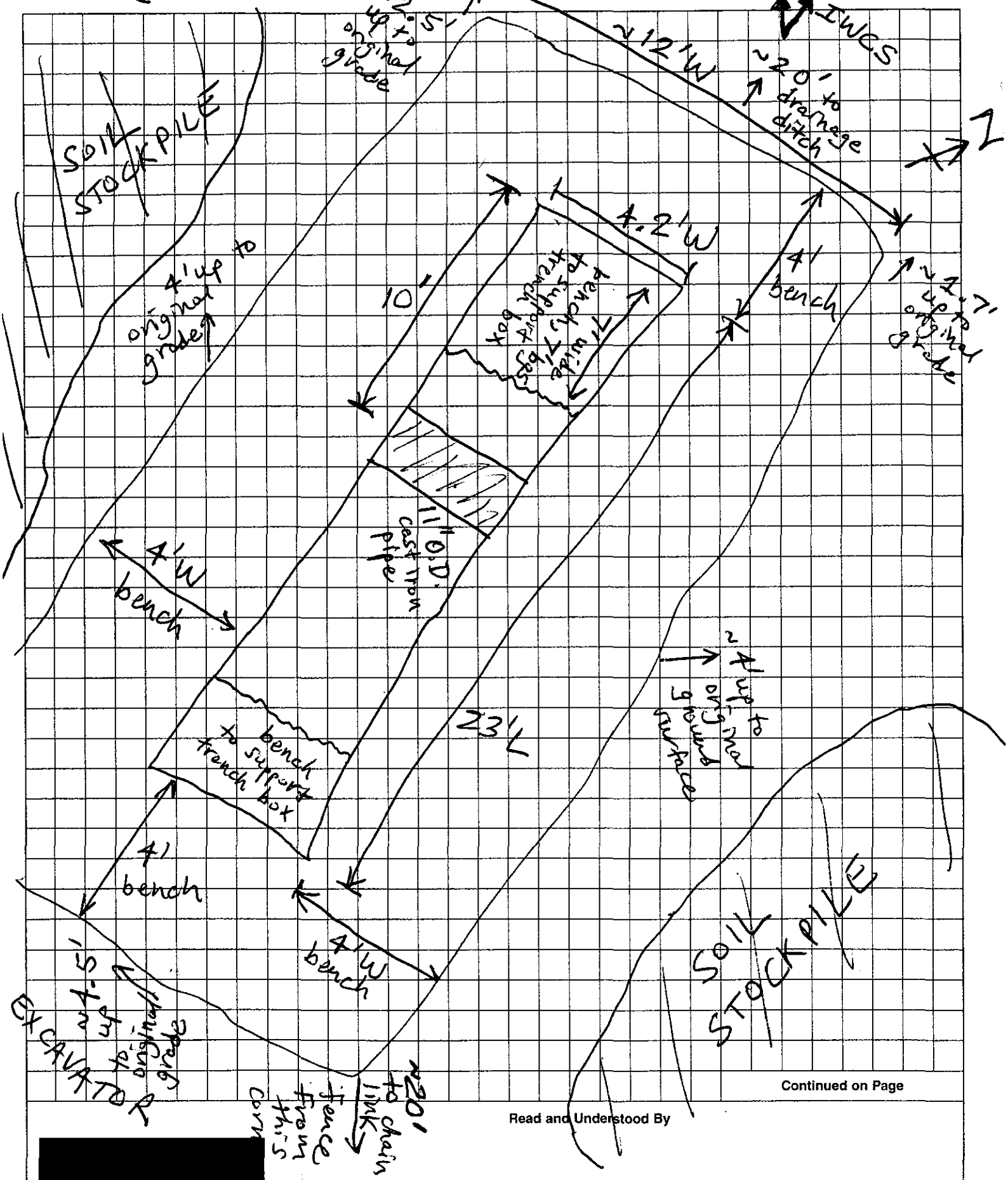

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Read and Understood By

[redacted]

Signed | Date 11-29-12 | Signed | Date

0900 Russo switched to a shorter blue poly stickup pipe (head has dropped). Pumped about 325 gallons into green poly tank on trailer.

0914 Russo removed saddle valve assembly from pipe and water level is down into pipe. They start cutting window into pipe with Stihl chop saw with diamond blade. (~10" x 10" window)

SAMPLE I.D.: PE1 PIPE1SED-0123

TIME: 0920

Analyses: ISO U/ISO Th

Description: hard black scale from inside of pipe (3 small pieces)

(limited volume <2 oz.)

no odor (but its very windy outside), PID = 0.0 ppm

0920 [redacted] (with gloved hand) recovered a very limited volume of black scale from inside of pipe. Probably not enough to send to offsite lab for analysis, but we will scan it with field rad. instruments & USACE XRF gun.

0925 [redacted] starts plugging PIPE 1 with SPEED CRETE RED LINE cement.

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PROJECT NFSS BOP Field Invest. (PE 1 Excavation)

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0945 Russo has PE 1 PIPE 1 filled to top with cement (~3 x #50 bags SPEED CRETE RED LINE), plugged ~1' into pipe on each end of window.

1030 Russo takes trailer with green poly tank (~325 gallons from PE1PIPE1) back to staging area to pump into 550 gal. white poly tank on ground using electric submersible pump.

1100 Russo goes to old concrete decon pad to pump out surface water (rain/snow) in pad (approx. 15' x 25' x up to 5" deep area).

1120 Pumped about 500 gallons from concrete decon pad into green poly tank on trailer.

1130 Transport water to staging area and pump from green poly tank into E-tank frac tank using electric submersible pump.

notes for 11-29-2012

[CONTINUED IN NOTEBOOK #2, page 1]

Continued on Page

Read and Understood By

[redacted] 11-29-12

Signed Date Signed Date

[CONTINUED FROM MY NOTEBOOK #1, page 100]

1145 Russo has finished pumping concrete decon pad water into frac tank, they go back to PE 1 excavation site to dry decon (scrape) equipment.

1215 LaFarge concrete truck (#0405) arrives on site. (NYS Plate #54181-KA)

Performed downhole air monitoring prior to [redacted] entering trench box

CO = 0 ppm VOC = 0 ppm
H_2S = 0 ppm LEL = 0%
O_2 = 20.9% (same as bkgrd.)

Also performed continuous downhole air monitoring while Mike was in trench box (no readings significantly different than bkgrd.)

1220 [redacted] places excavator bucket over fence, concrete truck fills bucket, [redacted] places concrete over pipe in PE 1 trench. Covered pipe with ~1.5 yards of concrete (about 1' of concrete above & below pipe). [redacted] smoothed concrete with a shovel and compacted it around pipe by foot. Concrete had a quick setting additive added to speed setting, we should be able to backfill excavation PE 1 later today.

Continued on Page

Read and Understood By

[redacted] 11-29-2012

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1240 [redacted] truck leaves site. Russo continues dry decon of their equipment.

With [redacted] I

1300 Went to valve pit/house SW of PE1 excavation → water in valve pit was gone, did we pump it dry when we evacuated water from PE1 PIPE 1? NO

1305 [redacted] and [redacted] had checked the valve pit/house yesterday before the pumping at PE1 PIPE 1 had begun, and water level was already near bottom of valve pit/house.

([redacted])

1315 Russo goes back to concrete decon pad to pump additional water (ice has melted)

[Wx.: 46°F, mostly sunny, windy from SW]

They pumped ~75 gallons from decon pad, took water to staging area to transfer into frac tank.

1345 Russo moves catwalk over to IE area for use tomorrow.

Continued on Page

Read and Understood By

[redacted] 11-29-2012

Signed Date Signed Date

1400 Russo pulls trench box from excavation PE1.

1405 Russo begins backfilling excavation PE1 with stockpiled soils. Soil is placed back in excavation in ~2' lifts and compacted with excavator bucket.

1630 Russo finishes backfilling excavation PE1. They dry decon excavator bucket & tracks and bag up plastic sheeting.

Due to excess soil, some areas of backfilled excavation PE1 are 12"-15" above pre-excavation grade. Settlement should occur over the winter.

[redacted] performs clearance scans on excavator.

1655 Russo moves (lifts) trench box & smaller excavator bucket to east side of IWCS fence (onto grand access road).

1705 [redacted] has cleared Russo to move excavator away from PE1 and out of IWCS fenced enclosure. [redacted] tracks excavator to trench box location. They load trench box onto trailer & excavator picks up both buckets.

1730 They offload trench box at staging area & leave excavator there.

1735 Russo leaves site for the day.

1745 I leave site for the day.

Continued on Page

Read and Understood By

[redacted] 11-29-2012

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (IE 8&7 trenches)

Notebook No. 2

Continued From Page —

URS: [redacted]

USACE: [redacted]

Wx.: 32° F, overcast, strong wind from NE

Russo Development: [redacted] box truck w/ trailer, John Deere 200 LC excavator

0725 I arrive at NFSS gate, [redacted] lets me into site. I load equipment into truck and do paperwork.

0815 In discussions with the USACE Marks, they demand that all soil samples from sides & bottoms of IE trenches be collected by hand auger or Macro core samplers (not from excavator bucket).

0830 I go to Home Depot to get more pipe for [redacted] hand auger heads.

0845 Actually went to hardware store in Lewiston → purchased 3' & 10' long sections of 1/2" pipe and 2 end couplings.

Continued on Page

Read and Understood By

[redacted] 11-30-2012

Signed Date Signed Date

0905 Arrived back at NFSS site.

0930 [redacted] performed rad. scans at surface around stakes for IE8 and IE7. We pick a slightly elevated spot at each location & stake it.

1000 [redacted] & [redacted] review proposed surface soil sampling locations at IE7 & 8 and give them the O.K.. I will collect surface soil (~0-0.5') at these locations.

1010 [redacted] calls and requests inventory of IDW water in tanks and available storage capacity at staging area:

550 gallon white poly (300 gals. from PE1 PIPE1)
1500 gallon green poly (1300 gals. from PE1 PIPE1)
1500 gallon green poly (empty)
1500 gallon green poly (empty)
1000 gallon white poly (empty)
1500 gallon green poly (625 gal. - water from PE3 excavation & drilling decon)
425 gallon white poly (25 gal. from [illegible] devel.)
55 gal. drum (MW949 devel. water - fu 1/2 11)

21,000 gal frac tank (4550 gal from PE2, PE3/MH41 + 575 gal. from conc. decon pad surface water)

[redacted]
11-30-2012
Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (IE8&7 Trenches)

Notebook No. 2

Continued From Page 5

IE8 surface soil sampling location, slightly above bkgrd. on [redacted] survey today. Located 11.0' SW of staked IE8 trench location.

IE8TB10.0-0.5D-9107

SAMPLE I.D.: IE8TB10.0-0.5-0124

TIME: 1055

DEPTH: 0-0.5'

collected with SS trowel & bowl

ANALYTES: TAL metals; total U; gamma/ISO U/ISO Th

QA/QC: Duplicate

DESCRIPTION: grass at surface; brown loamy clay soil, [redacted] granular structure, many fine roots, trace angular gravel and grayish white slag pieces (slag pieces were vesicular texture, 2"-3"; more frequent at 6" depth); became clayier toward 6" bgs (brown clay)

probably fill or regrade

no odor, visible staining/contam.

sl. moist

IE7 surface soil sampling location, slightly above bkgrd. on christy's rad. scan today. Located 3.8' ESE of staked IE7 location.

SAMPLE I.D.: IE7TB10.0-0.5-0125 MS

IE7TB10.0-0.5-9108

IE7TB10.0-0.5-9109 MSD

TIME: 1115

DEPTH: 0.0-0.5'

collected with SS trowel & bowl

ANALYTES: TAL metals; total U; gamma/ISO U/ISO Th

QA/QC: MS/MSD (triple volume)

DESCRIPTION: Grass at surface. Brown loamy clay soil, granular structure, trace rounded & angular gravel, many fine roots (top 2"-3"); then became brown silty clay with gray & orange mottles, firm, blocky. Some reddish brown areas → natural color or staining/inclusions?? Could be natural reddish color variation in brown clay

2"-6" bgs

probably fill or regrade

sl. moist

no odor

no slag

Continued on Page

Read and Understood By

[redacted] 11-30-12

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IE3 surface soil sample picked by Christy's rad. survey is 4.5' NE of staked IE3 location (almost at south edge of gnt chamber dead grass strip [old ? foundation]).

SAMPLE I.D.: IE3TB10.0-0.5-0126
TIME: 1345
DEPTH: 0-0.5'
ANALYTES: TAL metals; Total U; gamma/isoU/isoTh
QA/QC: none
DESCRIPTION: Angular F-C sand & gravel in a loamy brown clayey soil matrix (fill); many fine roots, grass at surface
sl. moist

collected with SS trowel & bowl

normal earthy soil/gravel odor
no staining or visible signs of contamination

FILL

[DATE: [redacted] 11-30-12]

COMP.

SAMPLE I.D.: IE3TB4 10.2-10.6-0128 DATE: 12-3-12
TIME: 1150
DEPTH: 10.2'-10.6' bgs (3 locations)
ANALYTES: TAL metals; Total U; gamma/isoU/isoTh

DESCRIPTION: reddish brown silty clay, firm, moist, sl. plastic (wet on outside from water in bottom of IE3), trace subrounded coarse sand & gravel

used Christy's hand auger to collect samples, processed samples in SS bowl w/ disposable poly scoop

trace grayish colored silty particles

BOTTOM SAMPLE from IE3

Continued on Page 18
see pg. 18

Read and Understood By

[redacted] 11-30-12
Signed Date

Signed Date
12-3-12

1120 Russo crew arrives on site with decon pad supplies (they were late because they were stopped for a DOT inspection enroute to site). Russo will set up decon area on old concrete decon pad in area of IE trenches. Russo will fill a new poly tank they brought today with water from active hydrant (200' SE of decon area) for use for steam cleaning.

1200 I ask [redacted] about decon between IE trench (per Colin's request), he said USACE would like wet decon [i.e., steam cleaner] between IE trenches for excavator bucket & sampling equipment.

1230 Russo mobes excavator from staging area to decon area.

1300 Russo starts steam cleaning excavator bucket.

1330 Russo mobes excavator to IE8. BUT [redacted] says NYSDEC just contacted him and want to be on site for IE7 & IE8 trenches (next Tuesday 12-4-12). So, we move to IE3; [redacted] will have to do surface [redacted] and [redacted] will have to collect IE3TB10-05' soil sample.

Continued on Page

Read and Understood By

[redacted]
Signed

11-30-12
Date

Signed

Date

Sidewall sample from IE3 near NW corner
interface between reddish fill & underlying clay

COMP

SAMPLE I.D.: IE3TB23.2-3.6'-0129 DATE: 12-3-12
TIME: 1210
DEPTH: 3.2'-3.6' several locations
ANALYSES: TAL Metals; Total U; gamma/iso U/iso Th
QA/QC: none
DESCRIPTION: Top 0.2' is reddish silty clay with tr. angular F-C sand & gravel, firm, sl. plastic; bottom 0.2' is dk. brown to tan silty clay, firm, plastic, moist, tr. gravel (looks thin for ~6"-8", Mark called it a lens)

collected with hand auger, processed in SS bowl w/ disposable poly scoop

some gray areas

East wall sidewall sample in IE3,
interface between reddish fill & underlying clay

COMP

SAMPLE I.D.: IE3TB33.2-3.6'-0130 DATE: 12-3-12
TIME: 1225
DEPTH: 3.2'-3.6'
ANALYSES: TAL metals; total U; gamma/iso U/iso Th
QA/QC: none
DESCRIPTION: same as above

also

Continued on Page

Read and Understood By

[redacted] 12-3-12 ~~11-30-12~~
Signed Date [redacted] Signed Date

PROJECT

Notebook No.

Continued From Page

VOID

[redacted]

11-30-12

Continued on Page

Read and Understood By

Signed | Date | Signed | Date

NO ID

[redacted]

11-30-12

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Read and Understood By

Signed | Date | Signed | Date

1350 Russ starts excavating soil at IE3. Excavation is exactly at south edge of former grit chamber concrete foundation.

she is also scanning excavated material

Grass at surface

At 1' depth, [redacted] does a rad. scan. Material from 0-1' is angular F-C sand & gravel, trace cobbles, in a loamy brown clayey soil matrix. A piece of 3/8" ~~[illegible]~~ magenta rope is present in soil, also a metal fence post. Same material to 1.8' bgs. Then color changes to reddish brown silty clay with tr.-some sand & gravel (1.8'-3.4'), firm but not plastic, breaks up to granular texture.

FILL

FILL

angular to subangular varied color & composition

At 3.4' bgs, soil color turns to darker brown/tan/gray intermix with orange and pinkish mottles, reddish brown areas (could be setting to natural or reworked/regraded natural with overlying reddish layer).

silty clay w/ trace more rounded gravel, firm, sl. plastic, only sl. moist (regrade or natural ??)

At 7.0' bgs more gray clay content

At 7.5' bgs, F-M sand mixed in with clay (moister -- sand ~~lens~~ ?) more like → seams or partings. gray to tan

Although moister, soil seem to be generally intermixed w/ clay & not too thick

Continued on Page

Read and Understood By

[redacted]

11-30-12

Date | Signed | Date

1430 IE3 Excavation completed →
Trench is 12.5' L x 10' deep x 2.3' W. (E → W trend)

At about 8' bgs material became moister, firmer, more plastic brown silty clay w/ trace rounded gravel & cobbles (same to bottom of hole).
Few small GW seeps at bottom of hole.

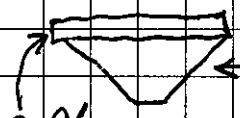
Appears more natural/ undisturbed at 8' bgs

1435 Moved catwalk over excavation & [redacted] perform rad. scans on sidewalls & bottom.

1505 [redacted] Instrument died, possibly due to cold (Wx: ~32°F, heavy wind from NE to E, light snow). They go back to Bldg. 429 to change batteries and troubleshoot problem.

this material is fine angular blocky to granular in gradation

[redacted] says grit chamber foundation may slope in toward bottom collection area. We did not hit foundation concrete below about 6.6' bgs, which is consistent with sloping sidewall.



0.9' thick conc. rim at top (about 0.7' of fill soil over this concrete)

gray FS sand (F-C well graded) natural or fill around grit chamber foundation

tan sand FS fine to very fine (have seen this at PE locations)

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Read and Understood By

[redacted] 11-30-12

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1530 Since we still need to scan sidewalls/bottom of excavation & collect soil samples, [redacted] crew leaves for the day.

Snow has become heavier.

1600 [redacted] can't solve problem, they ordered a new cord for their meter. We secure excavation for the evening. I do paperwork, label sample bottles, do COC, and offload my truck.

1630 I leave site for the day.

[redacted]

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Read and Understood By

[redacted] 11-30-12

Signed Date Signed Date

URS: [redacted]

USACE: [redacted]

WX: overcast, 43°F, calm

Russo Development: [redacted] box truck, trailer, clean water poly tank, John Deere 200LC excavator

0705 I arrive at site, load cooler & equipment, off load Macrocore sampling equipment into Conex box.

0715 Decon pad has 4"-5" of water in the bottom of it from steady rainfall yesterday (Sunday 12-2-12). Probably 0.5' of soil fall-in on bottom of much of excavation (bottom measures 9.5'-10' bgs). Water level in excavation IE3 is at 8.8' bgs. A little sidewall detachment on north wall of excavation IE3 (~5'L from 10'-8' bgs near center north wall), also on south wall 10'-8' bgs. Lot excavation stayed open over weekend with minimal problems.

Christy said she will need water pumped [illegible]

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Read and Understood By

[redacted] 12-3-12

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bottom of excavation to collect rad-scan data. I will collected a sample of water from bottom of excavation before pumping.

0835 Russo Development crew arrives on site. I ask them to pump out bottom of excavation IE3 so Christy can scan it. I also ask them to pump water out of decon pad.

0925 Pumped about 125 gallons from excavation IE3. [redacted] uses excavator to clean out bottom of excavation IE3 to get a cleaner, drier surface for rad. scanning. Took 3-4 buckets of bottom soil out. Bottom of excavation measures ~10.1' bgs.

0935 Russo preps to pump water out of decon pad. After pumping decon pad, ~500 gallons of water on & under plastic total in green poly tank on trailer (~375 gallons pumped from decon pad on & under). Russo fuels excavator.

Also 75 gallons from decon today

1045 Russo decons smaller excavator bucket with steam cleaner. Russo will take water to staging area to pump into empty ~~white~~ green 1500 gallon poly tank later today. (~575 gallons in tank after pumping)

1/2 hr. DECON TIME

0930- [redacted] is performing sidewall & bottom rad scans.

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Read and Understood By

[redacted] 12-3-12

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Water sample from bottom of excavation IE3 (probably a combination of GW seepage & precipitation).

IE3GW8.8-9.5F-0127
SAMPLE I.D.: IE3GW8.8-9.5-0127
TIME: 0815 (done at 0850)
DEPTH: 8.8'-9.5' (bottom of west side of excavation)
ANALYTES: Anions/Alk./TDS (unfiltered); TAL Metals, Total U, Ra-226, Iso U/Iso Th/Ra-228 (filtered)
QA/QC: Duplicate IE3GW8.8-9.5D-9110
IE3GW8.8-9.5DF-9110
DESCRIPTION: clear, no odor

sample collected using peristaltic pump with new, dedicated LDPE & silicone tubing (straight on end of tubing)

pH (with pH paper on unfiltered sample) was 6. Checked pH on a 4L HNO_3 preserved bottle → pH = 1.

Surface soil (0.0-0.5') sample at IE4 (located at W side of grit chamber), 5' north of staked IE4 location

SAMPLE I.D: IE4TB10.0-0.5-0131
TIME: 1240
DEPTH: 0.0'-0.5'
ANALYTES: same as IE3TB1 pg. 7
QA/QC: none
DESCRIPTION: grass at surface, many fine roots, reddish brown silty clay (little OM), tr. angular coarse sand & gravel, moist, sl. plastic, a little granular in structure

Collected sample w/ SS trowel & bowl

probably fill/regrade

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Read and Understood By

[redacted] 12-3-12
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1145 Prep to collect bottom soil sample at IE3. 5' west of east end of excavation, 10.2' bgs to bottom.
Sample I.D. = IE3TB4 (see pg. 7)

1210 Collected sidewall sample at IE3 from NW corner and area 1' east of this on north wall at interface between red fill material and underlying clay 3.2'-3.6' bgs. (See pg. 9). (IE3TB2)

1225 Collected sidewall sample at IE3 from east face at interface between reddish fill & underlying brown clay (dark brown for ~6" below reddish fill) (see pg. 9, IE3TB3)

dark brown soil beneath reddish fill looks like old top soil layer (6"-8" thick, moist, loamy clay w/tr. gravel, granular structure)

1240 Collected surface soil (0.0-0.5') at IE4

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Read and Understood By

[redacted] 12-3-12

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~5' north of staked location (see. pg. 17, IE4SB1 0.0-0.5-0131).

1250 Russo starts excavating soil at IE4 (west side of grit chamber near grit chamber 15ft station). Concrete grit chamber lip (6" thick) is on east wall of excavation, becomes thicker at N end.

At ~2' bgs, crushed barrel (black 55 gal drum and magenta rope. No elevated rad. or PID readings on drum (PID = 0.0 ppm).

Top 1'-1.5' is dk. brown loamy clay topsoil, tr. rounded gravel; then reddish brown fill to 2.8' depth (only reddish brown fill on east wall beneath concrete lip, no dk. brown topsoil) → silty clay, tr.-some angular gravel.

At north end of trench, metal pipe with sandy backfill (~2.7' bgs to top of sandy backfill, ~3.0' to top of pipe). Bedding is wet below pipe and water is flowing into trench IE4 from bedding.

angular F-C sand & fine gravel tr.

bottom of pipe at ~3.5' bgs

Almost 1' of bedding beneath pipe (~6" ϕ). liquid draining out of bedding. No drop in water level in grit chamber 15ft station manhole. Bedding also goes ~1' to N & S around pipe.

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see pg. 21

[redacted] 12-3-12

Read and Understood By

Signed Date Signed Date

Sample I.D.: IE4TB2 3.5-4.0-0132
TIME: 1315
Depth: 3.5'-4.0' bgs
QA/QC: none
Analytes: same as IE3SB1 (see pg. 7)
Description: Angular F-C sand, tr. fine angular gravel; wet, gray with some orangish brown rusty grains

collected with shovel into SS bowl, processed w/ disposable poly scoop

* bedding material beneath pipe running from grit chamber to grit chamber lift station

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Sample I.D.: IE4GW 4.0-4.5-0133
QA/QC: none
TIME: 1328
IE4GW4.0-4.5F-0133
Depth: 4.0'-4.5' (sump dug in soil beneath pipe to collect GW)
Analytes: same as IE3GW, pg. 17
Description: Unfiltered → turbid brown (no odor or sheen)
Filtered → Clear

used peristaltic pump with new, dedicated silicone & LDPE tubing to collect sample

pH on unfiltered sample = 6

* USACE also collected split samples at this location

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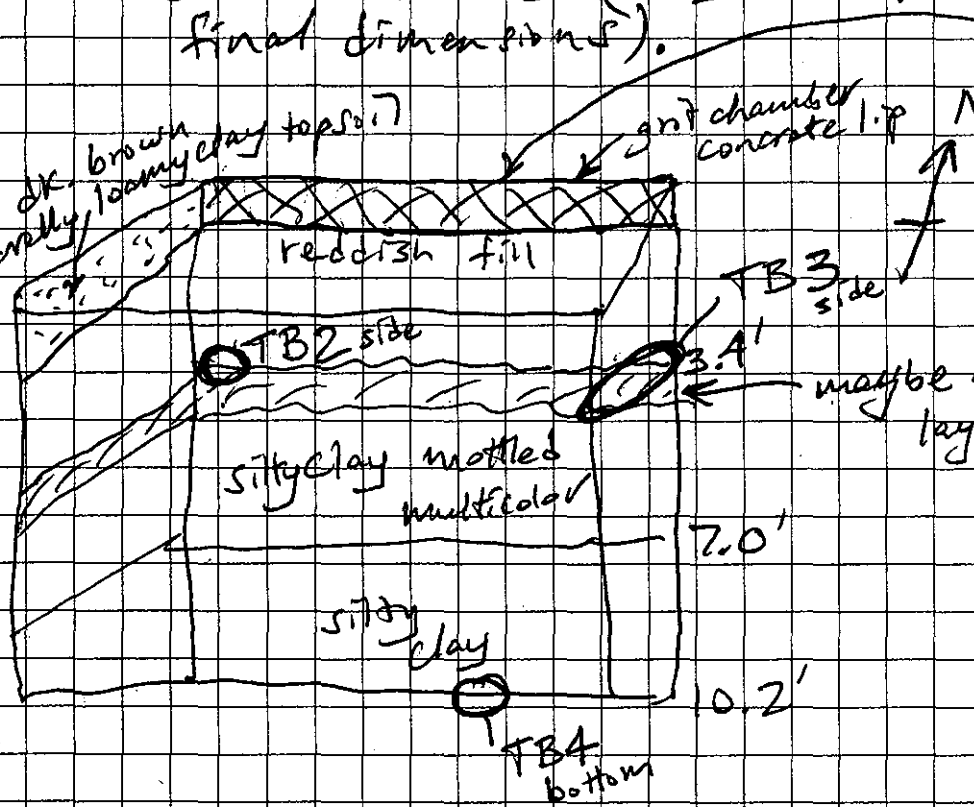
Read and Understood By

[redacted] 12-3-12

Signed Date Signed Date

1340 Russo will switch excavator buckets and back fill IE3 (2.2' W x 13' L x 10.2' deep final dimensions).



See pgs. 12-13 also

1400 Resumed excavating at IE4.

We are elevated about 2'-2.5' above surrounding area

At 2.8' depth, dk. brown, loamy clay soil (4"-6" thick → old topsoil layer ?), then brown silty clay from 3.2' down → brown to tan to gray silty clay, some orange & gray mottles, some tan silty-fine sandy partings, more gray clay content with depth to 6.0' (current bottom depth), tr. rounded gravel & cobbles (multicolored material) to 7.0' bgs

only slightly moist, very firm, sl. plastic, sl. blocky to platy structure

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Read and Understood By

[redacted] 12-3-12

Signed Date Signed Date

14:15 Continue excavating at IE4.

At approx. 7' bgs, transitions to reddish brown silty clay w/ trace rounded gravel, some tan silty-fine sandy partings, moister, more plastic, more blocky structure; there are also thicker tan silty-fine sandy areas, moist but not wet, up to 4" thick → GW does not seem to be seeping from sandier areas, just from bedding beneath pipe.

seemed to be more sandy areas 8'-10'

14:45 Russo has completed excavation IE4 → final dimensions 2.2' W x 10.5' L x 10.5' deep max at center.

N → S trend

We place catwalk over IE4 so [redacted] can do rad. scans. Russo resumes backfilling at IE3.

using larger excavator bucket

1500 Russo has completed backfilling and compacting soils at IE3, they steam clean smaller excavator bucket. Left larger excavator bucket sitting at IE3.

1530 Russo takes trailer to staging area to drop off and will then leave site for the day.

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Read and Understood By

[redacted] 12-3-12

Signed Date Signed Date

IE4 south wall sample at interface between reddish fill and dk. brown former topsoil

COMP 3 locations at hot spot (red.)

Sample I.D.: IE4TB3 2.8-3.2-0134
Time: 1625
Depth: 2.8'-3.2'
QA/QC: none
Analytes: same as IE3TB1, pg. 7
Description: same as IE3TB2 on pg. 9

collected with hand auger, processed in SS bowl w/ in disposable poly scoop

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IE4 bottom sample, 2' south of pipe, bottom measures 10' bgs

COMP - 3 locations

Sample I.D.: IE4TB4 10.0-10.5-0135
Time: 1630
Depth: 10'-10.5'
QA/QC: None
Analytes: same as IE3TB1, pg. 7
Description: brown silty clay, a ~2" thick area of tan silty fine sand, tr. gravel (rounded) moist, firm, plastic

also

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Read and Understood By

[redacted] 12-3-12

Signed Date Signed Date

PROJECT NFSS BoP Field Invest. (IE 4 Excavation)

Notebook No. 2

Continued From Page 22

1625 Collected sidewall & bottom soil samples at IE 4 based upon Christy's rad. scans.

1644 Secured excavation IE 4 for the evening.

1715 Left site to take water samples from IE 3 and IE 4 to Test America.

1800 I arrived at Test America, Amherst, N.Y. and delivered the samples to the Sample Receipt custodian.

[redacted]

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Read and Understood By

[redacted] 12-3-12

Signed Date Signed Date

URS: [redacted]

USACE: [redacted]
NYSDEC

Wx.: Overcast, 63°F, windy from SW (grnd. is wet from overnight rain)

Russo Development: [redacted] (supervisor, operator) [redacted] (laborer) — box truck w/ trailer & water poly tank, John Deere 200LC excavator

0655 I arrive at NFSS gate, await someone to let me into site. Into site at 0705.
I load equipment into my truck & label soil sample bottles from yesterday to go out to lab this morning.

0800 Russo crew arrives on site.

0810 Significant collapse (undermining) of east wall of excavation IE4 (beneath grit chamber tip and adjacent to sloping sidewall. Can't see any GW in bottom of excavation.
Because of significant excavation

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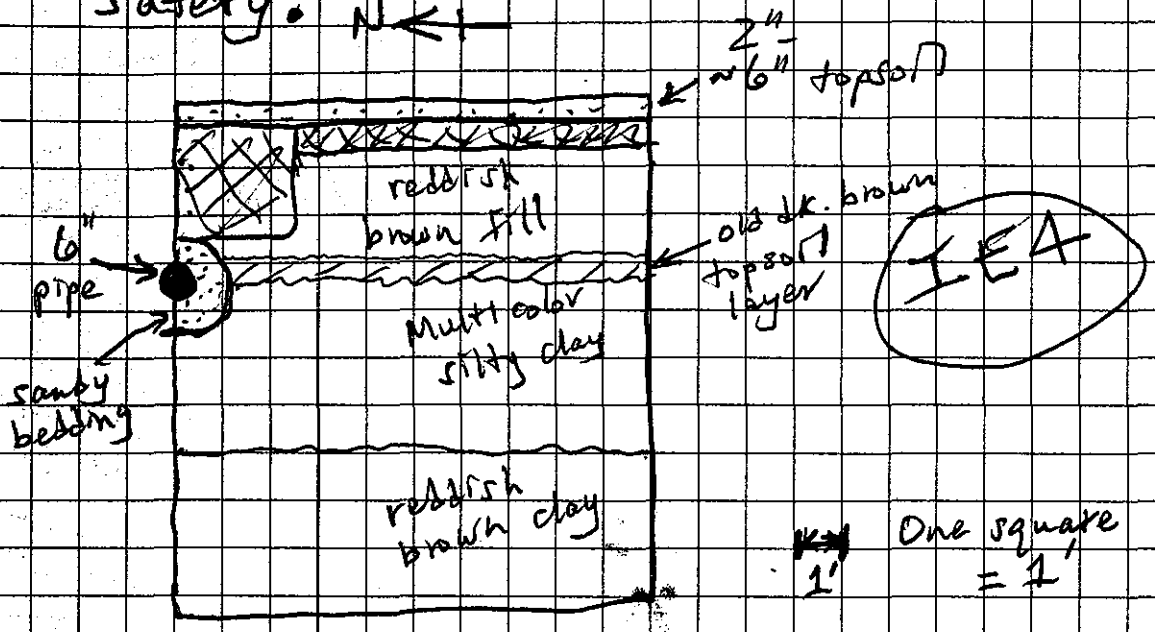
Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

collapse, I ask Russo to backfill IE4 for safety. N



0845 Russo completes backfilling IE4, moves to IE7.

Excavator is pointing towards SSW

NYSDEC John Mitchell arrives on site.

Found ~~10"~~ 36" O.D. (CI) water pipe at ~3' bgs top of pipe right beneath IE7 wooden markout stake.

Grass at surface

Top 18" is dark brown granular loamy silty clay topsoil (regrade fill) many fine roots, moist, sl. plastic tr. gravel (rounded) & cobbles

Continued on Page

[redacted] 12-4-12

Signed Date Signed Date

0910 Russo relocates excavator to face more SW to dig parallel to SW→NE trending 36 ~~10~~" water pipe.

west wall & NW wall

From 1.5' bgs downward → [redacted] brown silty clay, moist, firm, plastic, some tan to orange mottles, tan silty-fine sandy partings. At about 10.5' bgs, transition to gray more plastic, sticky clay.

at south & east ends of IE4 → More reddish fill content as we switch excavating directions to II pipeline.

15" O.D. (Mike measured smaller pipes) ~~~10"-12"~~ ϕ

0920 Found another cast iron pipe south of 36" pipe (top of pipe is ~4.3' bgs).

Russo will widen excavation to south of smaller pipe. Both pipes appear to be in clayey soils, no granular bedding material.

Hit a third pipe south of the second pipe (cast iron) ~8" ϕ (9" O.D.) at 4.5' bgs to top of pipe. also

0935 [redacted] moves excavator & will try digging on north side of 36" line to avoid hitting any additional pipes.

← some intermixed reddish fill material

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Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

0945 Some plywood & barbed steel cable pieces at about 18" bgs in excavation adjacent to north side of 36" pipe.

Rounded cobbles & boulder content in brown silty clay increased at ~ 6'-7' bgs

0955 Hit concrete at 8' bgs on north side of 36" pipe. Concrete we can see spans 8' beneath 36" pipe.

[redacted] want to excavate down along NE side of concrete to see how thick it is.

* About 2' of clay between bottom of 36" pipe and top of concrete (around sanitary sewer line?).

[redacted] says we can take bottom sample from excavator bucket (Joe pulled it from beneath NE edge of concrete, north of 36" pipe).

1045 Russo takes excavator back to decon area to decon bucket (and also my sampling equip).

Continued on Page

Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

Bottom sample from IE7 between concrete encasement around sanitary sewer

Comp.

Sample I.D.: IE7TB4 9.0-9.5- 0136
Time: 1015 (IE7TB49.0-9.5D-9112)
QA/QC: Dup.
Depth: 9.0'-9.5' bgs
Analytes: same as IE3TB1, pg. 7
Description: brown to reddish brown silty clay, tr. rounded gravel, firm, plastic, sticky, moist (little blackish color from rubbing against edge of concrete)

sample collected from beneath east lip of concrete with excavator bucket, we filled jars with disp. poly scoop from bucket

trace orange mottles

Collected from soil on bottom of 36"ϕ pipe, north side of pipe under bell connection

Comp.

Sample I.D.: IE7TB2 4.5-5.0-0138
Time: 1310
Depth: 4.5'-5.0' QA/QC: none
Analytes: same as IE3TB1, pg. 7
Description: brown very firm, plastic, moist silty clay, some orange mottles, tr. tan silty-fine sandy partings (no odor)

collected with hand auger, processed in SS bowl by glove

tr. gravel rounded

Continued on Page

Read and Understood By

[redacted] 12-4-12

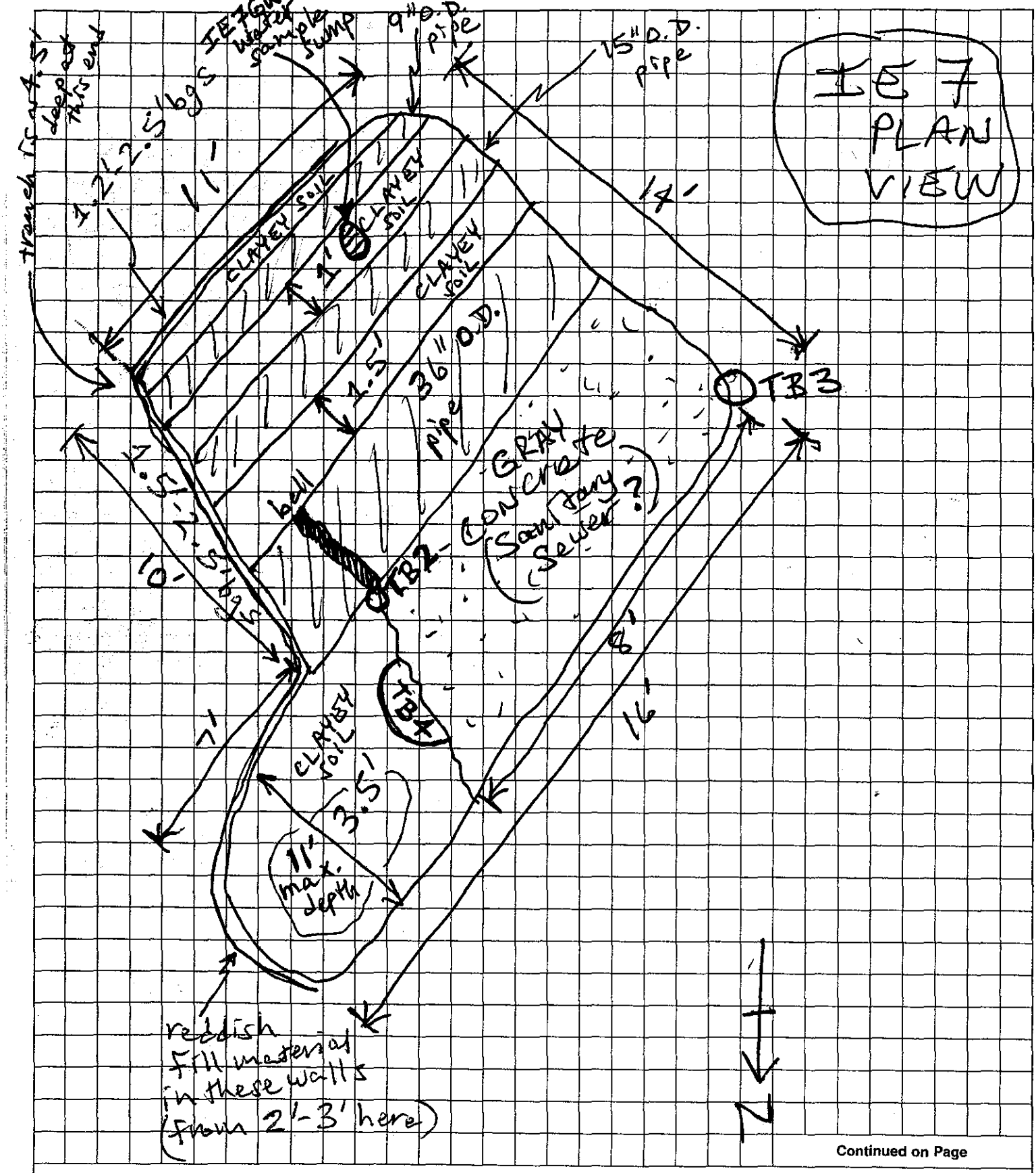
Signed Date Signed Date

NFSS Bop Field Invest.

30
PROJECT (IE 7 Excavation

Notebook No. 2

Continued From Page 29



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Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

We dig a sump between 9" O.D. & 15" O.D. pipes near SW corner of IE7 to collect a water sample (a little water is seeping into area between these pipes and on north side of 15" O.D. pipe [not enough to sample]). Also a tiny bit of seepage at 11' deep area of excavation in NE corner and a little on top of concrete → but water is only 1/2" deep and not enough volume to sample.

1115 [redacted] starts performing rad. scans on sidewalls & bottom of IE7.

IE7 vertical profile

Grassy ground surface

~15"-24" dark brown loamy clay, tr. gravel
thick

~1'-1.5' reddish fill (granular, silt-sand clay & angular grave
thick

contains solid reddish angular gravel (some slag ??? kind of

below 2.5'-3' bgs multicolor silty clay (see pg. 27)

reddish brown silty clay ← tr. rounded gravel & cobbles

10.5' bgs

Gray-Reddish brown more plastic, sticky clay

Continued on Page

Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

1230 We collect soil samples beneath 36" pipe bell (TB2) and at top of concrete (TB3).

1330 Excavator has been cleared by [redacted] we mobe to IE8 and start excavation.

IE 8 Section

Grass at surface

Top 12"-18" dk. brown loamy clay soil, moist, many fine roots, granular structure, tr. rounded gravel & cobbles

no reddish fill at this location

No signs of RR bed ballast at this trench location

then to bottom brown to reddish brown silty clay, moist, firm, plastic, some orangish to gray mottles, some gray to tan silty to silty-fine sandy partings, tr. rounded gravel & cobbles (seems a little more than usual)

1345 At 6.8' hit concrete encasing sanitary sewer line.

Some GW seeping into excavation at top of concrete.

Concrete around pipe appears more square, can see ~1' thickness on east side of trench.

1352 Collect soil sample with reverse mounted excavator bucket beneath east side concrete.

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Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

Collected from soil just above concrete at western-most corner

Sample I.D.: IE7TB3 7.5-8.0-0139

Time: 1320

Depth: 7.5'-8.0' QA/QC: none

Analytes: same as IE3TB1, pg. 7

Description: same as IE7TB2 pg. 29 (but no tar pardings)

collected with hand auger, processed in SS bowl w/ glove

GW seepage sample collected in sump dug between 9" O.D. & 15" O.D. cast iron pipes

IE7GW5.0-6.0F-0137

Sample I.D.: IE7GW5.0-6.0-0137

Time: 1230 QA/QC: none

Depth: 5.0'-6.0'

Analytes: TAL Filtered metals; Anions/Alk./TDS Unfiltered; Ra-226 Filtered; iso U/iso Th/Ra-228 Filtered; total U Filtered

Description: Unfiltered → slightly brown, no odor (pH=6), no sheen

Filtered → clear, no odor

sample collected with peristaltic pump & new, dedicated LDPE tubing

started to get filter break through at bottom of puddle, switched filters

LIMITED VOLUME (could not collect last 1L bottle)

Continued on Page

Read and Understood by

[redacted] 12-4-12

Signed Date Signed Date

Soil sample beneath east side of sanitary sewer concrete encasement.

(Comp.) Sample I.D.: IE8TB48.0-9.0-0138 40 [redacted]

Time: 1352

QA/QC: none

Depth: 8.0'-9.0'

Analytes: same as IE3TB1, pg. 7

sample collected from excavator bucket processed w/ disposable poly scoop

Descriptions: reddish brown silty clay, moist, firm, plastic, tr. rounded coarse sand & gravel, tr. tan fine sandy partings & orange mottles

(no odors)

Water sample from trench IE8

IE8GW 8.0-9.0-0138 9 41 (S.M.)

Sample I.D.: IE8GW8.0-9.0F-0138 9 41

Time: 1450 (finished at 1550) QA/QC: MS/MSD

Depth: 8.0'-9.0'

Analytes: same as IE7GW, pg. 33

collected using peristaltic pump & new, dedicated LDPE tubing from middle of trench

Description: Unfiltered → slight brownish tint (pH=8), no odor

Filtered → clear, no odor

IE8GW8.0-9.0MS-9113
IE8GW8.0-9.0FMS-9113
IE8GW8.0-9.0MSD-91134
IE8GW8.0-9.0FMSD-91134

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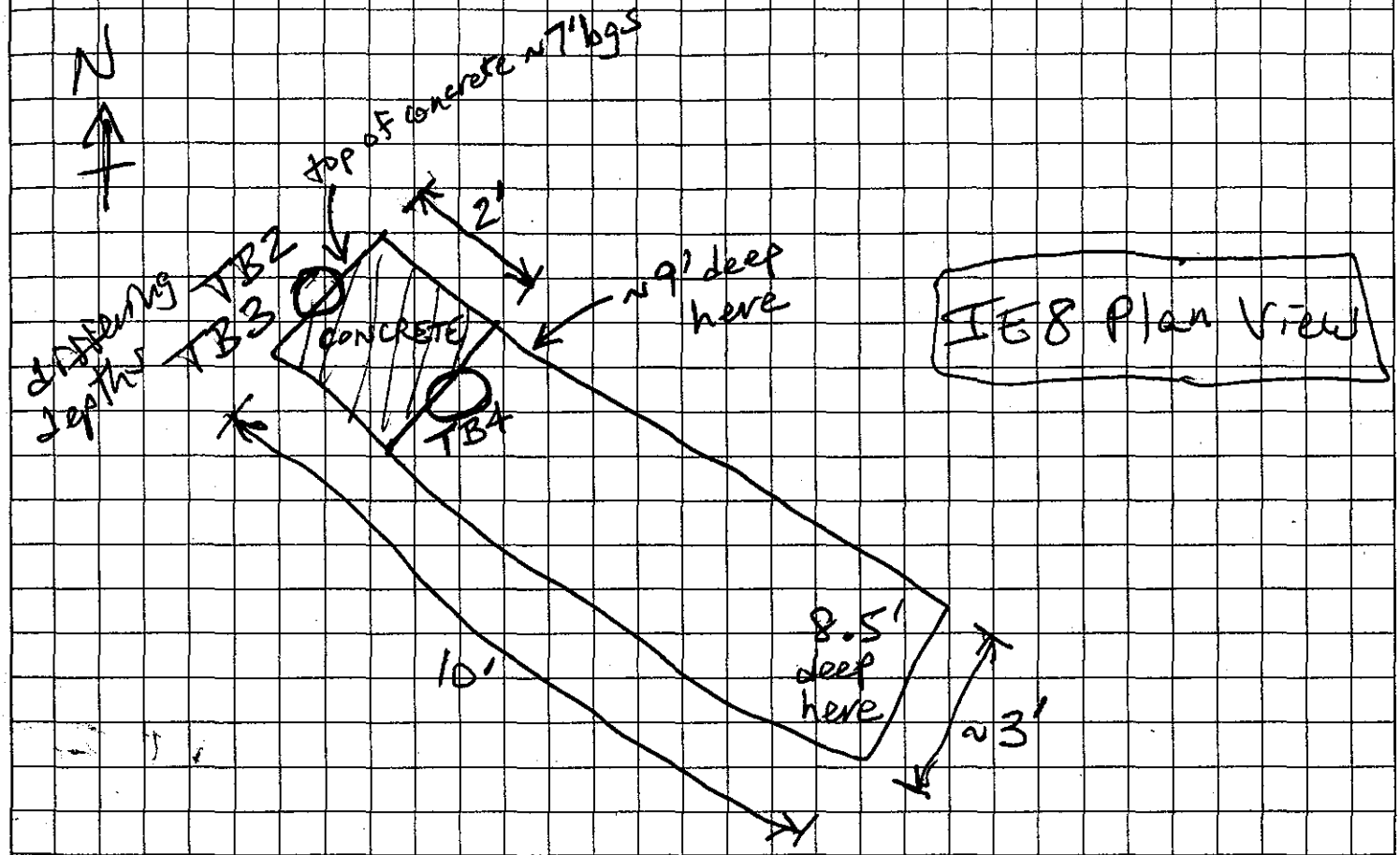
Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

1400 Russo starts backfilling excavation IE7.



1405 [redacted] starts rad. scan on IE8 trench walls & bottom.

1440 Water level in IE8 due to seepage at top of concrete is 8' bgs; I'll collected a water sample.

1445 Russo has essentially completed backfilling trench IE7 (compacted soil w/excavator large bucket)

Continued on Page

Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

Collected soil sample from [redacted] rad hotspot on west wall from 3.0'-3.5' bgs, closer to NW corner

Sample I.D.: IE8TB2 3.0-3.5-0142 [redacted]
Time: 1610
QA/QC: none
Depth: 3.0'-3.5'
Analytes: same as IE3TB1, pg. 7
Description: very hard (firm), 5% moist reddish brown silty clay, tr. gravel

Comp

Collected with hand auger & processed in SS bowl with gloved hands

[redacted] [USACE] said this sample had elevated U on XRF scan

Collected a soil sample above top of concrete at NW end of IE8, both corners

Sample I.D.: IE8TB3 6.5-7.0-0143 [redacted]
Time: 1620
QA/QC: none
Depth: 6.5'-7.0'
Analytes: same as IE3TB1, pg. 7
Description: very moist to wet version of above material, very plastic

also

Comp

Continued on Page

Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

1450 Steady rain started. Collect water sample at IE8.

1500 It looks like the water level in the sanitary sewer manhole SW of IE8 is dropping.

1530 Russo leaves site for the day.

1600 Prep to collect final 2 soil samples at IE8 (see pg. 36).

1640 Secure excavation IE8 for the evening, take equipment and samples back to Conex box.

Drop radio, battery for peristaltic pump, and MultiRAE back at Bldg. 429 to charge overnight.

1700 I leave site for the day.

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Read and Understood By

[redacted] 12-4-12

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (IE8 Excavation)

Notebook No. 2

Continued From Page —

URS: [redacted]

USACE: [redacted]

Russo Development: [redacted]

Wx: 39° F, Overcast, windy from NW

0700 I arrive at site, label yesterday's sample bottles and prep for lab pickup. Load equipment into my truck.

0800 Russo crew arrives on site.

0815 Water level in IE8 excavation is up to 3' bgs. We'll have to pump it down to backfill it.

Water level in sanitary sewer manhole SW of IE8 is 5.5' bgs (measured from NW brick rim -- spray painted orange dot on brick).

Continued on Page

Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

0826 Russo starts pumping from IE8 with electric submersible pump in green poly tank on trailer (~125 gal. already in tank from decon pad yesterday IE7 & IE8 decon).

I stake perimeter of former trench IE7.

0842 Russo has IE8 pumped down IE8 to bottom (~375 gal. pumped from IE8 -- ~500 total gallons in green poly tank). Russo starts backfilling IE8.

Water level in Manhole 6 is still at 5.5' bgs. (Mark Graham thinks it was at ~4' bgs yesterday before we dug IE8.)

0900 Russo has completed backfilling at IE8. I stake approx. trench corners. Russo moved to IE1 trench location.

0930 Russo has completed offloading 500 gallons from green poly tank on trailer to 700 gal. white poly at staging area. I label white poly tank. [redacted] asked them to leave empty green poly tank, electric submersible pump, and hose at staging area for her to scan & clear.

Continued on Page

Read and Understood By

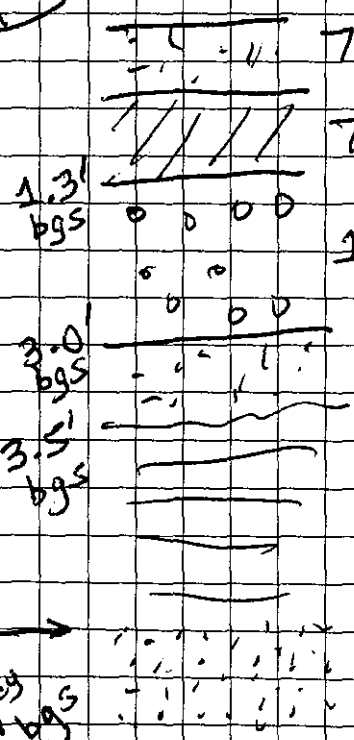
[redacted] 12-5-12

Signed Date Signed Date

0945 Russo got water from hydrant for decon.
They will load green poly tank back on trail & set pump & hose & decon large excavator bucket used to backfill at IE8 and my sampling equipment from IE8. Then pump water from decon pad in green poly tank on trailer and transfer to 1000 gal. white poly at staging area. Then leave green poly tank, pump & hose for Christy to scan & clear.

1000 Russo started excavating at IE 1 (north side of grit chamber)

IE 1 section



more sandy/gravelly areas 6'-10' than in any previous trenches

granular soil 8'-10'

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Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

Surface soil sample at IE1 (north side of grit chamber) at location indicated by Christy's rad. survey (6' east of IE1 wooden stake)

grab

Sample I.D.: IE1TB1 0.0-0.5-0144

Time: 1000

Depth: 0.0-0.5' QA/QC: none

sample collected with SS trowel into SS bowl

Analytes: same as IE3TB1, pg. 7

Description: Mixture of regraded soil → dk. brown loamy clay topsoil, moist many fine roots, tr. gravel

no odor

with inclusions/intermix of reddish fill material reddish angular gravel, F-C sand-silt-clay mixture (granular)

Surface soil sample at IE2 (east side of grit chamber) based on [redacted] survey (3.5' north of IE2 wooden stake)

grab

Sample I.D.: IE2TB1 0.0-0.5-0145

also IE2TB1 0.0-0.5-0911E

Time: 1040

Depth: 0.0-0.5' QA/QC: Dup.

Analytes: TAL Metals; Total U; gamma/isoU/isoTh

Description: Dk. brown, moist, granular loamy clay soil many fine roots & earth worms, tr. angular & rounded gravel

FILL/REGRADED →

a little reddish fill intermix at 6" depth

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Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

1012 In west end of IE 1, hit a sand lens at 6.0'-6.5' bgs and GW is seeping into trench. (brown sand & water seeping into trench

tan fine sandy material

all the way to 10' bgs

More sandy material at 8'-8.5' bgs

fine brown sand, tr. rounded coarse sand/cobbles/gravel to some

moist, but not wet

some silt & clay

Granular soil SM GM?

From 8'-10' bgs, reddish brown, granular, many fine sandy lens

1025 Russo has advanced IE 1 to 10' bgs x 2.2' W x 11' L.

1030 Russo decons excavator buckets & sampling equipment (from IE8). [redacted] starts rad. scans on soil pile, sidewalls, and bottom of IE 1.

About another ~250 gallons from decon pad → green poly tank on trailer → white 1000 gal poly tank at staging area (now 750 gallons total in this tank)

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Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

per USACE → Soil sample from 3 sandy lens in west wall of IE1 that appear to be wet & produced a little water

(Comp.) Sample I.D.: IE1TB2 6.0-7.5-0146
Time: 1150 QA/QC: none
Depth: 6.0'-7.5'
Analytes: TAL Metals; Total U; gamma/ISO U/ISO Th
Description: wet, brown fine sand, tr. med sand & silt & rounded coarse sand & gravel
SP? SW? mostly fine sand
some clayier clumps from edges
6.0-6.5' bgs 6.5'-7.1' bgs 7.1'-7.5' bgs
sand lens ~6" ø, 8" ø, & about 1.5' long x 4" thick

collected with hand auger into SS bowl for processing w/ disp. poly scoop

Soil sample (highest rad. cps) from west wall of excavation, interface between reddish fill & old topsoil layer

(Comp.) Sample I.D.: IE1TB3 3.0-3.5-0147
Time: 1205 QA/QC: none
Depth: 3.0'-3.5'
Analytes: same as above
Description: reddish brown fill (silt-clay-gravel) granular & dk. brown loamy clay granular, sl. moist, tr. gravel, few fine roots (former topsoil layer)

also

FILL Regrade

Continued on Page

Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

Bottom sample at IE 1 at west end of excavation

Sample I.D.: IE1TB49.5-10.0-0148

Time: 1215 QA/QC: none

Depth: 9.5'-10.0'

Analytes: same as IE1TB2, pg. 43

Collected with hand auger into SS bowl, processed w/ disp. poly scoop

Description: brown to reddish brown silty-clay fine sand, tr. M & C sand & fine gravel (subrounded to rounded)

moist to wet

collection area is at edge of GW collection sump

Water sample from IE 1, sump at west end [redacted]

Sample I.D.: ~~IE1GW9.5-9.8-0149~~

Time: ~~1340~~ QA/QC: none

Depth: ~~9.5'-9.8'~~

Analytes: same as IE7GW, pg. 33

Description:

NO SAMPLE COLLECTED * Trench wall collapsed on top of sampling tubing as peristaltic pump was started

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Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

NFJJ BOP Field Invest.

PROJECT (IE Excavation)

Notebook No. 2

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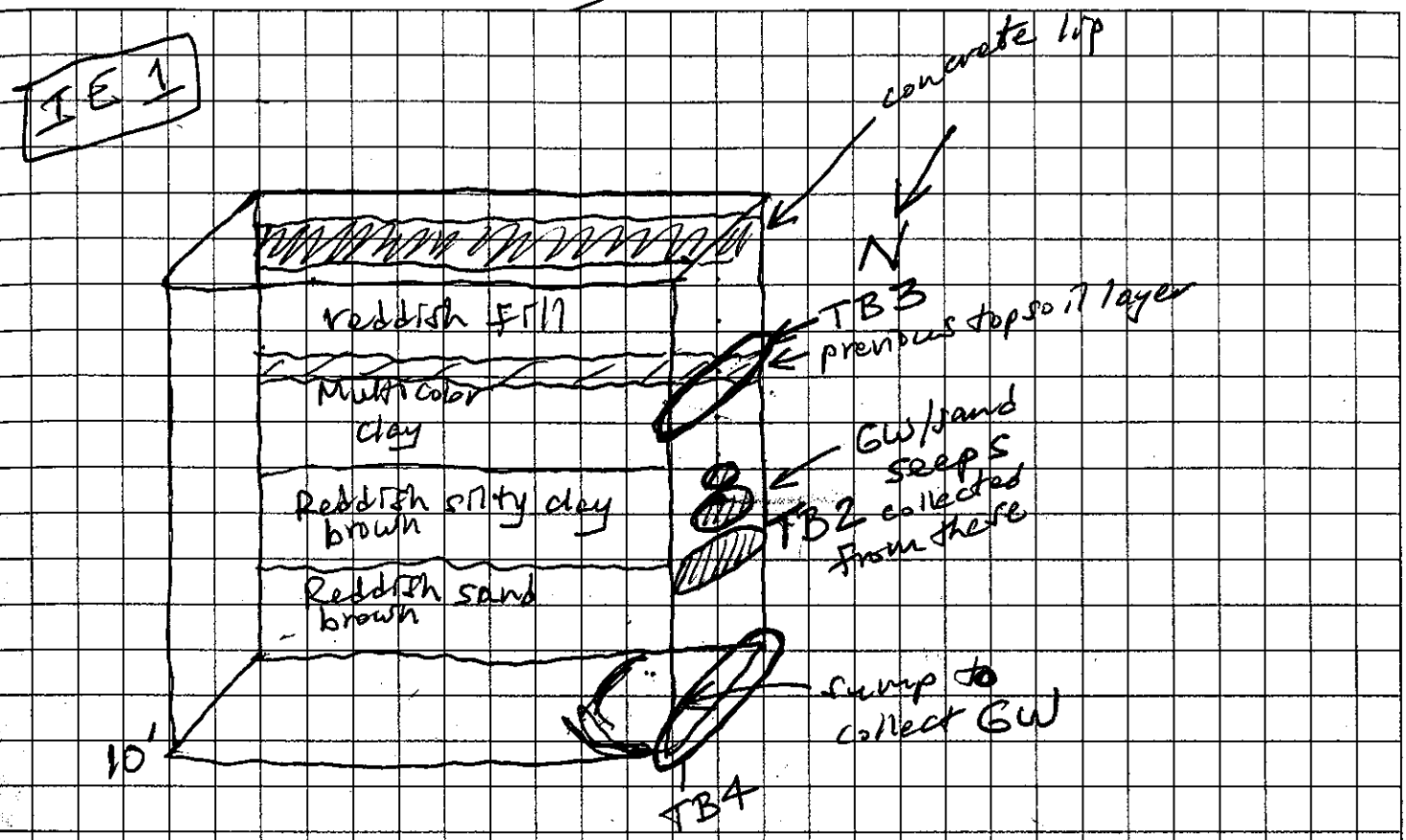


Russo decomned excavator bucket & my sampling equipment (1/2 hr. DECON TIME)

1330 Set up to collect GW sample in sump at west end of IE 1. Water in collection sump is only about 1" deep (sample volume will be limited)

1340 Trench wall at IE 1 collapsed on top of sample tubing, NO GW sample could be collected at IE 1

1345 Russo backfills excavation IE 1.

1355 Russo completed backfilling IE 1 with clean large bucket.

1400 Move to IE 2, will start excavation 6.5'S of wooden stake near pipe from decon pad to grid chamber.

Continued on Page

Read and Understood By

[redacted]

Signed

12-5-12

Date

Signed

Date

1403 Hit pipe bedding material at ~1.5'-2' bgs
gray angular F-C sand, tr. gravel
(similar to pipe at IE4)

1405 Found top of pipe at 3.5' bgs, about 1.5'
of bedding material over pipe & ~1' to either
side.

GW and bedding material flowing out at
bottom of pipe on east side of excavation and
then from west side.

Pipe is 7.5" O.D. cast iron or steel.

1410 We'll collect soil and GW samples from bedding
beneath pipe.

1445 Resume digging at IE2. Piece of rubber
or plastic at ~4' bgs (reddish fill/old
topsoil boundary).

West sidewall under concrete grit chamber
lip is collapsing.

1500 Final dimensions of IE2 [13'L x 2.3'W x 10'D]

Continued on Page

[redacted] starts rad. scans on sidewalls & bottom.

Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

Soil sample from bedding material beneath north side of pipe

grab

Sample I.D.: IE2TB24.0-4.5-149

TIME: 1415

QA/QC: none

collected w/ poly scoop into jars in 4' deep trench

DEPTH: 4.0'-4.5'

Analytes: TAL Metals; Total U; gamma/isoU/isoTh

Description: wet F-C angular gray sand, tr. angular fine gravel

some rusty looking grains

brownish water flowing around bedding

Water sample from liquid flowing out of pipe bedding at IE2

Sample I.D.: IE2GW4.5-5.0-0150

IE2GW4.5-5.0F-0150

Time: 1430

QA/QC: none

collected with peristaltic pump & new, dedicated LDPE tubing from sump in pipe bedding

Depth: 4.5'-5.0'

Analytes: same as IE7GW, pg. 33

Description: Unfiltered → very turbid brown

Filtered → Clear, then became brownish (some fines seem to go through filters

switched filters & it cleared up

Continued on Page

Read and Understood By

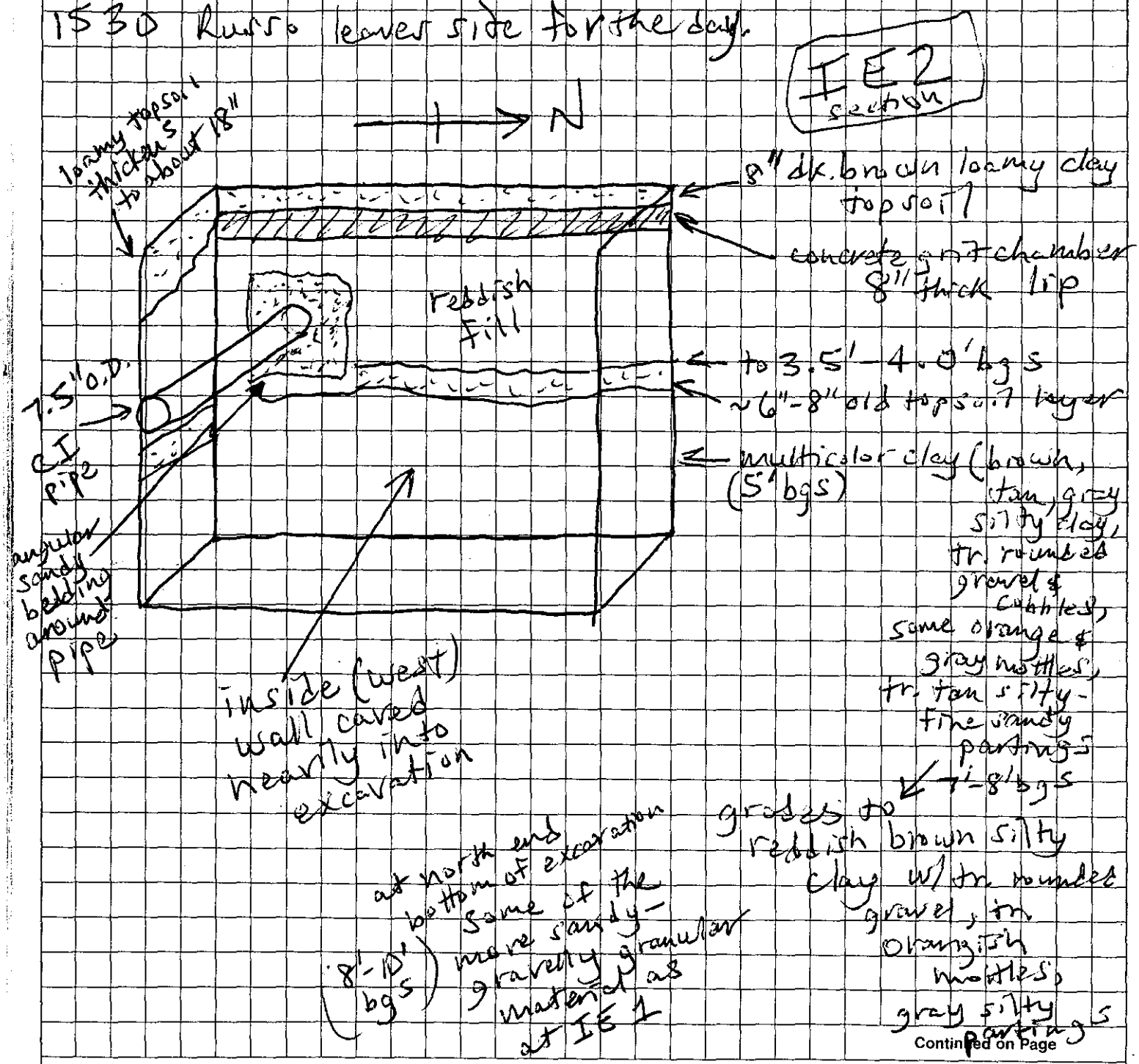
[redacted]

12-5-12

Signed Date Signed Date

1500-1515 Russo decon excavator small bucket.

1530 Russo leaves site for the day.



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Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

NFSS BOP Field Invest.

PROJECT (IE 2 Excavation) Notebook No. 2

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Sample from north wall of excavation at rad. scan at interface between reddish fill & old dk. brown topsoil layer (S.M.)

(Comp.) Sample I.D.: IE2TB3 3.5-4.0-015~~X~~2

Time: 1555 QA/QC = none

Collected with bucket auger, processed in SS bowl by gloved hand

Sample Depth: 3.5'-4.0'

Analytes: same as IE2TB

Description: same as IE1TB3 on pg. 43

Bottom sample from IE2, due to caving, only pristine bottom sample was at north end of trench

also

Sample I.D.: IE2TB4 9.0-9.5-015~~X~~1 [redacted]

Time: 1535

Depth: 9.0'-9.5'

(Comp.) Analytes: same as IE2TB2, pg. 47

Description: reddish brown silty clay, tr. rounded coarse sand and gravel

some orange & gray mottles

moist, plastic, sl. sticky

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Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

1530 We collect last 2 soil samples from IE2 excavation. Lots of cave-in on west side of excavation covering most of bottom.

1630 Have completed sampling & logging at IE2, go to trailer (Conex box) to offload equipment. Then go to Bldg. 429 to put equipment on charge.

1700 Leave site for the evening.

NOTE Russo had about 1.5 hr. Decon Time today.

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Read and Understood By

[redacted] 12-5-12

Signed Date Signed Date

URS: [redacted]

USACE: [redacted]

Russo Development: [redacted] boxtruck w/ trailer, water tank, John Deere 200LC excavator

Wx: Mostly clear, 23°F, slight breeze from east

0700 I arrive on site, fill my truck with equipment and label yesterday's samples & pack for lab pickup.

0750 Russo crew arrives on site, preps to backfill excavation IE2.

0800 A little water in south end of IE2 (~3'x 1.5'x 4" deep puddle) beneath pipe. Sidewall collapse about the same as last night.

0820 [redacted] backfilling IE2.

0845 [redacted] has finished backfilling IE2, moves to IE5.

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Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

I take surface soil sample at IE 5.

Will start IE5 at north edge of pipe markout to expose pipe & backfill, then proceed to the NNE. Excavation will be about 5' west of staked location to avoid concrete pad on old decon pad.

0900 Jeff starts excavating at IE5.

Top ~8" dk. brown loamy clay (moist)

REDDISH FILL 0.6'-2.2' bgs

Then reddish brown angular gravelly silty-clay-sandy fill soil (more gravelly 1"-2" size than usual) (sl. moist)

at about 1.8' bgs, hit gray F-M angular sand & fine gravel backfill around pipe (1.8'-3.4' bgs around pipe)

bottom of backfill silty

hit top of pipe at 2' bgs
backfill extends about 1' to N & S around pipe (steel or CI pipe ~7.5" O.D.)

silty clay

GW is seeping from pipe backfill, we dig sump on north side of pipe to collect water

below reddish fill 2.2' → silty is multicolor gray/brown/tan clay with orange & gray mottles & tan sandy-silty portings

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Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

NFSS BOP Field Invest.

PROJECT (IES Excavation)

Notebook No. 2

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Surface soil sample from IES (NW corner of old concrete decon pad), 8' NW of staked IES location. Location based on [redacted] rad. survey.

grab

Sample I.D.: IES-TB1 0.0-0.5-0153

Grass at surface

Time: 0850 QA/QC: none

Depth: 0.0-0.5'

Analytes: TAL Metals; Total U; gamma/isotopic U /isotopic Th

sample collected w/ SS trowel & SS bowl

Description: Dark brown loamy clay topsoil, moist, granular texture, many fine roots & earthworms tr. angular → rounded coarse sand & gravel; angular gray gravel content increases at 6" bgs

---

Soil sample of backfill (bedding) material around pipe → beneath north side of pipe where GW is seeping

comp.

Sample I.D.: IES-TB2 2.7-3.2-0154

Time: 0925 QA/QC: none

Depth: ~~2.3'-2.8'~~ 2.7'-3.2'

Analytes: Same as above

collected in 4' deep excavation with disposable poly scoop into SS bowl

Description: wet, gray angular F-C sand & fine gravel; some orangish rusty grains

Continued on Page

Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

Groundwater sample from IE5 of liquid seeping out of granular backfill around pipe (appears to be wet from 2.7'-3.4' bgs)

IE5GW2.7-3.4-0155

Sample I.D.: IE5GW2.7-3.4F0155

Time: 0945 QA/QC: none

Depth: 2.7'-3.4

Analytes: Unfiltered: Anions/Alk./TDS; Filtered → TAL Metals, Total U; Ra-226; iso U/iso Th/Ra-228

collected from clay sump at bottom of granular fill with peristaltic pump & dedicated new LDPE tubing

Description:

Unfiltered → turbid brown, no odor

pH=6-7 (pH paper)

Filtered → Clear, no odor

Soil sample from NW corner of IE5 excavation at approx. interface between reddish fill layer and underlying brown to dk-brown silty clay or loamy clay former topsoil

Sample I.D.: IE5TB32.0-2.4-0157

Time: 1150 QA/QC: none

Depth: 2.0'-2.4'

Analytes: same as IE5TB1, pg. 53

Comp.

collected with SS spoon & bowl

Description: reddish brown to brown silty clay with some multicolored (gray, red black) angular F-C gravel, tr. F-C sand

FILL/REGRADE

granular to fine blocky texture, only slightly moist, hard & compact (had to chip sample from wall)

Continued on Page

Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

Bottom soil sample from excavation IE5, collected in center of trench

Comp

Sample I.D.: IE5TB4 11.0-11.5-0158
Time: 1200 QA/QC: none
Depth: 11.0'-11.5'
Analytes: same as IE5TB1

collected with hand auger into SS bowl

Description: moist to wet reddish brown silty clay with some rounded to subangular coarse sand and gravel (GC?)

wet due to GW accumulation in bottom of excavation (mostly from pipe bedding, but may be some GW seepage 10'-11' bgs)

plastic

more gravel content than I have previously seen

Grab

Surface soil sample at IE6, based on [redacted] surface rad. survey, 1.5' east of wooden stake for IE6

Grass at surface

Sample I.D.: IE6TB1 0.0-0.5-0156
Time: 1140 QA/QC: none
Depth: 0.0-0.5'
Analytes: same as IE5TB1, pg. 53

collected with SS shovel & bowl

Description: rounded to angular coarse sand and gravel (up to 2.5") mix, mostly gray, in a dark brown loamy clay topsoil matrix
moist

many fine roots

FILL

Continued on Page

Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

sometimes below reddish fill, maybe just more regrading here

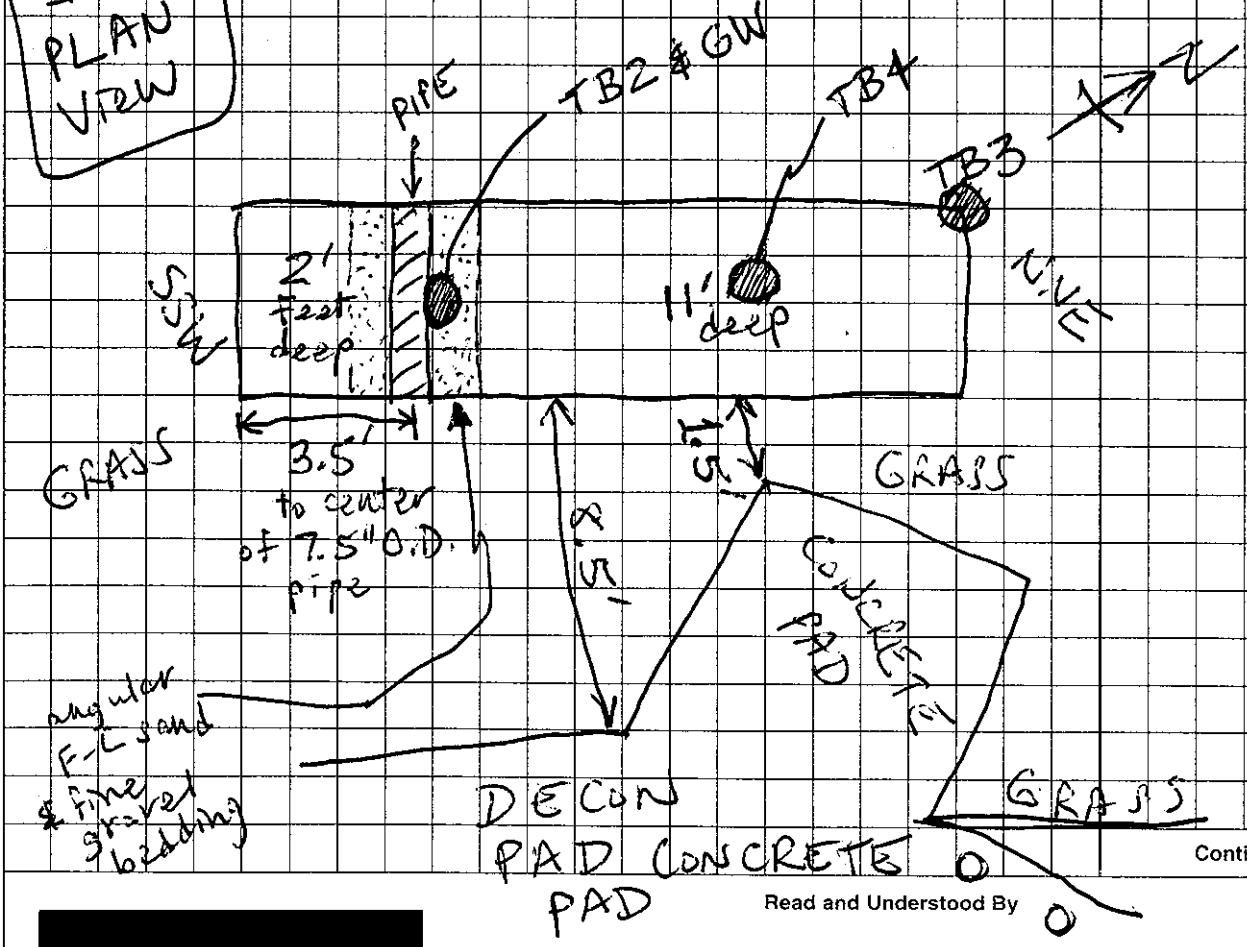
The dark brown soil layer below (former topsoil) usually the reddish fill is farther down in this trench. There is about 8"-12" of regraded brown silty clay soil beneath reddish fill, then ~6" dk. brown layer (looks regraded & discontinuous in thickness), then multicolor color silty clay is beneath this.

1030 [redacted] resumes excavating at IE5.

1045 [redacted] completes IE5 excavation.

IE5 PLAN VIEW

11' Deep max. x 15'L x 2.2'W



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[redacted]
Signed

Read and Understood By

12-6-12
Date

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Date

1045–1115 Russo steam cleans excavator bucket & my sampling equipment. Christy starts rad. scans at IE5.

1115 Russo crew left site to go to lunch.
1200 Russo back from lunch. [IE5 section]
At about ~7' bgs, multicolor silty clay transitions into reddish brown silty clay, fr. rounded to sub-rounded gravel, cobbles and a small boulder (moist, firm, plastic)
Reddish brown silty clay from 7'–11' bgs

gray silty partings & gray colored silty clay areas

NW → SE trend

1215 Russo starts back filling IE5.
1245 Russo starts IE6. [IE6 Section]
(FILL) Top 12" is gray (#3 crusher or bank run) angular gravel mix (F-C sand, gravel to 2.5" or 3") with geotextile at base (ramp to decon pad)
mixed with dk. brown loamy clay topsoil on SE end of trench (IE6TB1)

silt-clay F-C sand-gravel angular granular texture moist to wet → then underlain by ~1' of reddish fill (to 2' bgs)
then 8" dk. brown old topsoil layer (to 2.7' bgs)
then multicolor silty clay to ~6.5' bgs
blocky to platy texture
brown to gray to tan silty clay w/orange & gray mottles, tan silty-fine sandy partings & lens to 3" thick
to brown to yellowish brown

Continued on Page

Read and Understood By

[redacted]
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12-6-12
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Black layer below reddish fill in NE corner of of IE6 (old topsoil layer ??)

(Comp) Sample I.D.: IE6TB2 2.5-3.0-0159
Time: 1413 QA/QC: none
Depth: 2.5'-3.0'
Analytes: TAL metals; total U; gamma/isoU, isoTh
Description: matte black, moist clayey silt [redacted]
slightly sticky, but not very plastic
organic ??

collected with long-handle shovel (steam cleaned) into SS bowl

split with USACE

wet were water seeping from overlying layers passed over it

no odor

Sample from NE corner of excavation 6.0'-8.0' based on Christy's rad. survey

(Comp) Sample I.D.: IE6TB3 6.0-8.0-0161
Time: 1455 QA/QC: none
Depth: 6.0'-8.0'
Analytes: TAL Metals; total U; gamma/isoU/isoT.

Description: sl. moist, firm, sl. plastic reddish brown silty clay, some orange & gray mottles, tr. gravel

collected with hand auger into SS bowl

Continued on Page

Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

Bottom sample from IE6, [redacted] got higher rad. readings on reddish gray/gray clay boundary in spoils pile

comp.

Sample I.D.: IE6TBA11.5-12.0-0160
Time: 1430 QA/QC = none
Depth: 11.5'-12.0'
Analytes: TAL Metals; Total U; gamma/iso U/iso Th

collected with hand auger into SS bowl

Description: very moist, sticky, extremely plastic brownish gray to reddish brown silty clay
couple pieces of angular fine gravel [redacted]

Groundwater sample from IE6, bottom of excavation

mainly seepage from 0-2' layers

IE6GW11.0-11.5F-0162
Sample I.D.: IE6GW11.0-11.5-0162
Time: 1515 QA/QC = none
Depth: 11.0'-11.5'
Analytes: Anions/Alk./TDS (unfiltered); total U (filtered); TAL Metals; Ra-226 (filtered); iso U/iso Th/Ra-228

collected w/ peristaltic pump & new, dedicated LDPE tubing

Description:
Unfiltered → turbid brown
no odor pH = 6 (pH paper)

Filtered → light brown → switched filter → still light brown

limited volume (~3L) on 4L poly due to trench sidewall collapse on tubing, puddle in bottom of trench

Continued on Page

Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

1302 Completed digging IE8 → final dimensions

12' L x 11.5' deep x 2.7' W

IE6 section

Geotextile extends about 3' southeastward from NW end of trench.

Uppermost material 0 → 6"-1' bgs is moist

Material from approx. 6"-1' bgs to approx. 2' bgs (gravelly upper layer & reddish fill) is wet and seeping water

Boundary between reddish fill & dk. brown loamy clay is uneven/regraded.

Some of this is black, compact almost dry silt (organic material?)

Gravelly layer thins to SE toward gravel access road

1320 No real GW accumulation in bottom of excavation.

IE6 section

6.5'-11' bgs

beneath multicolor silty clay is reddish brown silty clay, only sl. moist, firm, sl. plastic, many silty gray partings, tr. gravel, blocky texture

11'-11.5' bgs

At bottom of trench → moist, very plastic, sticky gray to reddish gray fat clay [redacted]

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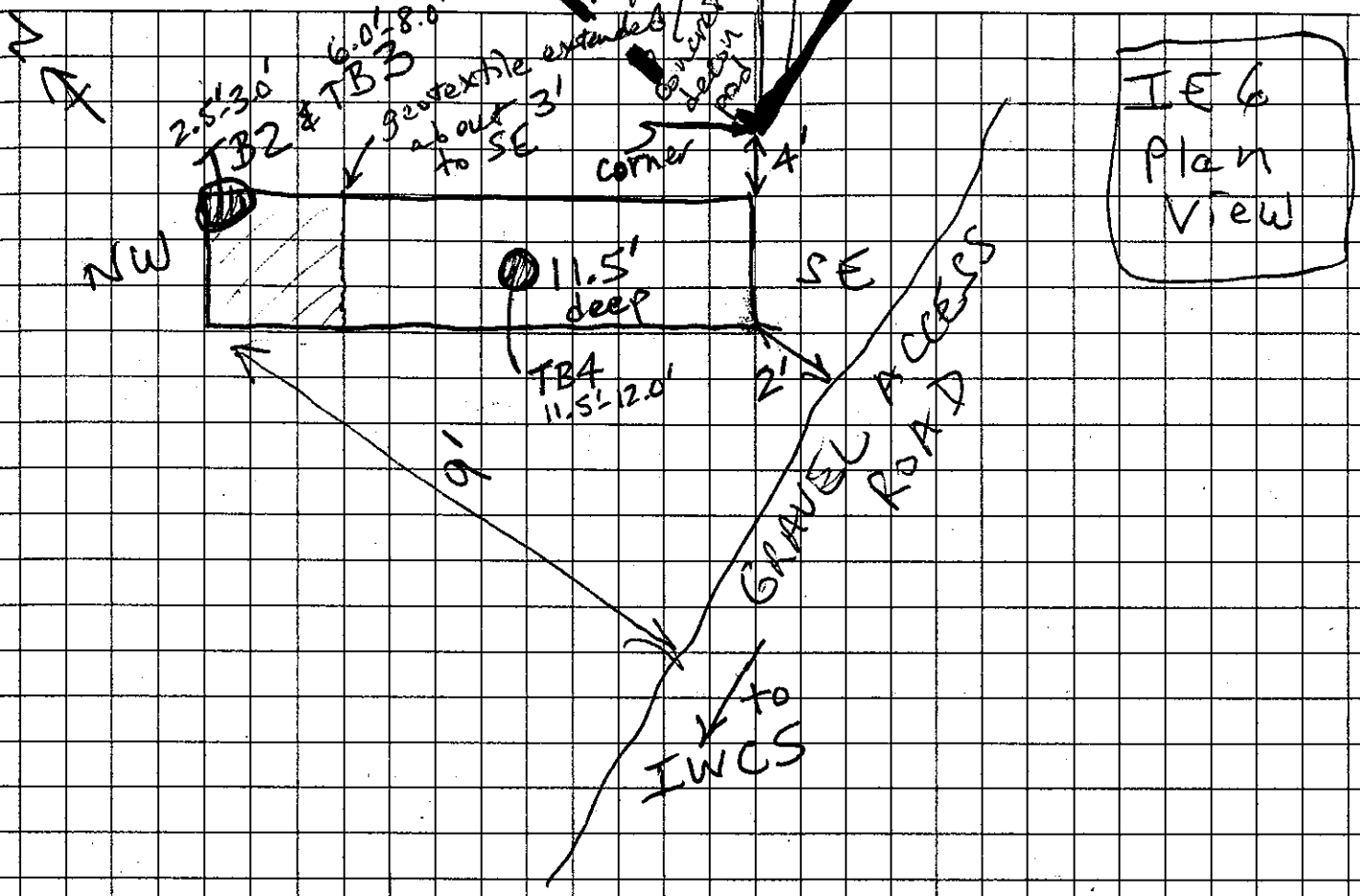
Read and Understood By

[redacted]

12-6-12

Signed Date Signed Date



1530 Russo starts back filling trench IE6.

1545 Russo has finished backfilling excavation IE6.

1600 Russo crew leaves site for the day.

1630 I leave site for the day.

Continued on Page

Read and Understood By

[redacted] 12-6-12

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (Sample Prep; Utility Location) Notebook No. 2

Continued From Page —

URS: [redacted] all personal vehicles

USACE: [redacted]

Wx.: 43°F, overcast, breeze from SW

Russo Development: [redacted] box truck

0708 I arrive at gate, await someone to let me into site. I label yesterday's soil samples

0830 Russo crew arrives on site to do utility locates for PE4 → PE6 pipeline locations for excavation/plugging next week.

We go to proposed location PE4 (SW of IWCS) to try to locate pipe. After connecting to valve pit ground wire inside IWCS, we are able to locate pipe at southern perimeter fence (PE4 location). Depth may be 6'-8' bgs per Russo's locator instrument.

Continued on Page

Read and Understood By

[redacted] 12-7-12

Signed Date Signed Date

I find MH08 → drive up access is probably
& stake not so good for heavy trucks.

MH08

* 9.8' bgs depth to bottom
* 4.2' bgs depth to water
* ~4' ø in area filled with water

slightly soft bottom, maybe a couple inches of sediment

What do we do with water in manhole?

1010 We go to proposed PE4 location at north end of Modern Landfill property.

Based on location of valves for fire protection lines, we think we've located 2 water lines but can't get a signal for 36"ø cooling water line.

1112 Go to PE5 location (northern fenceline between NFSS and WM properties). We traced pipe to fenceline, locator instrument indicated maybe ~7' bgs to top of pipe.

1200 Russo crew leaves site for the day. [redacted] will do surface rad. surveys at locations identified as pipeline by Russo.

Continued on Page

Read and Understood By

[redacted] 12-7-12

Signed Date Signed Date

1230-1330 LUNCH

1345 Set up to collect water & sediment samples from MH08. Depth to water at MH08 is ~4.2' bgs. I'll set tubing intake 2' below water surface.

1526 Completed sampling at MH08. There were several inches of sediment (~4"-5") in portions of the manhole bottom, other areas were shallower with no sediment (proper??). Water in manhole is murky & I can't see the bottom configuration.

1530 Went back to Conex box to do sample labels & COCs.

1645 I offload equipment from my truck & reload some clean garbage to take for disposal.

1700 Left site for the day. Rob took samples to lab.

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Read and Understood By

[redacted] 12-7-12

Signed Date Signed Date

Water sample from MH08
MH08MH6.2-0163
MH
Sample I.D: MH08GW6.2F-0163

Time: 1400

collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Depth: 6.2' bgs (tubing intake)

Analytes: Unfiltered VOA; SVOA; Pest.; PCB; TAL Metals; Anions/Alk/TDS; Total U; Ra-226; Iso U/Iso Th/Ra-228 (Filtered Total U; Ra-226, TAL Metals, Iso U/Iso Th/Ra-228)

Description:

Unfiltered → Clear, no odor
pH = 7
no visible signs of contamination

Filtered → Clear

Sediment sample from bottom of MH08, collected with extendable pole sampler with 16oz. poly sample container (new, dedicated) on end, processed in SS bowl w/ disposable poly scoop

Sample I.D.: MH08SED9.4-9.8-0164
MH08SED9.4-9.8D-9116

Time: 1445

comp.

Depth: 9.4'-9.8' QA/QC: Duplicate

Analytes: VOCs; SVOC/PEST/PCB; TAL Metals; Total U; gamma / Iso U/Iso Th

maybe some decayed organic material

Description: Light gray to dk. gray to black saturated silt size material, fr. clay & fine sand

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Read and Understood By

[redacted]
Signed

12-7-12
Date

slight decayed organics/H_2S odor
Signed Date

PROJECT NFSS Bop Field Invest. (PE 6 Pipe Excavation)

Notebook No. 2

Continued From Page —

URS: [redacted]

USACE: [redacted]

Wx.: Overcast, 52°F, light rain, windy from SW

Russo Development: [redacted] box truck with trailer (steam cleaner on trailer)

John Deere 200LC Excavator

0655 I arrive at NFSS gate, await someone to let me in.

0705 site maint. guys let me into site, I load my truck with equipment & sample bottles for the day.

0840 Russo crew arrives on site, signs in & gets H&S briefing. Loads catwalk on trailer & takes it to PE6 location.

0900 Russo also wants to load trench box on trailer & transport it to PE6 location.

0940 Russo will steam clean large excavator bucket. & some of my sampling equipment. (1/2 hr. Decon time)

Continued on Page

Read and Understood By

[redacted] 12-10-12

Signed Date Signed Date

[redacted] will need to clear bucket before it can go to PE6.

1015 [redacted] clears Russo's large bucket, we move to location PE6.

1035 Russo has excavator & trench box at PE 6, they go back to staging area to get green 1500 gal. poly tank.

Wx.: 45°F, windy from SW, rain has stopped.

1100 Russo starts excavating at PE6.

moist to wet due to rain → Top 6"-8" loamy F-C angular sand fill (dk. brown to gray (some areas just ↑ sandy fill) / fr. angular fine gravel

then multicolor clay (brown to tan to gray silty clay with some orangish & grayish mottles, gray silty partings to 3/8" thick; at about 2' bgs, moist to wet become more reddish brown (see PE6SB1 description pg. 69) to BOB (6' bgs)

1105 Encountered top of pipe at ~4' bgs. Won't need trench box for this excavation, [redacted] steps sides near pipe.

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Read and Understood By

[redacted] 12-10-12

Signed Date Signed Date

1120 Pipe measures 11" O.D. [redacted] installs saddle clamp to top PIPE 1.

No water pressure. Russo removed saddle clamp. Just a ~~couple~~ few inches of water in PIPE 1. (5.5" to water below top of pipe)

1150 I set up to collect water sample at PE6 PIPE 1.

1225 Mike cuts window into top of pipe. (~10" x 8")

1245 [redacted] has PE6 PIPE 1 plugged with SPEED CRETE RED LINE cement. (S.M.) (~~1.5~~ 2 x #50 bags). Cement extends about 1' into pipe in both directions [SW & NE] from window and window is filled to top of pipe.

* PIPE 1 has no bedding material (backfilled with native clay), but there is a little GW seepage into trench from bottom of pipe (few inches of GW in bottom of trench).

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Read and Understood By

[redacted] 12-10-12

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Sample from beneath PIPE 1 at PE6

grab

PE6 SB1 5.0-5.5D-9117
Sample I.D.: PE6 SB1 5.0-5.5-0165
Sample Time: 1120
Depth: 5.0'-5.5' QA/QC: Duplicate
Analytes: VOCs; SVOC/Pest./PCB; TAL Metals; Total U; gamma/iso U/iso Th

collected with SS bowl & trowel

Description: brown to reddish brown silty clay, tan & gray silty-fine sand partings to 1/4", some orange & gray mottles, tr. angular gravel; very firm (difficult to pack VOA jars), sl. plastic

moist to sl. moist

Water sample from inside PIPE 1 at PE6, about 6" of water in pipe.

grab

PE6PIPE 14.5-5.0F-0166
Sample I.D.: PE6 PIPE 1 4.5-5.0-0166
Time: 1200
Depth: 4.5-5.0 QA/QC: none

sample collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Analytes: VOCs; SVOC/Pest./PCB; TAL Metals; Ra-226; Total U; iso U/iso Th/Ra-228 (also filtered for TAL Metals, Total U, Ra-226, iso U/iso Th, Ra-228)

Description: Unfiltered → clear, slight H_2S/methane odor
pH = 7 (pH paper)
Filtered → sample as above

Continued on Page

Read and Understood By

[redacted] 12-10-12

Signed Date Signed Date

Sediment sample from inside PE6 PIPE 1

grab

Sample I.D.: PE6 PIPE 1 SED-0167

Time: 1230 QA/QC: none

Depth: 4.9'-5.0' bottom of pipe

Analytes: same as PE6 SB1, pg. 69

Description: Very hard, black scale

looks botryoidal texture

difficult to break into pieces, difficult to pack VOC jars (some head space around chunks) Wet

collected with gloved hand into bowl, processed by gloved hands into sample jars

---

1250 Russo moves excavator & box truck w/ trailer & tank to MH08 to await concrete truck.

Arrival of Conveyor

1300 LaFarge Cement truck (#0444, has been to NFSS several times) (NYS Plate #54173-KA). Russo will fill excavator bucket w/ cement and transfer to MH08.

6.5 yd.³ in truck total

Initial Depth to water in MW08 is 3.6' bgs.

Russo is using smaller (clean) excavator bucket (~1/2-3/4 yd.³ capacity) to fill MH08

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Read and Understood By

[redacted] 12-10-12

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After 5 buckets of cement go in MH08, water level is up to top of MH & Russo pumps some water out with electric submersible pump. Russo pumped about 375 gallons from MH08; concrete level is at 5.4' bgs. Russo uses vibrator to vibrate concrete into pipes.

1335 Then used excavator bucket to add more concrete to MH08.

[redacted] said previous U in MH08 has been ~500 picocuries/L, so we should combine the water we pumped with IE 8 pumped water.

1345 Russo has added about ~~4.5~~ 3.5 yd.^{3} to MH08 → concrete level (hard concrete) is still a couple feet below the rim, but soupy concrete is to surface. They'll allow concrete to settle out and top off later (if necessary).

1350 Excavator & concrete truck go to PE6 to cover pipe with concrete. Also use excavator bucket to get concrete over pipe at PE6 (excavator get concrete truck close enough to trench).

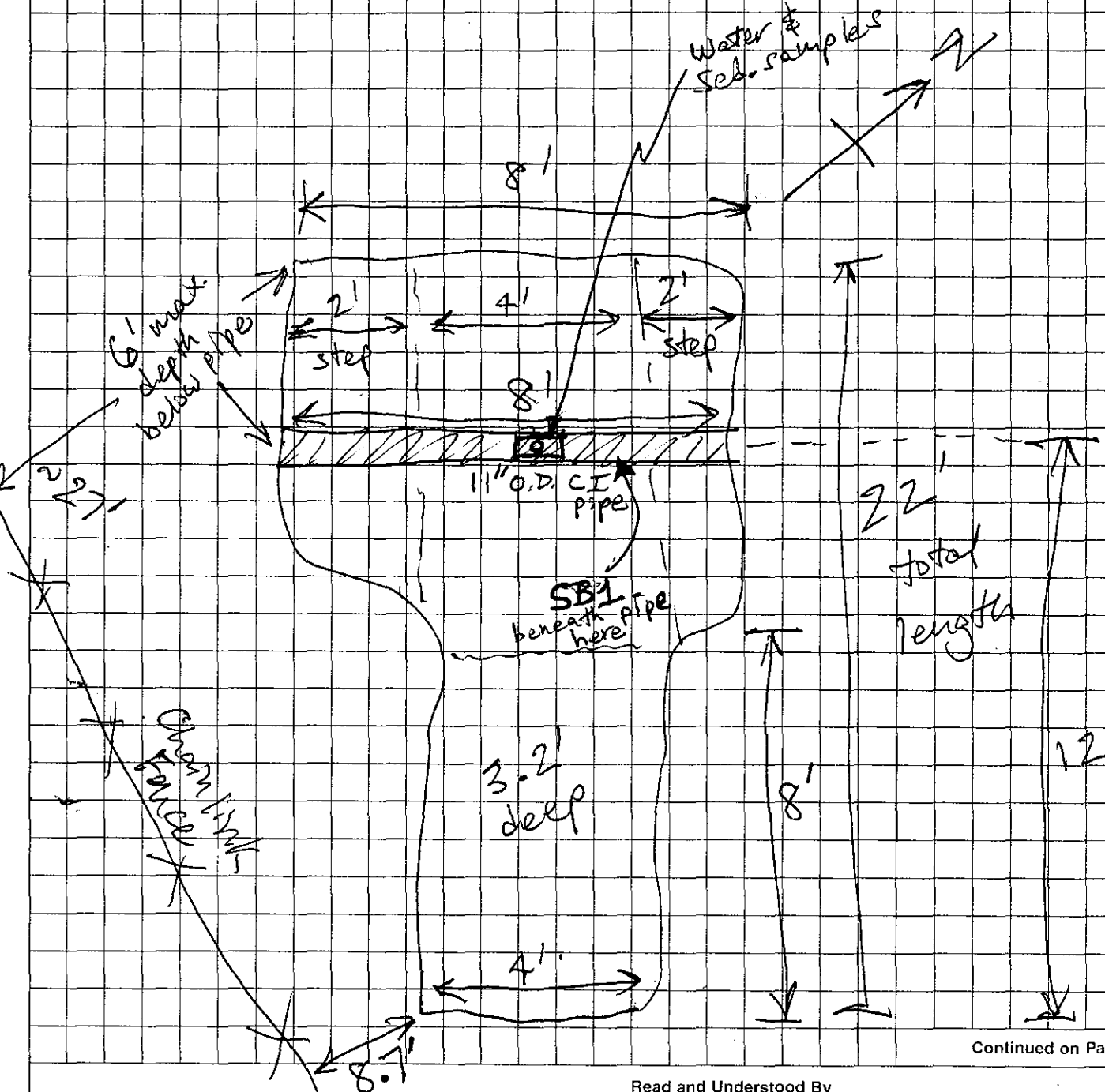
Continued on Page

Read and Understood By

[redacted] 12-10-12

Signed Date Signed Date

~~HH~~ III Russo places 8 bucketfuls over PE6 PIPE 1 (~3 yd.³). Cement over pipe rs to 3.2' bgs & about 14' long smoothed



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Read and Understood By

[redacted] 12-10-12

Signed Date Signed Date

1430 Lafarge concrete truck leaves site.

1440 Russo is back at staging area with water tank pumped from MH08 → we'll try to pump it into 1000 gal white poly tank that has about 750 gallons in it from IE8 excavation and IE7/IE8 decon. The 375 gallons from MH08 fit in the 1000 gal white poly tank (which now has about 1125 gallons total in it).

1500 [redacted] rep. scans Russo's equipment (pump, hoses, green poly tank, etc.) used at MH08 to clear them for use elsewhere. (1530 → [redacted] cleared the equipment)

1515 Russo goes back to PE6 to load catwalk onto trailer and transport to PE4 (catwalk & trench box were not used at PE6).

1545 Russo returns to PE6 to load trench box onto trailer to take to PE4. & smaller bucket (only used for concrete transfer)

1355 Concrete over pipe at PE6 has set up (Joe walked on it), so we'll backfill with soil at PE6.

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Read and Understood By

[redacted] 12-10-12

Signed Date Signed Date

1630 Russo has excavation PE6 backfilled & compacted with excavator bucket. I stake former PE6 trench boundaries. Generated 2 large garbage bags full of plastic sheeting at this location

1635 Russo shovels off some of gross soil/mud from excavator tracks. They also do dry decon of excavator bucket with trowels.

1645 Russo tracks excavator back to decon area so Christy can scan & clear bucket.

1700 Russo crew leaves site for the day.

1730 I leave site for the day.

Trip Blanks 2 x 40 ml. HCl pres. (lab provided)

Sample I.D.: TB1-121012

Analysis: VOCs

S Moeller: user

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Read and Understood By

[redacted] 12-10-12

Signed Date Signed Date

NFSS' Bop Field Investigation

PROJECT (PE4 Excavation)

Notebook No. 2

Continued From Page 74

URS: [redacted] (all personal vehicles);

USACE: [redacted]

Wx.: 34°F, light snow, varying wind from northerly directions

Russo Development: [redacted] box truck with trailer, John Deere 200 LC excavator

0700 I arrive on site. Load equipment in truck, labelled yesterday's samples for lab pick up today (inserted CoCs in 2 coolers).

0810 Russo crew arrives on site. [redacted] still needs to clear the bucket on their excavator.

0840 [redacted] clears Russo excavator, [redacted] tracks it to location PE4.

0900 Russo sets up equipment at PE4 location (along fenceline north of Modern landfill).

0905 Started excavating at PE4.

0910 Topsoil 8" dk. brown loamy clay topsoil, tr. gravel, tr. plastic bags (FILL) to 1.5' thick about 20' east in trench

moist, granular texture, many fine & medium roots

Continued on Page

Read and Understood By

[redacted] 12-11-12

Signed Date Signed

0915 Hit something encased in concrete at west end of PEA, then 2 cast iron pipes (~10"-12") at depths ranging from ~5.5'-6.5' bgs.

Beneath topsoil, 1.5'-2.5' bgs tan to brown to yellowish brown silty clay, orange & gray mottles tr. gravel & cobbles, moist, plastic, angular block to platy structure

FILL ??

then reddish brown clay from 2.5' ↓ 8' deep max.
reddish brown silty clay, tr. rounded gravel & cobbles

tr.-some sand in areas beneath pipes

5.5/6.5/6

0935 [redacted] switches to larger bucket to enlarge trench for trench box installation. [redacted] wants to scan sidewalls first. Trench is currently 4.5' W x 22' L x ~6.5' deep

0945 Russo lowers trench box into excavation. Westernmost pipe appears to be concrete encased, but a bell may be visible at surface of concrete. Russo will try to chip away concrete around bell with jackhammer.

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Read and Understood By

[redacted]

12-11-12

Signed Date Signed Date

Soil sample beneath 8" CI pipe at west end of trench PE4

Sample I.D.: PE4SB1 7.0-7.5-0168
Time: 1020 QA/QC: none
Depth: 7.0'-7.5'
Analytes: same as PE6SB1, pg. 69

collect with shovel in SS bowl

Description: Brown to reddish brown silty clay, some orange & gray mottles, tr subrounded to subangular gravel
very moist, plastic

Soil sample beneath 10" CI pipe between 8" & 12" CI pipes (center pipe of 3)

also

Sample I.D.: PE4SB2 7.5-8.0-0169
Time: 1040 QA/QC: none
Depth: 7.5'-8.0'
Analytes: same as PE6SB1, pg. 69

Description: same as above, but tr to some fine sand
moist slightly firmer & less plastic than above

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Read and Understood By

[redacted] 12-11-12

Signed Date Signed Date

Soil sample beneath 12" CI pipe, easternmost pipe in group of 3

Sample I.D.: PE4SB37.5-8.0-0170
Time: 1030 QA/QC: none
Depth: 7.5'-8.0'

collected with shovel into SS bowl

Analytes: same as PE6SB1, pg. 69

Description: Same as PE4SB1 (pg. 77), but tr.-some fine sand in places
former & less plastic than PE4SB1
moist
more sand than PE4SB2

Water sample from 8" pipe at west end of trench PE4

PE4PIPE16.4-7.0-0173
Sample I.D.: PE4PIPE16.4-7.0F-0173
Time: 1342 QA/QC: none
Depth: 6.4'-7.0'

collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Analytes: Same as PE6PIPE1 (pg. 69)

Description: Unfiltered → clear, no odor

Filtered → clear, ~~no~~ maybe slight sulphury odor

S.M.

Completed sampling at

Continued on Page

Read and Understood By

[redacted] 12-11-12

Signed Date Signed Date

Water sample from center 10" pipe at trench PE4

PE4PIPE2 6.4-7.2-0172
Sample I.D: PE4PIPE2 6.4-7.2F-0172
Time: 1303 QA/QC: none
Depth: 6.4'-7.2'
Analytes: same as PE6 PIPE1 (pg. 69)

Collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Description: Unfiltered → generally clear, no odor

Filtered → clear, no odor

Completed sampling at 1334

Water sample from 12" pipe at east end of group of 3 pipes

PE4PIPE3 6.4-7.4F-0171
Sample I.D.: PE4PIPE3 6.4-7.4-0171
Time: 1207 QA/QC: none
Depth: 6.4'-7.4' (inside of full pipe)
Analytes: same as PE6 PIPE1 (pg. 69)

also

Description: Unfiltered → initially grayish (4L bottle), then became clear
no odor
sh. H_2S/methane odor

Filtered → clear

Completed sampling at 1243

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Read and Understood By

[redacted] 12-11-12
Signed Date Signed Date

NFSS BOP Field Invest.

80
PROJECT (PE4 Excavation

Notebook No. 2
Continued From Page 76

1005 Jackhammering concrete to expose the pipe. Concrete collar appears to have been to encase 2 bells in pipe (short piece of pipe).

1050 Russo is installing saddle clamps on pipes. They drill through 12" pipe (PIPE 3) first

1200 — 10" pipe vented gas & appears to have water under pressure.

— 8" pipe appears to have some water under pressure

— [redacted] attached stickup to saddle valve on 12" pipe, water level is about 1' above pipe in stickup, we'll collect a water sample from PIPE 3 (12" pipe) first.

1205 Russo went to get 1500 gallon green poly tank to pump water into from pipes.

1245 Russo is back with tank. They'll start pumping diaphragm from PEA PIPE 3 and hook stickup or onto saddle clamp valves at PIPE 1 and PIPE 2 to see how high head is in these pipes.

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Read and Understood By

[redacted] 12-11-12

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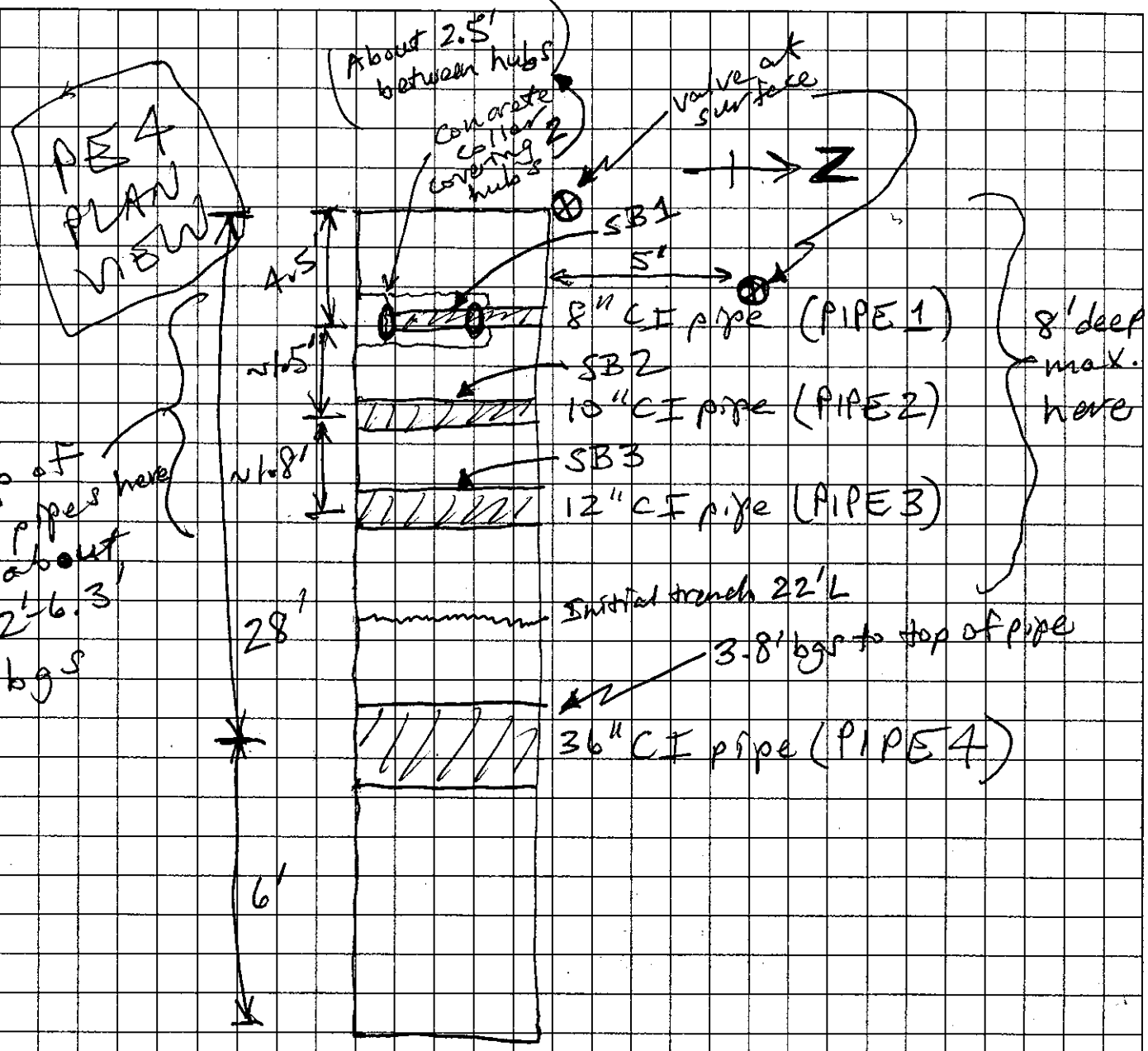

Final dimensions 4.5'W x 34'L x
8' deep max. (west end)
8.3' deep max. (east end under pipe 4)

Continued on Page

Read and Understood By

[redacted] 12-11-12

Signed Date Signed Date

1253 [redacted] starts pumping PIPE 3 (12" pipe).

1300 5' stickup on PIPE 2 is not overflowing, I will collect sample from stickup at PIPE 2.

1330 After pumping ~725 gallons from PIPE 3, water level is down into pipe.

1338 [redacted] switches to pumping from PIPE 2.

1343 [redacted] uses Stihl chop saw with diamond blade to cut window into PIPE 3 (~10"x10").

* Water level is PIPE 3 is about ½ full; no sediment in PIPE 3.

1350 [redacted] starts filling PIPE 3 with SPEED CRETE RED LINE cement (3.5 x #50 bags).

1415 After pumping ~525 gallons from PIPE 2, water level is down into pipe. [redacted] is cutting window into PIPE 2 (~9"x9"). Water level is about ½ way down into pipe. There is scale in pipe → see pg. 83 for sample info.

Continued on Page

Read and Understood By

[redacted] 12-11-12

Signed | Date | Signed | Date

Scale/sediment sample from inside PIPE 2 (10" pipe) at PE4 excavation.

Sample I.D.: PE4 PIPE 2 SED-0174

TIME: 1419 QA/QC: none

DEPTH: 6.4'-7.2'

Analytes: same as P6SB1, pg. 69

collected by gloved hand from pipe into SS bowl

Description: black scale; hard, silver & gold colored metallic slivers in a black matrix botryoidal texture wet

unique

VOCs have headspace aliquots since cant break up material very fine

[redacted]

Continued on Page

Read and Understood By

[redacted] 12-11-12

Signed Date Signed Date

1435 PIPE 2 filled with SPEED CRETE RED LINE concrete (3 x #50 bags)

1440 [redacted] goes back to staging area to pump ~1250 gallons from green poly tank on trailer into Frac Tank (E-Tank).

1525 [redacted] returns to PE4 with ~~empty~~ green poly tank. Start pumping water from PIPE 1. still about ~175 gallons in tank

1535 [redacted] removed saddle clamp from PIPE 1. After pumping ~425 gallons from PIPE 1, water level is down inside pipe. [redacted] cuts a window into PIPE 1 (~8" x 9") and fills pipe with SPEED CRETE RED LINE concrete (1.5 x #50 bags). Not enough sediment in PIPE 1 to collect a sample.

About 3/4" thick wall on pipe 1

1607 [redacted] cement truck has arrived at the gate, [redacted] will escort truck to PE4 excavation.

1620 [redacted] truck (0427) ([redacted] arrives on site at PE4. Russo adds 3x5 gallon buckets of bentonite chips to concrete mix in truck (3 yds.^{3}).

Continued on Page

Read and Understood By

[redacted] 12-11-12

Signed Date Signed Date

Since concrete truck can't reach excavation, Russo uses excavator bucket to transfer concrete into excavation.

1650 Covered 3 pipes with about 2.5 yd^3 of concrete. Top of Concrete level is about 5' bgs in hole.

[redacted] secures excavation for the evening.

1710 [redacted] crew leaves site for the day. I unload equipment and sort bottle sets for tomorrow.

1745 I leave site for the day.

Continued on Page

Read and Understood By

[redacted] 12-11-12

Signed | Date | Signed | Date

PROJECT NFSS BOP Field Invest. (PEA Excavation)

Notebook No. 2

Continued From Page —

URS: [redacted] (all personal vehicles);

USACE: [redacted]

Wx.: Mostly clear, 32°F, breeze from SW

Russo: [redacted] box truck w/ trailer & John Deere 200LC excavator

0705 I arrive at gate and wait for someone to let me in.

0715 [redacted] finally lets me into NFSS. I label yesterday's sample bottles & prep for lab pickup.

0800 I load equipment into my truck and then go with NFSS Maint. Super. to view proposed site PES for gravel road installation to be performed today & tomorrow by maint. staff.

0845 Russo crew arrives on site. They'll pump the water in the green poly tank on their trailer into the frac tank (E tank) (~600 gallons from yesterday see pg. 84)

Continued on Page

Read and Understood By

[redacted] 12-12-12

Signed Date Signed Date

NFJJ BOT Field Invest.

PROJECT (PE4 Excavation) Notebook No. 2 Continued From Page 86

0910 Mobe to location PE4.

0925 [redacted] pulls trench box from western section of excavation PE4. No real GW seepage into trench overnight (little water in trench is probably from yesterday's pipe dewatering activities). [redacted] starts backfilling western section of trench with stockpiled soils.

1015 [redacted] has completed backfilling & compacting western portion of trench. Joe starts digging eastward to find 36" pipe.

1019 Almost immediately found 36" pipe, ~3.8' bgs to top of pipe (pipe was about 6' east of end of previous trench)

1030 Russo drills $\frac{23}{64}$" hole in 36" pipe, no water came out of pipe. We insert LDPE tubing into pipe to collect water sample.

1045 We're having trouble keeping tubing below water in PIPE 4 (36" pipe), so Mike will cut a small window in pipe with chop saw so I can insert weighted tubing. Water level in pipe is about 8" below top of pipe (pipe has almost 1.5" thick wall).

(~3" x 3" window)

Continued on Page

Read and Understood By

[redacted] 12-12-12

Signed Date Signed Date

88 NFSS BOP Field Invest.
PROJECT (PE4 Excavation) Notebook No. 2
Continued From Page 87

1205 Russo cuts (scores) (~12"x8") larger window in PIPE4 (36" pipe) for breaking out later when conveyor concrete truck arrives (scheduled for 1400)

1237 [redacted] starts excavating soils on sides of pipe with smaller bucket.

Some water seepage into trench from about 4' bgs to under pipe on east side of PIPE4, not much on west side of pipe.

1300 Russo has dug out under pipe to about 8.3' bgs (bottom of pipe is ~7.1' bgs)

1400 One of the stone delivery trucks at PE5 road building has become stuck. [redacted] has cleared excavator to go over & help pull truck out.

1411 [redacted] has stone truck back on road.

NOTE No sediment sample was collected from PIPE4 (access hole was too small [3"x3"] to permit sampling

1420 LaFarge (#421, NYS Plate #54171-KA) concrete truck arrives at PE4. Russo adds 7 x 5 gallon buckets of bentonite chips to mix (7 yards³)

Continued on Page

Read and Understood By

[redacted] 12-12-12

Signed Date Signed Date

Soil sample from beneath PIPE4 (36" pipe)

Sample I.D.: PE4SB4 7.1-7.6 -0176
Time: 1245
Depth: 7.1'-7.6'
QA/QC: none
Analytes: same as PE6SB1, pg. 69

collected by shovel into SS bowl

Description: Yellowish brown to tan to gray to reddish brown silty clay, tr. subrounded gravel

moist to slightly moist

firm to very plastic

(looks like mix of multicolor clay & reddish brown clay)

Water sample from PE4 PIPE4

Sample I.D.: PE4 PIPE4 4.5-6.8-0175
PE4 PIPE4 4.5-6.8F-0175
PE4 PIPE4 4.5-6.8D-9118 QA/QC: Dup.
PE4 PIPE4 4.5-6.8DF-9118

Time: 1035
Depth: 4.5'-6.8'

collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Analytes: same as PE6PIPE1 (pg. 68)

Description: Unfiltered → a little rust particulates at first, but generally clear after, no odor

Filtered → Clear, no odor

Completed sampling at 1200

Continued on Page

Read and Understood By

[redacted]

12-12-12

Signed | Date | Signed | Date

1435 [redacted] starts filling PIPE 4 with concrete through window. Joe checked

1445 Filled pipe to top, now fill around & under pipe 4. Concrete level is ~2' bgs, so there is almost 2' of concrete over pipe & probably 3' to either side and ~1.2' underneath pipe (all 7 yd.³ in pipe or around pipe).

(Caisson Mix) 4500 psi concrete with larger aggregate, also had CaCl added to speed cure time (we can probably backfill today)

1510 Russo takes catwalk over to PE5 location.

1515 [redacted] escorts LaFarge concrete truck off site.

1520 Russo loads trench box onto trailer to transport to PE5.

1530 Concrete at PE4 has set up to where [redacted] can walk on it. Russo begins backfilling remaining portion of trench PE4 with stockpiled soil.

1600 [redacted] finishes backfilling excavation PE4, I stake the 4 corners. [redacted] dry decons their large excavator bucket. Then [redacted] scans & swipes excavator bucket.

Continued On Page

Read and Understood By

[redacted]
Signed

12-12-12
Date

Signed

Date

1615 [redacted] trucks excavator over to PE5.

We take a walk back to PE5 at fenceline. USACE maint. staff don't have any useable road built yet, Russo will help them tomorrow morning

1630 We leave PE5 site for the day.

1645 [redacted] crew leaves site for the day. I prep bottle sets for tomorrow.

1730 We leave site for the day.

(Russo had maybe 1½ hr. DECON TIME today)

Continued on Page

Read and Understood By

[redacted] 12-12-12

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (PES Excavation)

Notebook No. 2

Continued From Page

URS: [redacted] (all personal vehicles);

USACE: [redacted]

Wx.: 28°F, mostly clear, breeze from SW

Russo Development: [redacted] (supervisor, operator) [redacted] (laborer) — box truck with trailer, John Deere 200LC excavator

0700 I arrive at gate, await someone to let me into NFSS.

0710 Follow maint. worker's truck into NFSS. Label & package yesterday's GW and soil samples for lab courier pickup.

0810 Russo crew arrives on site. [redacted] does H&S briefing, then we move to PES excavation site.

0820 [redacted] uses excavator to help with road prep to PES (preps/grades stone, strips topsoil, removes trees).

1000 [redacted] takes excavator to PES location and clears trench site (we're waiting for stone deliveries)

Continued on Page

Read and Understood By

[redacted] 12-13-12

Signed Date Signed Date

1005 [redacted] starts excavated trench PE5 (E→W trench)

Note - [redacted] (USACE) approved Russo's field request to not use plastic for soil stockpile staging at PE5 since the undergrowth trees/shrubs would cause problems with puncturing plastic.

Top 8"-12" dk. brown loamy clay, many F-large roots, moist, granular

from 12" ↓ to 2' bgs multicolor silty clay, tr. gravel, moist (tan to yellowish brown to brown) some orange & gray mottles

no PID readings on excavated soils (0.0 ppm)

Reddish brown silty clay, only sl. moist, very firm (hard digging), tr. gravel & cobbles, angular blocky, gray silty-fine sandy partings (up to 1/4" thick)

1017 [redacted] found the 8", 10", & 12" pipes almost exactly where markout was. Top of pipes is 5'-5.5' bgs.

1020 [redacted] goes to help spread another load of stone.

1030 [redacted] is back at PE5 and excavates further eastward to find 36" pipe.

1035 Found 36" pipe (5' bgs) about ~~29'~~ 27' to top of other 3 pipes.

actually only 24" — from 12" pipe

Continued on Page

Read and Understood By

[redacted] 12-13-12 — Signed — Date

2.1' O.D. — Signed — Date

Soil sample from beneath pipe 4 (west side)

Comp

Sample I.D.: PE5SB47.1-7.6-0178
Time: 1230 QA/QC: none
Depth: 7.1'-7.6'
Analytes: VOCs; SVOC/PEST/PCB; Total U; gamma/ISOU/ISOTh

Collected with shovel into SS bowl

Description: mix of reddish brown & multicolor silty clay

(tan to brown to yellowish brown to reddish brown [main color] silty clay, tr. gravel & coarse sand [angular to rounded], some orangish to grayish mottles, sl. plastic due to moisture from leaking pipe [original material was only sl. moist & hard])

Water sample from 24" pipe (PIPE 4) at east end of trench PE5

grab

PE5PIPE45.1-7.1-0177
Sample I.D.: PE5PIPE45.1-7.1F-0177
Time: 1115 QA/QC: none
Depth: 5.1'-7.1' (full pipe)
Analytes: VOCs; SVOC; PEST; PCB; TAL Metals; Total U; Ra-226; ISOU/ISOTh/Ra-228; Anions/Alk./TDS

Collected using peristaltic pump with new, decontaminated silicone & LDPE tubing

Description:

Unfiltered → clear, H_2S/decaying organics odor

(Filtered for TAL Metals, Total U, Ra-226, ISOU/ISOTh, Ra-228)

Filtered → same as above

Completed sampling at 1150

Continued on Page

Read and Understood By

[redacted] 12-13-12

Signed Date Signed Date

Sample I.D.: PE5
Time:
Analytes:

QA/QC: none

Description:

VOID

[redacted]

Sample I.D.: PE5
Time:
Depth:
Analytes:

QA/QC: none

Description:

Continued on Page

Read and Understood By

Signed Date Signed Date

Sample I.D.: PES
Time:
Depth:
Analytes:
Description

QA/QC: none

Sample I.D.: PES
Time:
Depth:
Analytes:

QA/QC: none

Description:

VOID

[redacted]

Continued on Page

Read and Understood By

Signed Date Signed Date

Since pipes are shallow, we'll bench excavation rather than using trench box.

1100 [redacted] drives their box truck back to PES trench location. We'll try drilling a hole in the 24" pipe to collect a sample (PIPE4). Water in PIPE 4 is under pressure (about 4' geyser from 33/64" drilled hole, about 5' water up into sampling tubing.

1150 I've completed water sampling at PIPE4, Mike uses Stihl chop saw with new diamond blade to score top of PIPE4 for eventually break-in & filling with concrete. NO sediment sample will be collected from PIPE 4.

1200 Mike cut a little too deep on 1 scoring cut & some water is leaking into excavation PES. Scoring from window is ~15" x 15".

1224 [redacted] starts digging around & under pipe 4. Some large wood cribbing pieces around & under pipe (4"x6" x up to 3' long). I get soil sample from under pipe from Mike (in hole w/shovel).

1340 [redacted] conveyor concrete truck (#0444, NYS Plate #54173-KA) arrives on site and is able to back to PES trench location.

Russo adds 6 x 5 gallon buckets of bentonite chips to concrete mix (6 yards in truck).

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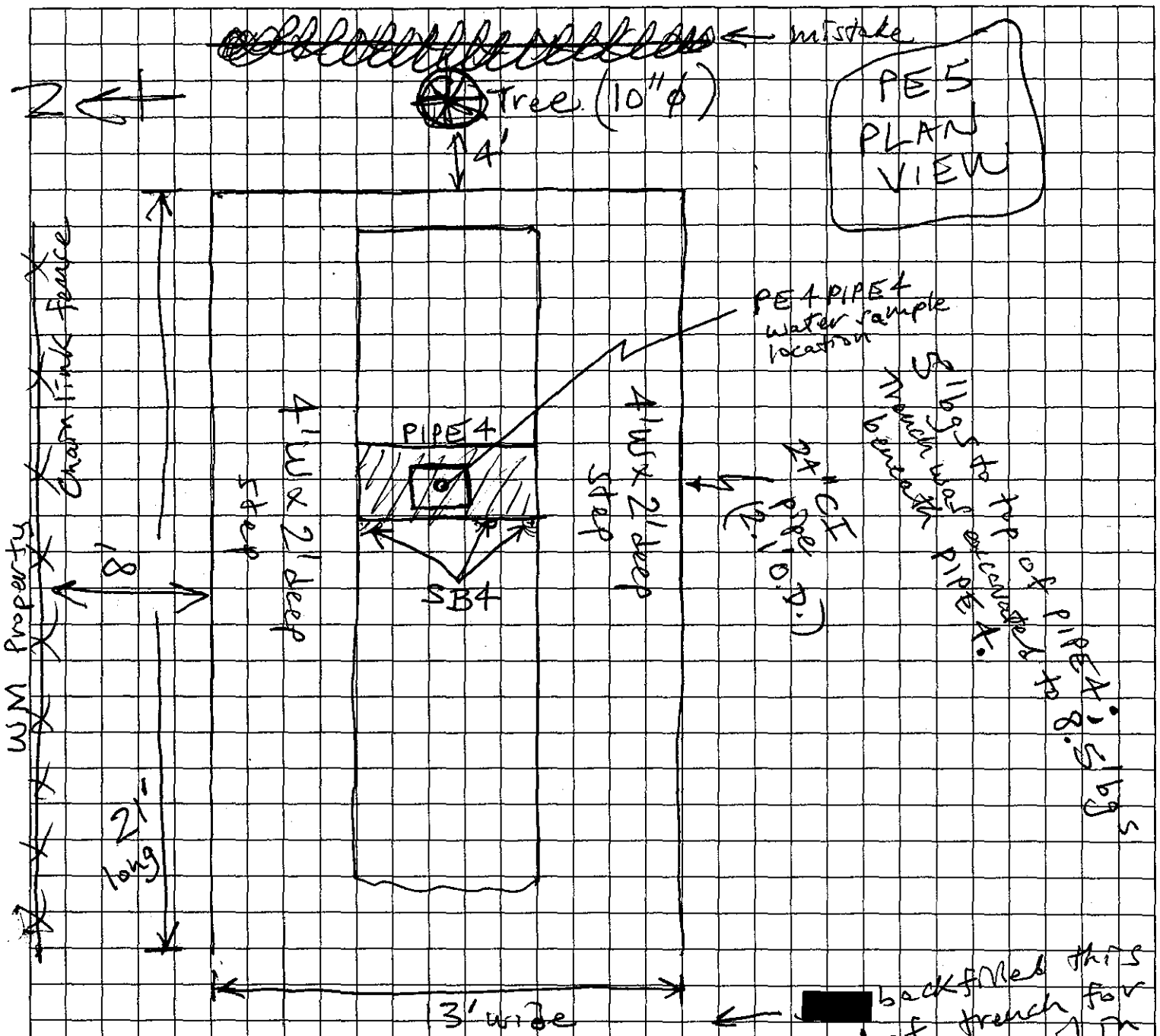
Read and Understood By

[redacted] 12-13-12

Signed Date Signed Date



[redacted] backfilled this end of trench for safety & to aid in filling concrete into & around pipe 4

Maybe 1' of water in bottom of hole due to water leakage from PIPE4 (no visible GW seepage from sidewalls)

[redacted] said rad. scans on excavated soils & sidewalls were lower than typical

Continued on Page

Read and Understood By

[redacted] 12-13-12

Signed Date Signed Date

1350 [redacted] used excavator arm to break window out of pipe (top of pipe has a N→S crack in it now). Fill pipe with concrete from conveyor into window. Some water leaked out of pipe as it was being filled (just slightly overspilling top of window). Concrete is below, around, and beneath pipe but can't see level due to water in hole above concrete (water level in hole is ~3' bgs).

1415 [redacted] noticed a small hydraulic leak on excavator bucket hose, they place absorbent pads on & under leak to absorb hydraulic oil and call shop for spare parts.

1435 [redacted] escorts Lafarge concrete truck back to gate. I secure excavation with CAUTION tape.

1445 [redacted] crew leaves site for the day. I label sample bottles & do COCs.

1530 [redacted] (USACE) said to excavate top of PIPE 4 on N and S ends of concrete pour and see how far crack extends. If crack is contained within concrete - O.K., but if crack extends beyond concrete → expose and pour more concrete over crack sealing it.

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Read and Understood By

[redacted] 12-13-12

Signed Date Signed Date

100 PROJECT NFSS BOP Field Invest. (RBS Excavation)

Notebook No. 2

Continued From Page 99

1630 I leave site for the day with cooler of samples to deliver to Test America Amherst.

[redacted]

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Read and Understood By

[redacted] 12-13-12

Signed Date Signed Date

PROJECT NFSS' BOP Field Invest. (PES Excavation)

Notebook No. 3

Continued From Page —

USACE: [redacted]

URS: [redacted]

Wx.: 30°F, mostly clear, breeze from SW

Russo Development: [redacted] box truck w/ trailer, John Deere 200LC excavator

0700 Arrived at NFSS, followed maint. personnel into site. Prepped bottle sets, loaded equip. into my truck, did COCs for later today.

0805 [redacted] crew arrives on site. [redacted] does H&S briefing. Mobe to PES location.

0815 [redacted] replacing hydraulic line on excavator that leaked. Looks like about 3"-4" of water in excavation PES above concrete that was poured yesterday.

0830 [redacted] begins excavating soil on S & N sides of concrete around PIPE 4 to see if crack in pipe extends past yesterdays concrete pour.

0836 Water is seeping from crack in pipe on south side of concrete. →

Continued on Page

Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

→ crack extends about 4" past concrete pour to the south, then downward to west in a crescent shape for about 8" (this area is not really seeping).

Many gray silty partings in reddish brown silty clay (3'-5' bgs), tr. gravel & cobbles

0855 Crack does not extend beyond concrete on north side of pipe 4, no signs of water seepage (there is a bell/hub in the 24" pipe about 8" north of concrete around PIPE 4).

0900 [redacted] starts re-excavating the 3 pipes at the west end of trench PE 5.

Some wood cribbing pieces around/under pipes
Some sandier soil on west side of 8" pipe
(but no obvious bedding material, all pipes at PE5 were installed in and backfilled with silty clay soils).

PIPE 1 (0.8' O.D. - 8" pipe) at west end of trench

PIPE 2 (0.9' O.D. - 10" pipe) center of group of 3

Continued on Page

PIPE 3 (1.0' O.D. - 12" pipe) east end of group of 3

Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

Soil sample from beneath PIPE 1 (8" pipe)
top of pipe at 5.3' bgs

Comp.

Sample I.D.: PE5SB1 6.1-6.5-0179
Time: 0915 QA/QC: none
Depth: 6.1'-6.5'

collected with shovel into SS bowl

Analytes: VOCs; SVOCs/PEST/PCB; Total U; Gamma/Iso U/Iso Th

Description: reddish brown silty clay, sl. moist, very firm, sl. plastic in spots, tr. coarse sand (angular) & fine gravel (subrounded)

tr. orange mottles

Soil sample from beneath pipe 2 (10" pipe)
top of pipe at 5.1' bgs

Comp.

Sample I.D.: PE5SB2 6.0-6.5-0181
Time: 0920 QA/QC: none
Depth: 6.0'-6.5'

collected with shovel into SS bowl

Analytes: same as PE5SB1 above

Description: Same as above

Continued on Page

Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

Soil sample from beneath PIPE 3 (12" pipe) top of pipe at 5.0' bgs

Comp.

Sample I.D.: PES SB 3 6.0-6.5-0180
Time: 0918 QA/QC: none
Depth: 6.0'-6.5' (full pipe)
Analytes: same as PES SB 1, pg. 3

collected with shoved into SS bowl

Description: same as PES SB 1, pg. 3 except moist & more plastic (easier to get in sample jars)

Liquid sample from PIPE 1 (8" pipe) at west end of trench PES

PES PIPE 15.4-6.0 F-0182
Sample I.D.: PES PIPE 1 5.4-6.0-0182
Time: 1012
Depth: 5.4'-6.0' QA/QC: none
Analytes: VOCs; SVOC/PEST/PCB; TAL metals; Total U; Anions/Alk./TDS; Ra-226; iso U/iso Th/Ra-228 (filtered for TAL metals; Total U; Ra-226; iso U/iso Th/Ra-228)

collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Description: Unfiltered → initially clear, then grayish sulphury odor after first 5L of sample collection became clear again
Filtered → clear, sulphury odor.

Complete sampling at 1050

Continued on Page

Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

Liquid sample from PIPE 2 (10" pipe), center of 3 pipe group at west end of trench PES
PES PIPE 2 5.5-5.9F-0183
Sample I.D.: PES PIPE 2 5.5-5.9-0183
Time: 1055 QA/QC: none
Depth: 5.5 - 5.9'
Analytes: same as PES PIPE 2, pg 4

collected with peristaltic pump and new, dedicated LDPE & silicone tubing

Description: Unfiltered → clear, no real odor

Completed sampling at 1135

Filtered → clear, no real odor

Liquid sample from PIPE 3 (12" pipe), easternmost pipe in group of 3 pipes at west end of trench PES
PES PIPE 3 5.2-5.9F-0184
Sample I.D.: PES PIPE 3 5.2-5.9-0184
Time: 1145 QA/QC: none
Depth: 5.2'-5.9'
Analytes: same as PES PIPE 1, pg 4

also

Description: Unfiltered → clear, no odor

Completed sampling at 1220

Filtered → clear, no odor

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Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

0950 Russo has saddle clamps installed on all 3 pipes and is drilling into 8" pipe (PIPE 1).

1010 Russo puts 2' stickup on PIPE 1 saddle clamp and I start collecting water sample. Water level in PIPE 1 is about 5" above top of pipe.

* Water level in PIPE 2 is only a couple of inches deep inside pipe (~4"-5" deep inside pipe).

* Water level in PIPE 3 is inside pipe, but may need a little pumping down to be manageable for window cutout.

1030 [redacted] takes trench box back to staging to offload (not used here) and will bring trailer back with green poly tank to pump water from PIPE 3 & PIPE 1.

1140 [redacted] starts pumping water at PIPE 1 to reduce water level in pipe.

1145 [redacted] starts cutting window into PIPE 2 with Stihl chop saw with diamond blade. (~8"x10" window)

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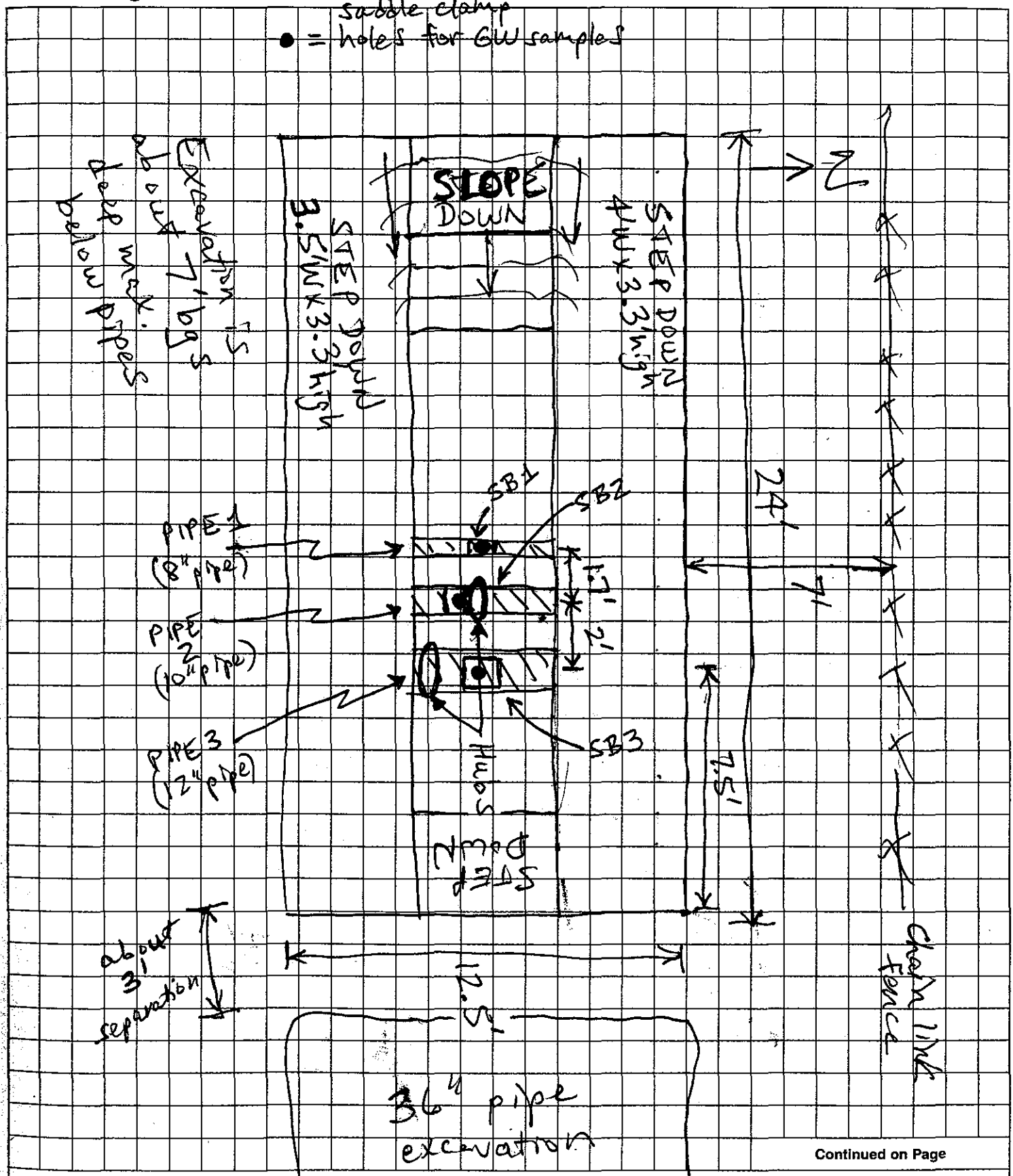
Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

● = saddle clamp holes for GW samples



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Read and Understood By

[redacted]

12-14-12

Signed | Date | Signed | Date

1200 Russo cuts window into PIPE 1 with chop saw (~8"x9").

1221 Russo had pumped ~500 gallons from PE5 PIPE 1. Then started pumping from PE5 PIPE 3 after GW sampling was completed.

* PE5 PIPE 1 & PIPE 2 were filled with SPEED CRETE RED LINE cement (3x#50 bags) total.

1230 Russo starts cutting window into PIPE 3 (~9"x9"). Approx. 400 gallons were pumped from PIPE 3. (~900 gallons total in green poly tank on trailer)

1240 NO sediment (scale) in PIPE 3 to sample.

We starts filling PIPE 3 with SPEED CRETE RED LINE cement (3½x#50 bags).

1258 PE5 PIPE 3 is filled with cement.

NOTE PIPE 4 has stopped seeping water, but we're still going to cover the creek with concrete.

Continued on Page

Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

Sediment sample from PIPE 1 at PES (scale from inside pipe)

comp.

Sample I.D.: PE5PIPE1SED-0185
Time: 1205 QA/QC: none
Depth: 5.4'-6.0'
Analytes: Limited volume - gamma/isoU/isoTh (1/3 container)

collected with gloved hand into SS bowl

Description: Black, hard, scale from inside pipe & metal schards/slivers from cutting through pipe

same as all previous pipes

also

Sediment sample from PIPE 2 at PES (scale from inside pipe)

comp.

Sample I.D.: PE5PIPE2SED-0186
TIME: 1207 QA/QC: none
Depth: 5.2'-5.9'
Analytes: Limited volume - gamma/isoU/isoTh only (full container)

Description: same as above

Continued on Page

Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

1330 [redacted] starts dry deconning small excavator bucket. (15 minutes decon time)

1336 [redacted] concrete conveyor truck (#604, NYS Plate #44596 MB) arrives at PE5. Russo adds 3x5 gallon buckets of bentonite chips to 3 yd.^{3} mix in truck.

1343 Russo will cover south end of PE5 PIPE 4 first. Then put rest of load over 3 pipes at west end of trench PE5 (top of concrete is up to ~4' bgs over 3 pipes and 4.5' bgs over crack in PIPE 4).

1400 [redacted] with tank water tank on trailer back to staging area to pump into frac tank.

1418 Lafarge concrete truck leaves site. I checked MH08, concrete is within 2" of lid rim; I take photos and put lid back on MH08.

1450 [redacted] has finished pumping 900 gallons from green poly into frac tank. They head back to PE5 to backfill excavation.

1500 [redacted] starts backfilling excavation PE5 with stockpiled soil.

Continued on Page

Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

1612 [redacted] completes back filling & compacting at PES. I stake corners & take FINAL photo.

1615 [redacted] dry decons excavator bucket.

1645 We leave PES and head back to staging area.

1710 [redacted] has excavator tracked to decon pad for clearance & wet decon on Monday.

1715 [redacted] crew leaves site for the day.

1730 I leave site for the day.

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Read and Understood By

[redacted] 12-14-12

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (Russo Demobe)

Notebook No. 3

Continued From Page

URS: [redacted] all personal vehicles);

USACE: [redacted]

Wx.: 50°F, overcast, breeze from SW

Russo Development: [redacted] box truck with trailer, John Deere 200LC excavator

also [redacted] drove a single-axle dump truck with trailer today to demobe equipment

---

0720 I arrive on site, [redacted] lets me in gate.

0805 Russo crew arrives on site. [redacted] with pump out water from decon pad before the start of equipment decon. [redacted] recompacts backfilled soil at IE5 and IE6 (voids are now gone).

0900 ~550 gallons pumped into 1500 gal. green poly tank on trailer. [redacted] starts steam cleaning equipment.

1000 I prep to collect equipment sampling rinse blanks for TO#4 and TO#5.

Continued on Page

Read and Understood By

[redacted] 12-17-12

Signed Date Signed Date

1200 - 1300 LUNCH

1330 Russo has completed steam cleaning their equipment and disassembled their temporary decon pad. They then pressure (steam clean) wash the section of the concrete decon pad that was under their decon pad & collect the decon fluids/solids.

[redacted] asked that Russo leave 1 empty 55 gal. drum for shelby tubes

They have generated 1 x 55 gal. white drum of plastic sheeting/soil/water from temp. decon pad disassembly.

1420 Russo has completed cleanup of concrete decon pad, they take green poly tank on trailer (has about 975 gallons total from today's activities) to staging area to pump water into poly tanks on ground.

1430 [redacted] pumps ~950 gallons into 1500 gal green poly (has ~575 gal. initially from IE3 and previous decon pad water). About 1525 gallons now in this tank.

Tank #3

[redacted] pushes 1500 gal green poly on trailer (maybe 25 gal. of solids in bottom of tank) off trailer and next to other green poly tanks at staging area.

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Read and Understood By

[redacted] 12-17-12

Signed Date Signed Date

TO #4 soil/sediment equipment rinse blank (PE4 → PE6 & MHO8); lab provided DI water poured over deconned ~~bucket auger~~, disp. scoop, alum. foil, gloves → into SS bowl → then into sample bottles

Sample I.D: EB1-121712

Time: 1100 QA/QC: none

Analytes: VOCs; SVOCs; PESTs; PCB; Total U; gamma/Iso U/Iso Th

Description: clear water

long-handled sediment sampling pole end

TO #5 soil equipment rinse blank (TE1 → TE8); lab provided DI water poured over deconned bucket auger, disp. scoop, alum. foil, gloves → into SS bowl → then poured into sample bottles

Sample I.D.: EB2-121712

Time: 1045 QA/QC: none

Analytes: TAL Metals; Total U; gamma/Iso U/Iso Th

Description: clear water

Continued on Page

Read and Understood By

[redacted] 12-17-12

Signed Date Signed Date

1620 [redacted] has all their equipment loaded onto trailers or into trucks (except excavator) & 2 buckets

1645 I leave site for the day to drop equipment at URS Buffalo Office. [redacted] took EB samples to Test America.

NOTE [redacted] performed rad. scans/rad. clearance on all of Russo's equipment used on site (except excavator) before it was allowed to leave site.

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Read and Understood By

[redacted] 12-17-12

Signed Date Signed Date

PROJECT NFSS BOP Field Invest. (IDW Sampling)

Notebook No. 3

Continued From Page —

URS: [redacted]

USACE: [redacted]

Wx.: 43°F, raining, breeze from NW

0710 I arrive at gate, await someone to let me into site. 0715, I follow [redacted] into site.

0730 IDW sampling bottle set prep.

0930-1215 IDW tank sampling.

1230-1330 LUNCH

1330-1710 Continue IDW tank sampling. Sample drums WEC-1 → WEC-5.

1730 We leave site for the day

Continued on Page

Read and Understood By

[redacted] 12-18-12

Signed Date Signed Date

In group with tanks 1, 2, 3, & 8 on north side of staging area just south of chain link fence

Sample I.D.: TANK 1
Time: 0945 QA/QC: none

collected with pump & new, disposable silicone & LDPE tubing

Analytes: (13 bottles) VOCs, SVOC, PEST, HERB; TCLP VOC, TCLP SVOC [SVOC, PEST, HERB/METALS]; TOC; pH/TSS; oil & Grease; gamma/BOTH/ISOU

Description: water inside 550 gal. white poly tank on north side of staging area; contains ~300 gals. from PE 1 PIPE 1 generated on 11-29-12; generally clear, no odor

---

Sample I.D.: TANK 2
Time: 1015 QA/QC: none

collected with disposable bailer

Analytes: 13 bottles - same as above

Description: water inside 1500 gal. green poly tank on north side of staging area; contains ~1300 gals. from PE 1 PIPE 10" generated on 11-28-12; generally clear, but appeared to be a little oily film on outside

Continued on Page

Read and Understood By
bailer during sampling

[redacted] 12-18-12

Signed Date Signed Date

Sample I.D.: Tank 3

Time: 1045 QA/QC: none

sample collected with peristaltic pump and new, dedicated silicone & LDPE tubing

Analytes: 13 bottles - same as TANK 1, pg. 17

Description: water inside 1500 gal. green poly tank on north side of staging area; contains ~1525 gals. from IE3 and decon pad (Russo's) generated on 12-3-12, 12-10-12, & 12-17-12; slightly turbid brown, no odor

Sample I.D.: Tank 8

Time: 1110 QA/QC: none

sample collected with peristaltic pump & silicone & LDPE tubing (new, dedicated)

Analytes: 13 bottles - same as TANK 1, pg. 17

Description: water inside 1000 gal. white poly tank on north side of staging area; contains ~1025 gals. from IE8 excavation, IE7 & IE8 decon, & MH08; clear, no odor

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Read and Understood By

[redacted] 12-18-12

Date Signed Date

E-Tank 21,000 gal. Frac tank (about 7700 gal. in tank)
in staging area

Sample I.D.: FRAC TANK

Time: 1145 QA/QC: none

sampled with disposable bailer

Analytes: 13 bottles - same as TANK 1, pg. 17

Description: see above; clear, no odor

425 gallon white poly tank in group with 2 x 1500 gallon green poly tanks & 1 x 55 gallon drum north of Igloo

Sample I.D.: 425 TANK

Time: 1350 QA/QC: none

sample collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Analytes: 13 bottles - same as TANK 1, pg. 17

Description: purge water from suspected rad. wells (MW950, MW951, MW952, MW953, MW954, and MW955); 425 gallon white poly tank north of Igloo Bldg., contains about 110 gallons of purge water

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Read and Understood By

clear, no odor

[redacted] 12-18-12

Date Signed Date

Sample I.D.: MW949 WATER
Time: 1405 QA/QC: none
Analytes: 13 bottles - same as TANK 1, pg. 17
Description: purge & development water from well MW949 → ~50 gallons in a 55 gallon drum
clear, no odor

Collected with peristaltic pump & new, dedicated, silicone & LDPE tubing

also

Sample I.D.: Tank 6
Time: 1430 QA/QC: none
Analytes: 13 bottles - same as TANK 1, pg. 17
Description: 1500 gallon green poly tank in staging area north of Igloo; contains ~700 gallons water from PE 3 excavation & drilling & decon water; slightly turbid initially, then became clear, no odor

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Read and Understood By

[redacted] 12-18-12

Signed Date Signed Date

Sample I.D.: TANK 7
Time: 1445 QA/QC: none

collected with peristaltic pump & new, dedicated silicone & LDPE tubing

Analytes: 13 bottles - same as TANK 1, pg. 17

Description: green 1500 gallons poly tank in staging area north of Igloo; contains ~1225 gallons of old IDW water; clear, no odor

Security Fence Project 10-15-10 on drum

Sample I.D.: WEC-1
Time: 1545

Analytes: 5 jars - VOCs, SVOC/PEST/HERB, TCLP Metals, Paint Filter

sampled with trier and disposable scoop

Description: 55 gal. drum inside Igloo, about 3/4 full with soil; brown silty clay, tr. some sand & gravel

sl. moist to dry, hard to sl. plastic

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Read and Understood By

[redacted] 12-18-12

Signed Date Signed Date

"Security Fence Project" 10-15-10

Sample I.D.: WEC-2

Time: 1605 QA/QC: none

Collected with new disposable poly scoop

Analytes: same as WEC-1, pg. 21

Description: 55 gallon drum inside Igloo; about ~ 3/4 full with soil; same description as WEC-1 (pg. 21)

sl. moist to dry, hard to sl. plastic

also

Sample I.D.: WEC-3

Time: 1625 QA/QC: none

Analytes: same as WEC-1, pg. 21

Description: 55 gallon drum inside Igloo; about ~ full with soil; same as above

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Read and Understood By

[redacted] 12-18-12

Signed Date Signed Date

Sample I.D.: WEC-4

Time: 1635 QA/QC: none

sampled with trowel and disp. poly scoop

Analytes: same as WEC-1, pg. 21

Description: 55 gallon drum inside Igloo; about ~3/4 full with soil; soil material similar to WEC-1, but much moister; blue glover & black plastic in drum with soil

earthy smell

also

Sample I.D.: WEC-5

Time: 1650 QA/QC: none

Analytes: same as WEC-1, pg. 21

Description: 55 gallon drum inside Igloo; about ~7/8 full with soil; Same as WEC-1 except blue poly tarp is in drum with soil

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Read and Understood By

[redacted] 12-18-12

Signed Date Signed Date

Inside Igloo → Contents of a black 55 gal. drum labelled WC-178:
5 gal. bucket of concrete cores; 8 plastic containers
(4 x 32 oz., 3 x 2 qt, 1 x 1 gal.)

labelled 12-23-85 or 2-23-85 1-30-85

COMP.

Sample I.D.: WC-178

Time: 1210 QA/QC: none

Analytes: same as WEC-15, pg. 27
(7 jars)

soil in plastic bags in plastic containers

Description: very dry brown to gray to reddish brown silty clay soil →
sample is a composite of soils from the 8 plastic containers

Blue & white Igloo cooler of old samples (inside Igloo bldg.) -- appear to be material samples

gasket seal type odor

Sample I.D.: COOLER

Time: 1255 QA/QC: none

* sample was a composite of various materials in containers *

no PID readings (0.0 ppm)

Analytes: same as WEC-15, pg. 27 (5 jars)

Description: ~15 x 16 oz. plastic containers containing → steel pieces; white powder; gray powder; plastic parts with dried out black residue chips; plastic container with dried up black material; brown powder; black powder

jar labels are dated 1996

jars lids are taped & have custody seals & labels

weights in grams on most lids

outside of jars, or plastic bags over jars, look greasy

9 x ~100 ml. plastic vials of white to gray powder

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Read and Understood By

[redacted] 12-19-12

Signed Date Signed Date

URS: Steven Moeller, Rob Murphy (personal vehicles);
(rental SUV) ← Christy Seger-Webster; (personal vehicle)
Kevin McGovern ←
USACE: Mark Legeza

Wx.: Clear to slightly overcast, breeze from west, 45°F

0705 I arrive on site & follow maint. crew through gate.

0710 I put together more bottle sets and do sample labels for yesterday's samples. Then Rob & I label and pack yesterday's liquid & soil samples. 10 coolers of samples ready to go to labs.

1030 [redacted] arrives on site to assist us with sample labels prep and take cooler to Test America.

1145 Russo flatbed truck arrives to pickup John Deere 200LC excavator and 2 buckets ([redacted] has scanned & cleared the excavator to leave the site).

1200 Russo flatbed truck leaves site with excavator.

1210 Rob & I sample drum WC-178 inside Sa100. Drum contains 5 gal. pail of concrete cores & 8 smaller plastic containers of soil. After sampling, we placed yellow rad. bags containing

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Read and Understood By

[redacted] 12-19-12 (2)

Signed Date Signed Date

a green garden hose and a plastic (Whale) well sampling pump & wiring into drum WC-178 for later disposal (for sampling purposes → contents of drum were removed & placed on plastic → sampled → returned to drum WC-178).

1245 Examined materials inside cooler full of old sample containers and collected a composite sample for analysis (see pg. 24).

1330 After a phone call from [redacted] and [redacted] we must now add Total U and gamma/Iso U/Iso Th analyses to all solid IDW sample sets (including those collected yesterday and earlier today). Colin also instructed us to composite the soil sampled from WEC-1 → WEC-5 drums into 1 composite sample.

1730 Left site for the day.

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Read and Understood By

[redacted] 12-19-12

Signed Date Signed Date

Composite of soil samples collected from drums WEC-1 → WEC-5 (see pgs. 21 → 23)

Sample I.D.: WEC 1-5

Time: 1400

Previous sampled collected on 12-18-12 from WEC 1 → WEC 5 were composited in SS bowl & repackaged into new sample jars

Analytes: VOCs; SVOC/PEST/HERB; TCLP (7 jars) Metals; Paint Filter; Total U; gamma/Iso U/Iso Th

Description: see pgs. 21 → 23

Aliquots from ends of 20 Shelby tubes and 2 plastic/foil wrapped soil samples

COMP

Sample I.D.: SHELBYS

TIME: 1515

Shelby tubes opened on bottom & aliquot removed and composited in SS bowl w/ disp. poly scoop

Analytes: Same as above (7 jars)

Description: brown, reddish brown, grey silty clay, tr. gravel & fine sand

mainly dry, but a few tubes still had moist/plastic material

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Read and Understood By

[redacted] 12-19-12

Signed Date Signed Date

Composite from drums: MW949 (3 drums); MW948 & MW949 (1 drum); MW946 & 947 (1 drum)

Sample I.D.: MW946-949

Time: 1555

Composite from 5 drums EU2 & EU4 mostly

Analytes: same as WEC 1-5, pg. 27

Description: reddish brown silty clay, tr. gray silty partings, moist, plastic

---

Composite from drums MW954 & 955; MW955; MW952, MW953, MW954

Comp.

Composite of soils from wells around OW1B (3 drums)

Sample I.D.: MW952-955

Time: 1540

Analytes: same as WEC 1-5, pg. 27

Description: reddish brown silty clay, moist, sl. plastic

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Read and Understood By

[redacted] 12-19-12

Signed Date Signed Date

Composite from drums 944 & 45-44

COMP.

Composite of soils in 2 drums from wells MW944 & MW945 (EU 1)

Sample I.D.: MW944-945
Time: 1605

Analytes: same as WEC 1-5, pg. 27

Description: same as previous sample, some dk. brown loamy clay (topsoil) material also present

---

Composite sample from 4 drums: MW957 & MW958; 959956; 960950; MW951 + MW950

COMP.

Sample I.D.: MW950, 951, 956-960
Time: 1615

Analytes: same as WEC 1-5, pg. 27

Description: same as

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Read and Understood By

[redacted] 12-19-12

Signed Date Signed Date